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INTERNSHIP REPORT

SURAJ NAGESH PARAB

2042

JANUARY 2023 - JUNE 2023

Open Destinations Infotech Pvt. Ltd.

Goa University

**REPORT OF INTERNSHIP DONE AT
OPEN DESTINATIONS INFOTECH PVT. LTD.**

Completed by:

SURAJ NAGESH PARAB

2042

For the partial fulfillment of
MCA Degree for Semester: VI
The discipline of Computer Science and Technology,
Goa Business School,
Goa University

At
Open Destinations Infotech Pvt. Ltd.
6th & 7th Floor, Kamat Grand,
Behind Caculo Mall,
St Inez, Panjim Goa. India. 403001

UNDER THE GUIDANCE OF

Mr. Saish Cuncoliencar
(Senior Test Architect)

Mrs. Reema Naik
(Senior Test Consultant)

&

Mr. Alfredo Fernandes
(Product Trainer)



Internship Certificate

This is to certify that

Student Name: **Mr. Suraj Nagesh Parab**

Registration Number: **2042**

MCA Program,
Goa University

has successfully completed an internship at **Open Destination Pvt Ltd.** as part of the sixth semester curriculum of the MCA program. The internship commenced on 9th January 2023 for 6 months.

During the internship, **Mr. Suraj Nagesh Parab** exhibited exemplary dedication and enthusiasm towards their assigned tasks. They actively participated in a rigorous training program, which spanned over two months. The training program included comprehensive modules on various aspects of software testing.

The topics covered during the training were:

- ◆ Introduction to Software Testing
- ◆ Manual Testing Techniques and Methodologies
- ◆ Automation Testing Tools and Frameworks
- ◆ Regression Suite Maintenance
- ◆ Real-time Project Contributions

Mr. Suraj Nagesh Parab demonstrated a strong grasp of the concepts taught during the training and showcased exceptional skills in applying their knowledge to practical scenarios. They actively contributed to the maintenance of the Regression Suite on a live project, exhibiting a keen eye for detail and a methodical approach to problem-solving.

Throughout the internship, **Mr. Suraj Nagesh Parab** exhibited remarkable professionalism, excellent teamwork, and effective communication skills. They consistently displayed a strong work ethic

and a willingness to learn and adapt in a fast-paced and dynamic environment.

This internship has provided **Mr. Suraj Nagesh Parab** with valuable hands-on experience in software testing, enhancing their understanding of testing methodologies, tools, and industry best practices. Their contributions to Open Destination Pvt Ltd. have been significant and commendable.

We extend our appreciation to **Mr. Suraj Nagesh Parab** for their diligent efforts and outstanding performance during their internship. They have demonstrated the qualities of a promising professional, and we are confident that they will excel in their future endeavors.

Authorized Signatory:

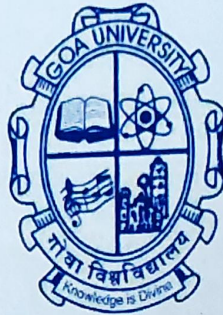
P.P. Bygadkar

Saish Cuncoliencar
Sr. Test Architect.

Open Destination Pvt Ltd.

Date: 02/06/2023

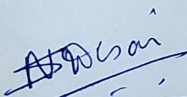
GOA UNIVERSITY



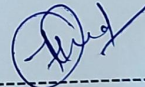
GOA BUSINESS SCHOOL

Certificate of Evaluation

This is to certify that **Mr. Suraj Nagesh Parab** has successfully completed his internship at **Open Destinations Infotech Pvt. Ltd., Panjim Goa** in partial fulfilment of the award of the degree in Master of Computer Application.



Examiner 1



Examiner 2

Place: Goa University

Date: 15/06/2023



Dean, Goa Business School

ACKNOWLEDGEMENT

I would like to express my gratitude and appreciation to all the people who helped me in the completion of my internship.

I thank **Mrs. Jyoti Pawar** (Dean, Goa Business School, Goa University), **Mr. Ramdas Karmali** (Prof. and TPO, MCA, Goa Business School, Goa University), **Mr. Ramrao Wagh** (Program Director, MCA, Goa Business School, Goa University), **Mr. Hanumant Redkar** (Assistant Prof, MCA, Goa Business School, Goa University) and all the faculty of MCA, Goa University for their constant encouragement and support during the project work.

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A Special thanks to HR **Miss. Pritoria Dmello** for giving me the opportunity to work with such an incredible and hardworking team at Open Destinations Infotech Pvt Ltd.

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INTRODUCTION

This internship report describes the tasks carried out during 5 months, full time internship period by Mr. Suraj Nagesh Parab which commenced on 9th January 2023 at Open Destinations Infotech Pvt Ltd, Panjim Goa. in accordance with curriculum of the VI semester Industrial Training of the MCA program, Goa University, Goa.

In the chapters that will follow, I will talk about the company and elaborate on the projects and tasks I worked on, a brief information about the projects, the modules I worked on. I will also provide information on the technologies studied and tools used during the internship. I shall conclude by sharing my experience with the company during the internship.

COMPANY PROFILE



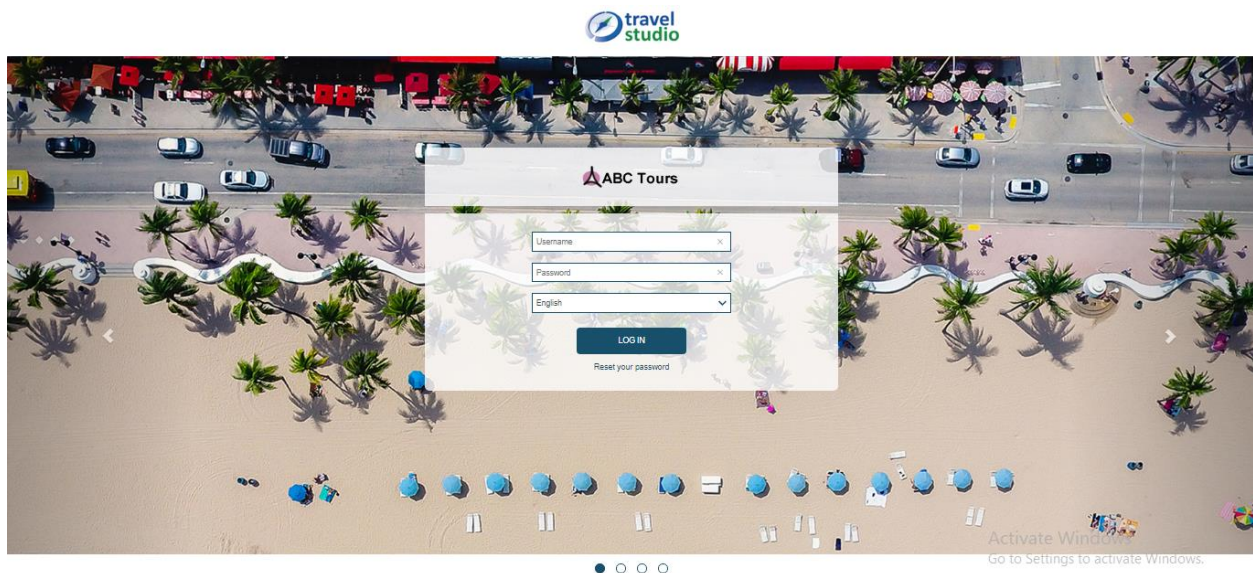
Open Destinations is an established travel technology player with more than 25 years' real-world experience and 500+ travel tech experts, solving the biggest technological issues that tour and rail operators face.

Open Destinations was founded in 1999 with a goal to transform travel reservation management. As our industry evolves we continue to build technology and provide expertise to ensure that our customers are at its forefront.

Travel companies ranging from tour operators, to DMCs, to rail operators rely on our technology to power their business. We supply technology to many of the biggest names in travel in over 30 countries worldwide.

More Information at: <https://www.opendestinations.com/>

INTRODUCTION ON TRAVEL STUDIO



Travel Studio V2 is a product of Open Destinations. It's a Travel Management Website developed for the Tour Operators. IT has features for Management of various entities like Passenger, Agent, etc. Can be used to do a Booking of Package, services that include accommodation, flight, rail, transfer, adventure, etc.

More Information at: <https://www.opendestinations.com/travel-studio-3/>

Internship Journey

I. Campus Recruitment

On 28th September 2022, Company visited the Goa university campus for the recruitment of developers, customer support as well as for the QA's.

Developers got selected through the aptitude test while customer support through a series of interviews.

The QA selection was taken on 3rd October 2022 by a panel of interviewers consisting of test consultants. Interview was based upon java and selenium. This whole process for QA recruitment took one day and finally out of all students who appeared for the interview 4 of the students got selected.

II. The start

On 9th January 2023, the day when internship started with the in- depth introduction by HR about company, product, management, training and training period.

III. Product Training

10th January 2023- 23rd of January 2023

Open Destination is a product-based company. So whenever new recruitments are done, it is mandatory for the newly recruited employees or interns to undergo the product training. This product training is conducted by Mr. Alfredo Fernandes. This Training was conducted online for the QA interns. It's a 10 days program where all the aspects of the Travel Studio with its various functionalities and versions are covered by Mr. Alfredo.

In Product Training, the newly employed are given tasks on a daily basis. These tasks were: Everyday one of the employees must have to make a presentation on a topic covered before that day. Along with this after work hours, assignments were given to be completed before the next day. Beside this everyone is supposed to prepare a report of each and every day what has been covered and send it to Mr. Alfredo the next day.

In this Product Training installation of Travel Studio V1 and Travel Studio V2 along with database connection was covered.

After the Training is complete, a practical as well as theory exam is taken which shows how much the employee understood the product.

Details of the Product Training: -

Product training Day 1 (10/01/2023)

- Session started with sharing individual experiences of a tour. Later the entities of travel domain were discussed. Which are:

Passenger (Pax): the customer.

Tour operator: Is person who handles everything

Agent: Agents are the middleman between tour operators and people

Service: Anything that can be sold to a customer is a service

Suppliers: Entities who supply to tour operator and gets paid for the service.

- **The product**

1) **TravelStudio:-** Developed using visual c++, c#, .NET . Internally used by tour operators.

2) **FareStudio:-** It is centered to the airline booking. Build for FIT and complex your operators, both for chartered and scheduled flight pricing and booking.

3) **TravelBuilder:-** Lighter version of TravelStudio

4) **Tinery:-** Mobile itinerary app for tour operators.

5) **Travel Studio V2:-** Full version of TravelStudio on .NET framework, Sold to new customers.

- **Client Server Concept**

Client who request to the server, and server who gives response to the client.

- Program is composed of: **User Interface (UI) , Business Layer(BL) and Data Storage(DS)**
- Architecture Models:

- ❖ One tier: All 3 parts in one program. Here one guy handles everything.
- ❖ Two tier: Client/server architecture
- ❖ 3 parts are distributed between client and server UI+BL \longleftrightarrow BL +DS, Travel Studio architecture is three tier.

- Setup Process

- TS V1 Installation
- TS V2 installation
- Upsizing
- Refresh the browser

Product training Day 2 (11/01/2023)

Started with the installation of Travel studio V2

Implementation

- **Organization :** The ability to setup Travel Studio to reflect the company structure.
This can vary depending on size of company number of offices or brands.
Go to Travel Studio -> Organization -> company name -> code
Sub organization , Define teams , Define defaults for each sub level.

- **Geo(Graphical) Tree:** IT Shows how business world is organized into Destinations Area where supplier, service, packages are located.

Global

+Asia

+India

–Goa

–Karnataka

+Europe

- **Country**

Defines the country master, **used in addresses**, Define states within country
Address validation

Country-> right click add new-> give country name, telephone code, nationality, iso code, language

Select country->add new state-> give name, telephone code, description

- **Types**

Linked to different are of travel studio

Address types: Main address, personal address, office address, billing address, etc.

Attributes control functionality E.g. Accommodation

Occupancy type Involves stay e.g. how many people in room, define number of adults and children, single, double, twin, triple, etc. Note: Twin bed is used for sharing purpose.

Add types- select type- add new- give name (put parameters)- save

- **Statuses**

Stages in a life cycle of an entity. Attributes control what the status

E.g. User status(active/inactive), Service status.

Statuses- select status- add new- put name (parameters if) - save

- **User management**

Create system user, give permission

user group is created and permission assigned.

1) System user: tour operators internal users working on Travel Studio.

2) Auto user: The user created to login to Travel Studio from website application can also be viewed here.

3) User group: security and permission (given at menu level, page level, control level), User can belong to multiple groups who acquire permission of all those groups.

Add new system user: say add new then fill salutation, first name, initials, last name, login, description, organization, then in security assigned to user group, give password and save.

For user group, just add new then give name for user group, add members and save. user(admin) need to change the password through Travel Studio v1.

Login go to user manager edit user- enter details name, initials, last name, description as admin and password, say save then user can login into the website.

- **Charging Duration:** Specify how a service is charged in terms of duration. Charge On basis of per day, per hour, per week, per stay, per show eg. Move theater.
- **Charging Policy**
Defines how a service is charged in terms of capacity there are attributes,
Day overlap: specify whether to charge for nights or days. ON Nights eg. hotel stays
OFF Days eg. bike rented
Unit Based: Specify whether to charge for number of units or number of passengers booked. ON unit booked (capacity needed to specified), OFF passenger booked
- **Mileage based:** Charging based on KM traveled. used with transport type of service.
- **Insurance based** Charging based on % of booking value e.g. Travel Insurance, Charging Duration is used in conjunction with Charging Policy.
- **Images** Used to add images to service, room, etc.
- **Meal plan :** Meals provided with the rate of room., First give name to meal, add code, flag the meal time Breakfast, lunch, dinner.-
- **Mileage Map:** Distance between two geographical locations, this is used along with the mileage policy.

Product Training Day 3 (12/01/2023)

Suppliers

Supplier: an entity that supplies services to tour operator.

-Is anybody that tour operators pay for the services that are booked by customer.

Ex. may be a single hotel, A chain of hotels or just an attraction (Transport/sightseeing).

Why need to create a supplier?

-We store details for future use

-When a tour operator ties up with the supplier they need to have the entire details of the supplier.

How to create supplier

1) Create a supplier group

-grouping together makes the searching easier and better

- Ex. Transport supplier, International supplier, Domestic supplier, etc.
- 2) Currency: setting up currency in finance
 - 3) Geographical location: where the supplier from.

While entering supplier details enter long name, short name, supplier type, location, currency dealing with, communication type way like email, fax, SMS, selling type, language which supposed to be used to communicate, status, preference value, etc. And save

Searching supplier:

Click in supplier in products, search on the menu, enter location click search.

Address tab

- Specify address of the supplier
- selecting country populates the state
- various address types can be entered

How to create address: press on green plus sign

Put address type, put details (here country comes from country master) and save.

Finance tab

- Financial details of the supplier e.g. bank details

Contact tab

- contact person of the supplier
- details of the contact person
 - basic
 - address

To enter details, click on green plus sign, put contact title type, salutation, contact detail type like Skype id/ Twitter. Also add address and save.

Notes tab

- supplier related notes can be stored.
- notes can be
 - system notes**
 - created by system
 - to track the changes

- cannot be deleted/edited/added by user.
- user notes**
 - notes can be added by user
 - informatory e.g take care of the customer
 - can be edited or deleted
 - Attachments

How to create a note

To create a user note, go to user note enter subject, enter note type and note status how the note should behave, select language, validity of the note- start date and end date, add photo if want save.

Services

Services provided by the supplier.

Payment terms

-Handles manipulation of payment term related to the supplier e.g. booking hall for marriage and payment of the in advance in installments at time interval.

-So, payment is basically done to supplier

-Through payment term we can define due date that supposed to be upon/after booking, on/after confirmation, on/before/after travel date.

-the payment can be % of fixed amount.

To enter payment term: go to payment term in supplier menu click on green plus sign button enter amount payable, amount type, payment due, method of payment, no.of days, note and save.

Extranet General

Suppliers Extranet

Extranet user

It is like olx user basically increase in price and all.

After that change the database to Training by first importing the folder from network extraction databases in a folder having full control or permission. Now add it to Microsoft sql database server and check for version if less than upsize it in travel studio v1 by using travel studio toolset that is using training db creating new dsn pointing to training db. Also change it for travel studio v2 by changing database in sql setup and editing web config file changing the database name. Open the website. check for about the travel studio database should be mentioned as training.

Service Maintenance

Service : anything that can be sold to a customer.

- supplied to tour operator by supplier.
- types of services are accommodation, transport, transfer, sightseeing.
- Difficult to manage whole individual so this is grouped in service types.

Main components of service:

- options**
- extras**
- facilities**

Options:

- Choices to book the services.
- It is basically each service will have its own set of options.
- options are chargeable
- mandatory components, must bought.
- Allocation can be defined
- can be linked to other options/extras/facilities of service.
- E.g. single room, double room, sightseeing (full day), sightseeing (half day), private transfer, coach.

Extras:

- Add-ons to service option
- E.g. ac/non-ac, meals, extra bed.
- chargeable
- these are non-mandatory components
- Allocation cannot be defined
- options must be booked to buy extras.

Facilities:

- Features available with service to attract the customer.
E.g. car parking, laundry, spa, gym, restaurants in hotel, pets allowed.
- not bookable
- may/may not be chargeable.
- if chargeable, to be paid directly to the supplier.
- allocation cannot be defined
- used while searching for services during booking.
- to avail facilities, option must be booked.

If considered an example a hotel name would be service, the rooms like single double triple twin deluxe will be option, extra bed, breakfast, lunch, dinner comes under extra and car parking, laundry will come under facilities.

So, this option, extra, facilities all have to specified by the supplier.

Now how to create a service

- Supplier is mandatory
- have a geographical location
- what type of service want
- status of that service
- can be created from:
 - supplier-> service tab
 - product-> service

In detail would be Go to products, select services, create, give location and service type, long name, short name, supplier, service type, description, max occupancy, available for number of nights, fill other details and save.

Detail tab

- define option, extras and services.

Process: first add option, extras and facilities in product

Here selects service type, give name for option, extra, facilities, charging policy, type of option, occupancy type or languages, in facilities facility type, etc. and save.

Then in detail tab in service check flag on for option, extras, facilities and save. Here you have to keep your status active.

Address tab

- Address of services
- copied from supplier
- various address types can be entered
- main, voucher, account.
- here supply and service can be at different locations.
- Also, service and supplier name can be same.

Contacts

- contact of person at the service e.g. manager
- Details of contact person
 - Basic details
 - Address
- multiple contacts can be added.

Finance tab

- financial details of the service
- default taxes

Voucher tab

- proof of payment like coupon
- voucher address of details
- each service will have separate voucher

Itinerary tab

- block of text held together against a particular service.
- send description in different languages.
- can be detailed or brief.

Link/alt tab

- Alt** are alternative service that you select if the desired service not available.
- link** service together, when booking the main service, the linked service are prompted and are booked together.
- once linked than compulsory have to buy the services.
- just have select services and transfer it them in link or alt segment.

Notes tab

-services related notes can be stored
Basically are the system notes and user notes.

Terms

-General terms

Pick up(time /destination), drop off (time / destination), like not responsible for luggage and others.

-Payment term

-service is booked by client - client pays to tour operator - tour operator pays supplier

-Manifest term

-A tour operator had to send report to supplier e.g. how many rooms booked.

-Other tab

-check in time, check out time, waiting till someone and occupied the room, office timings

Image tab

-set image of hotel
-set image of room

Product Training Day 4 Report (13/01/2023)

Pricing Tab

-Buying Tab

-Define price for the service option and extras There are two sub types:
-To define buying price for the option and extras.
-Price is to be paid to supplier when Pax books a service.
-This is provided by supplier to operator through contacts. Buying Type and Price Type are the important concept.

Selling Tab

- To define selling price for the options and extras.
- Different price for different markets / agents.
- In order to define a price, contract is required.
- contract: Agreement between tour operator and supplier.
- Details about rates, allocations, term of conditions, offers, loyalty programs, etc.

-To create a contract

- product- contract or service pricing tab
- season types are required

First click on create button, give contract supplier name, contract name in following format

<service name><period>contract

, Contract duration and contract are two types:

- seasonal: price is constant over period of time
- day by day: enter each prize daily
- period name is different or same from contract name.

Each contract is split into seasons because price will fluctuate.

How to add season to contract: click on green plus button, give name, from and to duration, no overlapping should be done then save it.

To define buy price:

- Select contract
- select season
- Select booking type and price type
- select days of the week price as applicable
- against options and extras enter price based on charging policy
- enter child prices either fixed amount or percentage
- select meal plans , child policy.
- verify the prices.

To define sell price:

- select contract
- select the buying BT/PT against which sell price need to be defined
- select the BT and PT
- enter child prices fixed amount or percentage
- verify the prices, check flag on internet, agent portal and save.

Blackout dates are the no discount
available Profit of selling = margin
Profit of cost price = markup

Agent

- Middleman between tour operator and passenger.
- gets commission from tour operator
- works with multiple tour operators

To create a agent-

- require agent group
- group related agent e.g. local agent, domestic agent, international agent, etc.
First select CRM then agent group add new and then give name then create agent enter details, Put agent reference name, agent status, language, communication type, default GDS, source type and other details.

Address tab

- Specify address of an agent
- various address can be stored

Contact tab

- contact person of the agent
- can be added through DNN website
- multiple contacts can be added

Finance tab

- Financial details of the agent
- agent can be:
 - net related: keeping cut of the money and then paying
 - gross related: paying full amount then getting cut
- details stored like bank details, credit card, etc.

Enquiry tab

- Enquiry from agent are recorded

- multiple version of proposal (enquiries)
- Enquiry can be converted to booking
- FIT proposal module

Booking tab

- How many booking the agent have given
- bookings of the agent
- used as reporting tool

Notes tab

- agent related notes can be stored
- system notes and user notes

Preference tab

- most preferred supplier and services shown

Complaints tab

- record complaints of the agent

Mailing tab

- To track brochures (itinerary)/ documents to agent
- To send brochures (itinerary)/ documents to agent
- requires brochures/documents packages to be setup earlier

Messages tab

- to track message/email sent to agent
- message are from booking

Membership tab

- specifies which client allocation the agent has access to

Pricing policy tab

- ability to define pricing (BT/PT) applicable to agent.

Product Training Day 05 (16/01/2023)

Passenger maintenance:

Passenger is the entity that goes for tours. There are two types of passenger

- Booking Passenger

Booking passengers are a one-time passenger who often travels

- Database Passenger

Database Passengers are those passengers who travel frequently

The task performed while doing passenger maintenance is as follows:

Creating passenger

Clicking on CRM Menu then click on Passenger Maintenance then click Create button and fill in the necessary information and details of passengers such as first name, last name, prefix, etc. and click Save. By doing this we can create a passenger.

Address tab

Once the Passenger is created now we have to add the address of the passenger. Various addresses can be added such as voucher address, main address, accounts address, etc.

Inquiry tab

Here inquiries from the passengers are recorded.

Bookings tab

Here bookings done by the passenger get recorded, and to search for those bookings there are different filters available such as booking status, booking reference, date of bookings, etc.

Relationship tab

It defines the relationship with the passenger Such as wife of, son of, etc. It helps to make family and group bookings as fast as possible.

Finance tab

In this tab, financial information such as account details, credit limits, and payments terms for passengers are recorded

Complaints tab

In this tab, complaints of the passenger are recorded

Travel information tab

In this section travel details Travel activities, Travel Destinations, of passengers are recorded and this information can be used for marketing.

Travel documents tab

In this tab, passengers' passport information, visa applications, visa details, and medical details are stored.

API info tab

In this tab, additional information about the passenger such as primary travel document information is stored.

PGI tab

In this tab, passenger habits such as medical certificates, Smoking, and consuming alcohol these types of information is stored.

Notes tab

Under this tab, there are two more tabs for user notes which are used to store notes by the user, and system notes which are used to store system notes. User notes can be edited but we cannot edit system notes.

Mailing tab

In this tab, we can track & send Itineraries, brochures, or documents of passengers via email.

Messages tab

In this tab tour operator can check for the messages of passengers

Product Training Day 06 (17/01/2023)

In itinerary tab (summary of services)

Grid views and tree view

-first click on dark blue icon in itinerary tab

-so, grid view is the normal view what is displayed and tree view has the option under that date (from-to), count of Pax, etc.

Margin amount = profit obtained

So, there is margin % and markup %

-Original cost comes from service maintenance i.e. buying tab

-Original sell will come from selling tab.

Total cost = original cost *no. Of nights* units

-If charging policy is for unit/room per week and if client stay for 3 days, the full amount of week will be taken.

-Assigned Colors- Red(assigned), yellow (in process), green(assigned)

Voucher tab: has the payment receipts.

Notes: has the system notes and user notes assigned to hotel

Images: images of the hotel put by tour operators.

Service details: pick up and drop off

Messages: messages regarding the booking

Address: address of services.

Term: general ledger account details, payment term.

Facilities: facilities regarding service

Free text tab: can type any points regarding hotel

Passenger tab in booking

-edit, add and remove passengers, basically the booking passenger

Click on Add passenger then booking details, select passenger each name then clicks anywhere on the name, select and save then ok then yes again ok.

First select row then Add relation and save

Checker tab is for share of each passenger

Voucher tab: to issue voucher to customer for each service

Header: to change booking name, dates, night

Notes: system will keep track of what activities has been done, there are user notes and system notes.

Messages: of the customer

Commission: how much commission to agent

Itinerary: description about service can be added

Documents: documents can be added, also, children can be added.

Packages

- Set of services booked together using one price.

- this is pre-defined rate.

- composed of:

 - package elements

 - package optionals

Package elements:

- Set of service options/extras

- similar to service option

- mandatory to book at least one element

Package optionals:

- Linked to one service option/extra

- similar to service extra

- not mandatory to book.

- Let's take example of package Rice- service type

 - Service name- India gate Option – Basmati

- Mapping of service against package is very important

- while building package consider the target clients/audience

To create package:

- in service type the package flag must be checked

- service should have valid buy prices

- in service sell price is not used

- for flexible package functions selling price is required.

Select package then new package, give package name, package code, number of days, package status, package type, username, organization, search priority i.e. 0, description, destination (select from geo tree). In tab below select sales operations, product code, package currency, monthly income and save. Here package will be created.

Elements tab

- Add elements to package
- package element is defined in product that is options
- charging policy is per person per package
- gender based sharing means two same genders are put in same room for creating elements click on + button add options.

Itinerary tab

- Organized as days, items, services, options
 - what will happen or activities on day basis
- Click + then add service then click on magnifying glass then select different options/extras- assign and put from and to also Duration, select elements and next
- You can search package in **package find**
 - Item is used to club group related services

Pricing

- selling prices to agent or passengers
 - selling price for the package, different markets can be defined
 - need to consider all the services/options/extras linked to elements
 - possible to define
- Click+ then departure date, set BT and PT then enter rates per person all must be checked i.e. verify, internet, agent portal save.

Departure

When customer buy service, you have to pay price to supplier Buying price then select BT PT and save
To add package in itinerary, click on pink option and here you can add package.

Product Training Day 7 (18/01/2023)

- **Allocation**

It is the reservation, the number of passengers that can be accommodated in the package.

- **Master allocation**

Supplier keeps room as reserved for tour operator

First go to allocation and select contract, add, select allocation/ freesale, now based on contract date will be displayed. Press + button, select room to reserve, give units and ser, release period and save. Now don't create sub allocation say no save.

-release period is release of allocation - informs supplier before number of days entered

To add sub allocation, click on allocation then say ok

Here in assigned to column name comes these comes from allocation name in product

1-Client allocation: with reference to different agent.

2-Internet allocation: Reserve Hotel room in online through DNN website

3-package allocation: when supplier give certain room to tour operator, TO has to keep room reserved for clients as rooms mentioned in package

4- General allocation: general reservation

Here gives sub allocation type, provide assigned to, give units, select option and set release period. This should be done for all sub allocation.

If clicked on over allocate, then if supply give 10 rooms you can over assign room but cannot book more than limit.

Sub allocation release period cannot be less than master allocation period.

Membership tab in agent is in reference to allocation, here flag the allocation names. Now create new booking, give agent change date and keep booking status as confirmed then

next. Give passenger count and name and say book. Append service.

The status will be not yet confirmed here click on edit and keep status as confirm from allocation and save & close then check in allocation, the desired allocation will be displayed.

Over sell: two client books for one option, it will be confidential

Freesale: it is always confirmed, it has override option

- **Packages:** Add widget to home called package accessed
- **Departure tab:** -Dates when the package is available for booking two types of departure

FD- fixed departure
NFD-not fixed departure
SOB- seat on bus

Product Training Day 8 (19/01/2023)

For some service you cannot get allocation

master allocations come from the suppliers

Available for **SOB departure** only for specific departure

-add service

-remove service

-change sequence of series

-view passenger on booking

-view passenger using service

-collate costs of departure level

Flexible function available for FD and NFD

-update service

-extend day

-add/ delete day

-delete package service

-alternate package service

-change details

-When tried to extend day in SOB it cannot be extended

-when tried to extend day in FD it just needs to recalculate the price

- **Rules** -Rules are condition imposed on services when override them.
System → setup → Rules
- **Exclusion rules:** excluding certain agent from booking hotel. Only for agent bookings. Rules, select exclusive rules and say Add, then add name and message select not to be displayed for then select an agent (this can be applied to agent group). Here you can enforce rule means it will be strict or compulsory cannot be overridden and say save's minimum stay
specify a rule stating that passenger should stay minimum number of

nights. These cannot be less than the mentioned. Rules select minimum stay, add name and message then if check is on flag is there select day of week then select minimum duration and save.

- **Restrictions:** service is not available on certain days, might be reconstruction is going on or repairing. Select rules and restrictions like Monday closed put message and not available for if all week then tick whole week, here if check in on then you have to check in on that day and if allow check out on then you have to leave on certain day save.
- **Allocation restrictions** allocating room compulsory, this apply to allocation.
- **Booking period rule:** cannot book a service for particular day before service date.
- **Occupancy:** applies to accommodation types of option here you have to define adults, children and age.
- **minimum child age:** minimum child for age required to book room
- **child discount:** this rule is for packages, for age can be certain discount

Special offer There are 3 types

stay pay rule

discount type rule

EBO rule.

Stay pay you will give certain package like stay for 4 nights pay for only 3 nights, in discount type certain amount of discount is given for booking room and EBO is early bird offer, it will active when somebody comes first and books. Here put the condition like min stay, min Pax, arrive on particular day, if occupy on then select applies to week day, day of stay, choose whether flexible or rigid, put receive from supplier (what getting free) and pass to agent/client and save.

To create rules, go to service then rules then select rule type available in setup rules (enforce or not) then click + put rule name, contract if any then date range then select which option to be applied for and save.

Product Training Day 9 (20/01/2023)

Messaging: Tour operator communicates with his clients (Agents/passengers) and suppliers.

- examples: confirmation, cancellation and payments.
- one way communication (from travel studio it goes out) and only sending is tracked.
- Messaging is based on templates
- Template is document containing static and dynamic data.
- <TagName> standard tag used for retrieving 1 value.
- Loops: For returning multiple value. These are called as Detail start codes.
- <LoopName_LB> here loop starts.
- <LoopName_LE> here loop ends.
- Different types of template:
- client messages: sending messages to client (agent/passenger), sent from booking.
- supplier messages: For sending messages to supplier from booking
- package messages: for sending messages from package to client.
- voucher templates -for issuing vouchers to client from booking.
- Quote templates -Sending messages to agent from quote
- Manifest template-for sending messages (passenger details) to supplier. automatically based on release period.
- purchasing template-for sending messages to supplier for particular service.
- Two types of sending messages

1 -Client side mailing

- When mailers or messages are sent from travel studio client system.
- Go to System then message setting, select general messaging then choose if want to use server side mailing then message format and supplier message format then send as attachment (RTF/PDF).
- Require MS word, MS outlook with CDO support

2 -Server side mailing

Here you require SMTP server details, SMTP account display name, SMTP account, SMTP username, SMTP password, CC address.

MS Word, SMTP server details, TS task manager

Right click then Send message, select agent confirmation letter and send, put address (whom to send) and email, cc address say ok and yes now pop will

appear as message has been queue (because of server side mailing, server responsible for sending)

Here checks mail address in agent address.

To install Task manager, right click run as administrator the exe installer file, say next to everything and finish. Task Manager will be installed.

Now in c drive, Task manager window, two files will be created 1) **window server** and 2) **config file**

- check messages sent to supplier in messages.

- In V2 cannot create template so in V1 message operation have to be carry out.

- TS V2 always uses server side emailing.

Task Manager

- A task is an activity performed.

- TS has 3 tasks

- Internal Task**: Are those tasks in which TS users communicate with each other.

- create some documents, check some documents, files, etc.

To create task

Go to booking then select task manager and search for task which are due for current users if clicked search, now click on add, here one user can send task to another user/group then choose user and group and task type and task status then link task to a, now put name, subject, task description and due date then click OK.

Now login as user and task will be visible in user tasks.

User can now change status, re-schedule gives due date, forward task to another person and give status and OK.

- Launch the task but user if linked to booking open up booking

- you can check status of task in history notes

- can get task due/pending

- can search for urgent task

- can search for completed or deleted tasks.

- can be search based upon text.

Booking task

-some tasks linked to only booking, collect the information regarding booking, send documents to passenger go to booking tasks.

Go to booking then task then add, put **task type**:

1- send document: visas

2- collecting additional information about passenger: PGI

3- verify payment terms: payment term defined against passenger, supplier, agent.

4-SQL script-stored procedure in background

5-General notes-reminders like keep things ready

-Let's choose collect passenger information as task type and this works for only database passenger

-here put task name, put details and select doc

-Now go in Trigger and launch task when days before travel/days after travel/put days, launch after task complete flag, repeat after days put days.

-In alert section sent to user/group, action, type, status, link to, subject, select element from side like 2 days prior and save task.

-for action to send email first provide email and subject.

-This task has status and booking task status.

-To change status of task or to handle task This Task Manager will do.

-Task Manager send server side message and handle task

1-Then TO will select passenger from admin give the document as owner and check.

2-Now to add multiple tasks:

-setup then tasklist then add and give task list name. Now all this when created in v, Impost task list, here click the entry you want to select and select imported in booking.

3- Automate task import -set as booking default in v1

4- go to status and select confirm and give tasklist confirmation. This will automat booking here set task list name at the end.

5- while doing verify payment service, task is added booking automatically.

6-package task desire, here collect information from package task:

Booking task and Departure task

For booking task click add then select booking task, add one task or can import task.

When package booked, all the task will be added to booking and then collect the information.

-Departure task

-for particular date can add booking task add someone booked departure, get added to booking task.

Package task

-Tasks related to package

-to manage workflow of package

Go to package builder and then package tasks, here 2 types can be added: 1) **SQL scripts** and 2) **General Notes**

1- **details** of tasks

2- **Trigger** based upon package

3- **Alert** will based /related package This task doesn't carry to booking.

Whatever task added in package builder that will be carry forward to package departure.

Import task list then system package task and based upon user permission then select admin check flag on default package task and login again, go to add put name and add task.

Status then package status put onsale and tasklist none and save automate package workflow.

Cancellation policy

Putting penalty on cancellation.

Different cancellation term makes cancellation policy

Go in product then select cancellation policy say new give name, press + to add terms and put number of days when like before/after and amount then for how many numbers of nights applied select per booking.

If cancelled well before then charges are low. And cancelled just before then are high. Booking date: booking creation date

No show: person didn't show up at hotel.

Booking start date: when actually travelling First day of booking

Service start date: first day of particular service when it is utilized so each service has its own start date.

In service, for supplier, when cancelled the Tour operator pays to supplier for client, when cancelled client pays to tour operator

Here 1 policy can be added for one term to add multiple give multiple terms

Price band

Prices based upon Day based /passenger (Pax) based. Give from and to and amount for that. And say save.

Product Training Report 10 (23/01/2023)

Sell price generator

- set service
- buying booking type set
- enter the BT and PT
- now add sell price

Here + and put BT
and PT Then click
OK

Finance

Here Two areas are main:

1- Account receivable

- Meaning money is received
- it is the process or payment which the tour operator will receive from its client (passenger/agent) who have purchased its good and service on credit.
- it is the money that is owed to the tour operator typically bt customer.
- financial instrument used is sales invoice.

2- Account payable

- it is the money a tour operator owes Its vendors.
- is the money to be paid to suppliers for using their services.
- financial instrument used is purchase invoice.

In TS v1

-recover money from clients

Here you have to add finance widget to booking home.

Two areas in finance tab:

1- **Financial status area**: will contain records/rows for transaction processed.

2- **Display area**

Forecast tab

-what is the forecast of receive and pay, this comes from booked services packages.

-adding/removing will affect forecast.

Actual tab

-revenue: shows values based on invoice/credit note raised.

-cost: shows value based on purchase invoice raised.

-Booking status should be confirmed to avail some functions because ON Request booking status doesn't have financial flag on.

Statement of accounts

-Displays the amount paid by passenger for different services, also its shows agent details, payment due date.

-Go in finance tab - click statement

Invoice

-Invoicing is requesting payment from the lead passenger/ agent for the booked service/package.

-invoices can be generated against:

-All passengers

-Specific Passengers

-Click on invoice then choose for which on to create invoice then click ok. Here you can edit, print, send invoice.

-more than one invoice can be raised in booking.

-also known as sales invoice.

-invoice number auto generated in system wide setting.

-Not a proof of payment, just a paper stating the items booked by passenger/agent.

Receipt

- Generated when passenger/agent does payment of booking.
 - payment methods are cash, cheque, credit cards, client credit, etc.
 - raised against previously generated invoices.
 - possible to raise receipts without invoice. Dummy invoice is raised.
 - message template can be linked
- Click on receipt then put receipt date and type.
- Cash receipt in receipt type also belongs with refund type.
 - By checking receipt only flag tour operator can get only receipt. When done auto-invoice, it creates dummy invoice in background.
 - Put receipt value and amount paid, now remaining will show in outstanding.

Refund

- Amount to be returned back to the agent/passenger.
 - refund is raised against the receipts.
 - reasons for refund
 - excess amount collected
- cancellation**
- effect on statement of account
- Click on refund then put refund date put type and description, then refund number will be auto generated, put against which passenger and put refund amount then save.

Custom invoice

- standard invoices are linked to booked services/packages whereas the services that are not booked through travel studio e.g. international flights. Creation of invoice be done through custom invoice.

Credit note

- to reverse the generated sales invoices.
 - full invoice amount is reversed.
- Custom Credit notes
- from tour operator to agent/passenger

-to partially reduce the generated invoice value.

-used along with cancellation.

***Any financial transactions once raised cannot be deleted.**

Example : client books service for 500 as advance, itinerary rate is 1000 forecast becomes 1000, then invoice is raised for 1000 and actual becomes 1000, then the client cancels the booking, according to cancellation policy which is 40%, now itinerary becomes 400 and forecast becomes 400 to make it actual the custom credit notes of 600 here actual becomes 400. Now amount paid is 500 so receipt has already raised against 500 so to make it 400, 100 is refunded to client.

2-Account payable

-In tab, total booking prices option/extras.

-here tour operator pays to supplier

-can filter the searches.

-payment done through purchase invoice.

-supplier raises sales invoice for his services sold to tour operator.

-payment to supplier is approved by the tour operator through accounts

→**purchase invoice**

Creation:

-Here tour operators look through a purchase angle.

-Tour operator can close any purchase invoice by clicking on closed flag between selected date.

-Details of purchase invoices can be seemed through reports. Exporting Financial Details

-Travel Studio is not accounting system to give Balance sheets.

-the financial data needs to be exported to accounting system e.g. Popsy, Sage MMS, Sun Accounts, etc.

How to export:

-Select organization then default then accounts, put export file type, export file location, import file location, etc. and click OK.

- Go to account then Export financial details, this will export details to the software, here choose transaction type, file type and transaction date, etc.
- In Batch invoice creation, get all booking in next month.
- select booking of a month and say OK.

SVN

24th January 2023

After Test trainees are introduced with **SVN**. The application used is tortoise SVN. A repository where all the project files are present. Files are being checked out from the repository to the personal systems by testers, then executed, updated and if changes are made then committed to SVN repository.

IV. Learning Manual Testing Concepts

25th January 2023 - 03rd February 2023

After the Product Training, QA interns were directed for understand the manual testing concepts. Interns were provided with the ISTQB pdf file which contained manual testing topics. These topics were covered by Sr. Test Architect Mr. Saish Cuncoienar, in these meets every day a new guest from testing team used to be present to provide guidance upon the new topic learned on that particular day.

Here the Interns were distributed with topics and they were supposed to make a presentation and present it on the assigned days. After the presentation Mr. Saish along with the guest present, they used to provide further more information on that particular topic.

1. In Manual Testing Concepts Learning the first lesson was based upon the **fundamentals of Testing**. It asked the question why testing was necessary?

- When a software is developed it is developed according to certain guideline, based upon a concept, with an intention in a mind that it will provide a certain type of service to the consumer.
- After development and deployment to the consumer if the developed software doesn't work according to the guidelines based upon which it is created and the functionality differs from what is prescribed by the consumer.
- It is of no use, while developing the developer codes the whole thing to be running but to check that software functionality if it is according to the documentation provided by customer, all the elements of that developed software are functioning properly, what things are to be maintained in that software, even when a customer finds the bug,
- It lowers software developing company reputation along with standard in the market, so this the reason testing is needed for each and every software /application developed.
- When talked about causes of software defects would be negligence while coding, functionality of that element is not proper, performance issues, even multithreading issues, etc.
- SO, testing basically helps in building up quality of the software that lowers the risk of finding any defects which cause failure in the software functionality. Finding up of defects, quality build up, helping in making decisions about future of the software, these might lead to further prevention of defects that might have caused if certain things are not changed.
- Testing based upon 7 principles, testing shows presence of defects, it will never show defects, exhaustive testing is impossible, should be focused on particular thing to test, Testing should be started as early as possible then defect clustering, small piece of code might contain most defects. Then if same tests are repeated again and again they will show no new defects. Testing is based upon what thing we are testing. Never expect error fallacy.
- So, in Testing first tests are planned as bugs reported or new system build up, the tests are analyzed and designing takes place according to the behavior of software. Then those test cases are implemented and executed. After execution, report is made and exit criteria is evaluated. After the test closure activity comes up.
- The defects found should be communicated with the developers in constructive way. The developers should take it in a challenging spirit. Bad

feeling between different teams of the company should be completely avoided.

- Certain code of ethics to be followed when testing, while testing public interest should be taken into consideration. The client and employer, the product, judgement about software, profession, the management, colleagues and importantly self.

2. **Testing throughout the software life cycle:** Firstly, glance through the software development model. The v model consists of the component testing, integration testing, system testing, acceptance testing, iterative incremental model that is in a short life span of software development cycle, it is being developed, analyzed, tested and the process repeats after a short span. Then testing within a life cycle of software.

- Test levels consist of components testing, basically databases and programs testing. Integration testing that is based upon the design of the software, workflow, database. System testing that is use cases, software specification. After that acceptance testing, the developed system is ready for users to work upon.
- Test types are the functional Testing, where functionality of the developed software is checked. Then nonfunctional testing where the aspects of software are checked like characteristics of the system. Structural testing, testing of the architecture of the software. Regression testing if changes are made then the developed product should be retested.
- Maintenance Testing is basically once the software is deployed then the software should be checked on the regular basis if any part of it shows defects because of data expiry or the elements missing and all.

3. **Static Techniques** are the techniques used when there is no execution of code. In sight of any changes possible those are reviewed in this type. Here productivity is increased, time cost gets reduced.

- Then there are review processes like formal reviews. Here everything is done carefully, First Planning like defining criteria, then kick off the documents, individual preparation, then examination along with that evaluation and recording of results, then rework and lastly follow ups are done.
- Formal review includes various roles and responsibilities in the organization as manager, moderator and reviewers, authors, scribes.

- check lists are made that vary to every user so can accumulate everyone's perspectives.
- Then types of reviews are informal review where there is no formal process and sometimes not recorded also, walkthrough is a meeting led by the author and discussing different scenarios, Inspection led by trained moderator which is a peer examination and matrix gathering, technical review is documented where decision are made and solving of technical problems.
- Success factors for reviews involve the right people that have clear minds and predefined objectives, with clear reviews, defects are searched, welcomed, and a point that can create scope of improvement etc.
- 4. **Test Development Process:** process where various test cases are designed to execute the testing for the software or product. Test development consists of various steps, where the requirements are gathered for the product or software, based on requirements, the design and document are made, then the implementation process starts. During implementation, various tests are carried out to ensure the functionality of the product
 - Formality of Test Documentation → Concerned with documentation of testing and input and expected outcome
 - Test Analysis → Identifying test conditions
 - Test Design → Specifying Test Cases
 - Test Implementation → Specifying test procedures or scripts
- Categories of Test Design Techniques
 - **Black Box Technique** → This black box has only inputs and outputs, and the tester knows nothing about how the box is arranged inside. Here we are analyzing more of what the software does, not how
 - **White Box Technique** → White-box testing uses an internal system perspective to develop tests
 - **Experience Based Technique** → In experience-based techniques, people's skills, knowledge, and experience are central to test execution.
- Specification Based or Black Box Technique
 - **Equivalence Partitioning** → This technique is based on the idea that a system can have a number of different inputs, and that each input can be divided into a number of different equivalence classes. An equivalence class is a set of inputs that are expected to produce the same output from a system

- **Boundary Value Analysis** → This technique is based on the idea that a system can have a number of different inputs, and that each input has a number of different values that it can take. The different values that input can take are known as boundary values
- **Decision Table** → This technique is based on the idea that a system can have a number of different inputs, and that each input can have a number of different values. The different combinations of inputs and values are known as decision points
- **State Transition** → State transition testing is a testing technique used to uncover errors in the transition of the system from one state to another This technique is based on the idea that a system can be in one of a number of states, and that when an event occurs, the system transitions from one state to another. The events that can cause a state transition are known as triggers and the states that can be reached from a given state are known as targets.
- **Use Case Testing** → A use case diagram is a graphical representation of the use cases for a system. The focus of this type of testing is on the functionality of the system as a whole, rather than on individual components
- **Structure Based or White Box Technique**
- **Statement Coverage** → Here, the idea is to cover the entire code statement. This can be done while ensuring that every statement is executed at least once while testing the application
- **Decision Coverage** → Here, we try to cover the entire code decision. This can be done by testing every decision like, if-else, for loop, and other conditional loops while the code is executed at least once
- **Condition Coverage** → This white box testing technique involves 100% condition coverage of the code. Here, the each condition of the code is executed at least once.
- **Decision/ Condition Coverage** → This is a hybrid or mixed model that involves entire decision/condition coverage of the code. Here, the each condition/decision in the code is executed at least once.
- **Multiple Condition Coverage** → It makes use of a combination of techniques that are most suitable for software application
- **Experience Based Testing Technique**
- **Error Guessing** → It is used by a tester who has either very good experience in testing or with the application under test and hence they may know where a system might have a weakness

- **Exploratory Testing** → : It is hands-on testing where the aim is to have maximum execution coverage with minimal planning. The test design and execution are carried out in parallel without documenting the test design steps. The key aspect of this type of testing is the tester's learning about the strengths and weaknesses of an application under test
- Test Management has tests organization and its independence. Improving code quality, no independent testers. Independent testers have no boundaries. Task of the test leader and tester lead the testing and planning, keep a track of status of test cases and tester do their job writing test cases, automating, analyzing them.
- Test planning include what to put in test brainstorming about the test, test planning activities include gathering requirements and all other things that are required for test cases. The entry criteria. The exit criteria and test estimation, how the test will work. The making strategies about test, how to approach the test cases. The its test progress and monition control, reporting of test and test control.
- Configuration management keep integrity between the tasks. There is risk in testing. Those are project risk and product risk. Incident management providing feedback to developers about the executed products.

5: Test Management

- **Test Organization and Independence**
 - Test Organization and Independence in software testing refer to the structure and arrangement of the testing team, and the degree of separation between the testing team and the development team.
 - Test Independence: The testing team should be independent of the development team, and not have direct reporting lines to development management. This helps to ensure that testing is not influenced by the development process, and that the results of testing are not influenced by the priorities or goals of the development team.
- **Tasks of the Test Leader and Tester**

The Test Leader and Tester roles in software testing play an important part in ensuring the quality and reliability of software applications.

➤ **Test Leader tasks:**

1. Define testing strategy and approach.
2. Plan and schedule testing activities.
3. Communicate with stakeholders, including project managers and customers.
4. Review and approve test results.
5. Report on testing progress and results.
6. Identify and mitigate testing risks.

➤ **Tester task:**

1. Design and develop test cases.
2. Execute tests and record results.
3. Report and track defects.
4. Verify that defects have been resolved.
5. Review test cases and provide feedback.

Both the Test Leader and Tester roles require a strong understanding of software testing processes and techniques, as well as the ability to work well in a team environment.

● **Test Planning and Estimation**

Test Planning in software testing refers to the process of defining how testing activities will be carried out, including the resources, schedule, and scope of testing. It typically involves the following steps:

- Define test objectives: what goals the testing is meant to achieve.
- Determine test scope: what parts of the software will be tested and what parts will be excluded.
- Create a test strategy: outline how testing will be performed, including the types of tests that will be run, and the approach to testing.
- Allocate resources: assign personnel and other resources to carry out testing.

● **Test Planning Activities**

- Establish testing environment: identify the hardware, software, tools, and test data that will be required for testing.
 - Develop a test schedule: determine when testing will be performed and how long it will take.
 - Prepare test data: create or acquire the data needed for testing.
 - Identify risks and mitigation strategies: any potential risks associated with testing and develop strategies to mitigate those risks.
 - Create a test plan document: document the test plan, including the testing objectives, scope, strategy, environment, schedule, resources, risks, and mitigation strategies.
- **Entry Criteria & Exit Criteria**
 - Entry Criteria and Exit Criteria in software testing are the specific conditions or requirements that must be met before testing can begin and before it can be considered complete, respectively.
 - Entry Criteria:
 - Requirements: The software requirements must be clearly defined and agreed upon.
 - Test environment: The testing environment must be set up and ready to use.
 - Test data: The necessary test data must be available and in a usable format.
 - Test cases: The test cases must be designed and ready to be executed.
 - Exit Criteria:
 - Test completion: All planned tests must have been executed and the results documented.
 - Defect resolution: All identified defects must have been addressed and resolved.
 - Acceptance criteria: The software must meet the agreed-upon acceptance criteria.
 - Approval: Approval must be obtained from relevant stakeholders, such as the customer or project manager.

- **Project Risks**

➤ Risks are **the possible problems that might endanger the objectives of the project stakeholders**. It is the possibility of a negative or undesirable outcome.

- The project risk that can endanger the project are:

- Risk such as the late delivery of the test items to the test team or availability issues with the test environment.
- There are also indirect risks such as excessive delays in repairing defects found in testing or problems with getting professional system administration support for the test environment.

- **Product Risk**

➤ Product risk is the possibility that the system or software might fail to satisfy or fulfill some reasonable expectation of the customer, user, or stakeholder.

➤ The product risks that can put the product or software in danger are:

- If the software skips some key function that the customers specified, the users required or the stakeholders were promised.
- If the software is unreliable and frequently fails to work.
- If software fail in ways that cause financial or other damage to a user or the company that user works for.
- Poor data integrity and quality

- **Incident Management**

Incident: Incident is an unplanned interruption.**an event that is not part of normal operations that disrupts operational processes.**

A problem can cause more than one incident which is to be resolved, preferably as soon as possible.

- Incident management is basically **an art of identifying, investigating and taking necessary actions to prevent such an event**. The idea behind incident management is to ensure that incidents are tracked from its identification stage until its correction stage, so that the final result is bug free.

Details of the incident report may include:

- Date of issue, issuing organization, and author
- Expected and actual results
- Identification of the test item (configuration item) and environment

- Status of the incident (e.g., open, duplicate, waiting to be fixed, re-test, closed)

6. Tools for Testing: which can be defined as products that support various test activities starting from planning, requirement gathering, build creation, test execution, defect logging and test analysis. These testing tools are mainly used for testing software firmness, thoroughness, and other performance parameters

Management Tools apply to all test activities over the entire software life cycle can be divided into

- Test Management Tools
- Requirements Management Tools
- Incident Management Tools (Defect Tracking Tools)
- Configuration Management Tools

Static Testing tools provide a cost-effective way of finding more defects at an earlier stage in the development process which is divided into

- Review Tools
- Static Analysis Tools
- Modelling Tools

Tool support for test specification includes

- Test Design Tools
- Test Data Preparation Tools

Tool support for test execution and logging includes

- Test Execution Tools
- Test Harness/Unit Test Framework Tools
- Test Comparators
- Coverage Measurement Tools
- Security Testing Tools

Tool support for Performance and Monitoring includes

- Dynamic Analysis Tools
- Performance Testing/Load Testing/Stress Testing Tools

➤ Monitoring Tools

Tool support for specific testing needs

➤ Data Quality Assessment

Other testing tools exist for usability testing

Benefits of Test Tools

- The amount of time and effort spent performing routine repetitive tasks is reduced.
- Predictable and consistent results.
- Data captured by test tools can provide better metrics and accurate test management info.

Risks of Test Tools

- Over-optimism of the test tools' abilities
- Not enough initial time and effort was put into the tool's setup.
- Program or environment changes a lot of life such that inconsistencies and issues require constant attention.

Steps for Introducing a tool into an organization

- Analyze the problem/opportunity.
- Look at alternative solutions
- Check the constraints and requirements of the tools
- Perform an evaluation and create a shortlist
- Detailed evaluation along with a proof of concept
- Pilot project

V. Learning Java Concepts

6th February 2023 – 17th February 2023

When done learning the manual test concepts, Java Concepts were cleared to the interns by Mr. Saish. This was taught theoretically by giving explanations and examples about them, followed by coding on notepad or eclipse IDE.

Several assignments were also given out to be completed on that particular working day.

Java is a base for testers when it's about testing. While Java is an object-oriented language, it has **classes, objects, method, interface, constructors** and thriving on concepts like **polymorphism, encapsulation, inheritance, abstraction**. Java also has Exception Handling.

Objects have states and behaviors. Example: A dog has states - color, name, breed as well as behaviors – wagging the tail, barking, eating. An object is an instance of a class.

Class can be defined as a template/blueprint that describes the behavior/state that the object of its type supports.

A **method** is a collection of statements that are grouped together to perform an operation. When you call the `System.out.println()` method, for example, the system actually executes several statements in order to display a message on the console.

Polymorphism is method overriding and method overloading. The arguments can be same and the same name is used by subclass is method overriding and sub class having same name but different parameters is method overloading.

Encapsulation in Java is a mechanism of wrapping the data (variables) and code acting on the data (methods) together as a single unit. In encapsulation, the variables of a class will be hidden from other classes, and can be accessed only through the methods of their current class. Therefore, it is also known as data hiding.

Inheritance can be defined as the process where one class acquires the properties (methods and fields) of another. With the use of inheritance the information is made manageable in a hierarchical order. Types are single inheritance, multi-level inheritance, hierarchical inheritance and multiple inheritance.

Abstraction is a process of hiding the implementation details from the user, only the functionality will be provided to the user. abstraction is achieved using Abstract classes and interfaces.

In java, mostly after scratching simple programs of arrays and operators, moved on with the **interfaces**. As interfaces are used to achieve the abstraction. So, an interface it's like a container which store the methods of the classes without its body and those methods body can be described in other class having main method in which object can be created of those methods for calling them.

This is a simple format of interfaces:

```
interface InterfaceConverse {  
    void milesconvertKM();  
    void kmconvertMiles();  
}
```

These interfaces are used in testing. They are used listeners. That will be further elaborated in different topics.

A **constructor** initializes an object when it is created. It has the same name as its class and is syntactically similar to a method. However, constructors have no explicit return type.

An **exception** (or exceptional event) is a problem that arises during the execution of a program. When an Exception occurs the normal flow of the program is disrupted and the program/Application terminates abnormally, which is not recommended, therefore, these exceptions are to be handled.

VI. Selenium Training

20th February 2023 – 24th February 2023

TOOLS AND TECHNOLOGIES USED

- Eclipse IDE
- Java
- Selenium WebDriver
- Maven

After Learning Java concepts, Trainees proceeded to Selenium Training. So here, selenium automates browser with chromedriver. To do that, First Have to work with maven.

Maven

Basically start downloading Selenium dependency from the online maven repository then pasted in the POM.xml file in eclipse.

POM stands for Project Object Model. It is a fundamental unit of work in Maven. It is an XML file that resides in the base directory of the project as pom.xml. The POM contains information about the project and various configuration details used by Maven to build the projects.

```
<dependency>
    <groupId>org.seleniumhq.selenium</groupId>
    <artifactId>selenium-java</artifactId>
    <version>2.53.0</version>
```

```
</dependency>
```

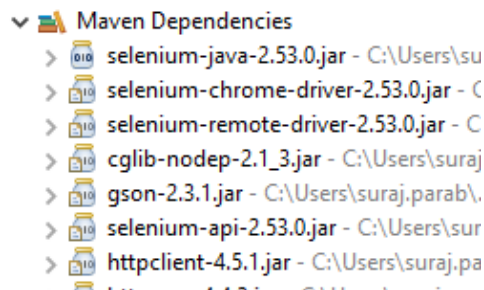
Also have to work with the TestNG Framework, To process for that:

TestNG dependency is downloaded from maven repositories and put in the POM.xml file. Maven contains all the jar files, when these dependencies are downloaded and put into POM.xml and run as maven install.

```
<dependency>
    <groupId>org.testng</groupId>
    <artifactId>testng</artifactId>
    <version>6.9.8</version>
```

```
</dependency>
```

Maven Dependencies have all the jar files corresponding to the dependencies get installed and thus can be used further for automation, report generation, HTTP connections, logging, etc. Once done run as Maven build.



So coming back to Selenium, we have given a website and using selenium we have to automate various web elements testing.

So, firstly started with Add deleting the button on the website. Procedure is to set up the chrome browser first, initiate the webdriver so that it can access the page elements.

To access the website automatically

```
driver.get("http://the-internet.herokuapp.com/");
```

then By verifying and validating every element on the particular webpage move forward towards the target.

```
String pageTitle=driver.getTitle();
```

This getTitle is used here to get the title of the page working on validate with expected title. Using Assert which is a TestNG assertion command. If this is true then only it will move forward otherwise it will be a false condition and the process will halt.

```
driver.findElement(By.xpath("//button[contains(text(),'Add  
Element')]")).click();  
if(driver.findElement(By.xpath("//button[contains(text(),'Add  
Element')]")).isDisplayed()) {  
    System.out.println("1st button get added here and verified");  
    Thread.sleep(3000);  
}  
else  
{  
    System.out.println("1st button didn't add up!!");  
    driver.close();  
    System.out.println("close the chrome browser");  
}
```

This is a simple piece of code that actually finds a button to add an element on the page with the conditions if that button is found or not found. Thread Sleep is used for timeout. Though it is a bad practice in testing.

Just like this various other web elements have been tested for their functionality by automating the tests using selenium for example, checkbox, dropdown, hover, nested frames, etc.

This is widely used for building test scripts for testing the Travel Studio v2, that is switching from one frame to other

```
driver.switchTo().frame("iframe");
```

and many more which will be further discussed in other topics.

VII. Working with TestNG

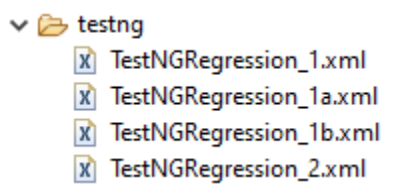
27th February 2023 – 02nd March 2023

After Testing of Web elements using selenium, trainees move forward for testing different smoke suites altogether because there are multiple Features, Scenarios, functionalities of Travel Studio v2. So, all the different test cases belonging to one feature of the travel studio were put in a test suit and executed for different scenarios. This is all possible because of TestNG.

TestNG framework makes execution flexible with annotations, sequencing, and grouping.

After Understanding the TestNG trainees were offered a demo project to work upon where they are introduced to the TestRail, test case mapping, SonarQube, Jira. All these are tools for code quality analysis, keep track of test cases execution, contain the reports and summary of the test cases.

Below picture depicts the arrangement of the TestNG files in the Eclipse



TestNG Framework provides Assertion which helps in validating the result obtained with the actual output

ATU reports for the report generation which is .html format

Logging when used it shows the logs in console about the execution when logger is called

Capture screen is for screenshot that is obtained in the ATU reports.

```
import org.testng.Assert;
import atu.testng.reports.ATUReports;
import atu.testng.reports.logging.LogAs;
import atu.testng.selenium.reports.CaptureScreen;
import atu.testng.selenium.reports.CaptureScreen.ScreenshotOf;
```

There are different annotations in Test NG:

@Test

@Test– This is the root of TestNG test cases. To use TestNG, all methods should be annotated with this annotation

(priority = 5)

Priority: You can prioritize the order of your test methods in TestNG by defining a priority. Based on the defined priority, the test shall execute in that order.

dependsOnMethods = { "CreateCommissionScheme" }

DependsOnMethod: This attribute works miracles if one test case is dependent on another. For example, to view your profile details, you need to login to the application. So, your profile test case is dependent on the login test case

The Major Annotation are:

- **@BeforeMethod and @AfterMethod** – These annotations run before and after each test method
- **@BeforeClass and @AfterClass** – These annotations run once before and after the first *@test* method in a class
- **@BeforeTest and @AfterTest** – The BeforeTest annotation runs before the *@BeforeClass* annotation and the AfterTest annotation runs after the *@AfterClass* annotation

- **@BeforeSuite and @AfterSuite**– These annotations run before and after any test annotated method in a class respectively. These annotations start the beginning of a test and the end of it, for all the classes in a suite

Talking about the execution order of these annotations, they execute in the below order:

@BeforeSuite -> @BeforeTest -> @BeforeClass -> @BeforeMethod -> @Test -> @AfterMethod -> @AfterClass -> @AfterCTest -> @AfterSuite

Below is the Format for TestNGRegression.xml files

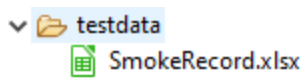
```
<?XML version="1.0" encoding="UTF-8"?>
<!DOCTYPE suite SYSTEM "https://testng.org/testng-1.0.dtd">
<suite name="Suite" parallel="none">
<listeners>.....</listeners>
<test name="Test">
<classes>
<class name="com.odl.common.tests.login.LoginPageTest" />
</classes>
</test>
</suite>
```

VIII. Automation Framework and Regression Maintenance on Live Projects

13th March 2023 Onwards

Interns after understanding the testing Tools, framework and working on demo projects are then put onto the live projects.

This Automation Framework is a data driven testing framework where the data is present externally in the excel sheet under the folder name testdata.



Objective: To perform Regression as well as Manual testing on the different project over the Weekdays. Execute test suits, Maintenance of the Test cases and check the performance and functionality.

Tools and technologies used:

- Eclipse IDE
- Java
- Selenium WebDriver
- TestNG
- TestRail
- Travel Studio V2

Contribution:

Working on :

- ✓ Longitude Release
- ✓ Sunstone Release
- ✓ Camino Release
- ✓ Arequipa Release

Here maintenance of test cases, bug identification and reporting, manual Testing, updating TestRail status, data manipulation and verification such work is carried out.

These builds have their Test suites which contain various test cases each containing one login class and one test class.

Now each of the test classes present will be having a various number of methods present in the Test.java file. So, these methods are arranged as priority wise based upon what should be tested first or as per flow.

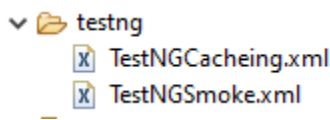
These methods have their bodies described in a page.java file. The abstraction can be observed over here. Only the methods are displayed in test.java but their bodies are stated in page.java.

```
> com.odl.common.pages.login  
> com.odl.common.pages.logout  
> com.odl.common.tests.login  
> com.odl.common.tests.logout
```

There are some common utilities pages that are also present as in to launch the chrome browser, initiate the driver, etc.

For the job when the build is given for regression, first from the TestRail take up the failed test cases from a particular module (booking, flight, product, package, etc.), search for their Test.java file, once got then check for the dependencies, annotations, etc.

When done checking then with the class name search in TestNGRegression.xml file. There are also the testdata file present that contains excel sheets which have data. Since, this is a data driven testing framework.



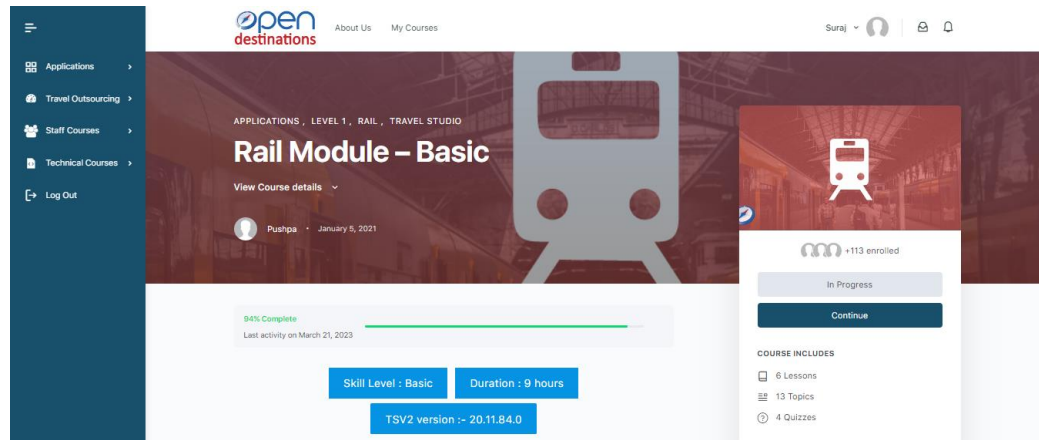
Once got then by commenting others run the test case and check the output obtained.

Here if the output obtained is Test cases as passed then change the status in TestRail from failed to Pass. And if failed, start maintaining it, Error in the script can be obtained from console log, result of running suit and also ATU reports as they will be having the screenshots of the test performed.

IX. Training for Rail Module

20th March 2023 – 24th March 2023

Here Interns started with the Rail module course that is available on open destinations training center website. Login with the credentials provided by the concerned authorities.



Objective was to understand the rail module completely and furthermore this module can be assured in the hands of interns to worked upon.

Goals Achieved:

- Handling of Rail business in Travel Studio,
- Ability to manage Trains, Routes, Seat Assignment, Bookings, Ticket issuance and generation of reports in Rail Manager.

Rail Manager has various functionality regarding booking as noted for that proper booking there are various things have to be considered such as availability of train, then if train available does it have seats, then there are departures if that train had legs and cars. When talked about availability it can be in terms of seats, date, allocations, etc.

TOOLS & TECHNOLOGIES USED:



Java

Java is a general-purpose programming language that is class-based, object-oriented, and designed to have as few implementation dependencies as possible. It is intended to let application developers “write once, run anywhere” (WORA). The compiled Java code can run on all platforms that support Java without the need for recompilation



Maven

Maven is a build automation tool used primarily for Java projects. Maven can also be used to build and manage projects written in C#, Ruby, Scala and other languages. The Maven project is hosted by the Apache Software Foundation, where it was formerly part of the Jakarta Project. Maven addresses two aspects of building software: how software is built and its dependencies.



TestNG

TestNG is a testing framework for the Java programming language inspired by Junit and NUnit. The design goal of testing is to cover a wider range of test categories: unit, functional, end-to-end, integration, etc., with more powerful and easy-to-use functionalities. TestNG is supported, out-of-the-box or via plug-ins, by each of the three major Java IDE's – Eclipse, IntelliJ IDEA and NetBeans.



Selenium WebDriver

Selenium Web driver is a collection of open-source API's which are used to automate the testing of a web application. It is a tool used to automate web application testing to verify that it works as expected. It supports many browsers such as Firefox, Chrome, IE and Safari.



Eclipse

Eclipse is an integrated development environment (IDE) used in computer programming. It contains a base workspace and an extensible plug-in system for customizing the environment. Eclipse is written mostly in Java and its primary use is for developing Java applications, but it may also be used to develop applications in other programming languages via plug-ins.



TortoiseSVN

TortoiseSVN is a really easy to use Revision control / version control / source control software for Windows. It is based on Apache™ Subversion (SVN®); TortoiseSVN provides a nice and easy user interface for Subversion. It is developed under the GPL. Which means it is completely free for anyone to use, including in a commercial environment, without any restriction. The source code is also freely available, so you can even develop your own version if you wish to. Since it's not an integration for a *specific* IDE like Visual Studio, Eclipse or others, you can use it with whatever development tools you like, and with any type of file.



Microsoft SQL Server Management Studio 18

Microsoft SQL Server Management Studio (SSMS) is an integrated environment to manage a SQL Server infrastructure. It provides a user interface and a group of tools with rich script editors that interact with SQL Server. It supports most of SQL Server's administrative tasks and maintains a single, integrated environment for SQL Server Database Engine management and authoring.



SonarQube

SonarQube is a self-managed, automatic code review tool that systematically helps you deliver clean code. As a core element of our Sonar Solution, SonarQube integrates into your existing workflow and detects issues in your code to help you perform continuous code inspections of your projects.

INTERNSHIP TIMELINE

January 2023	
9 th January	Formal Orientation Process
10 th January – 23 rd January	Product Training
24 th January	SVN demo
25 th January - 3 rd February	Learning and presentation of Manual Testing
February 2023	
6 th February – 17 th February	Java Basics and Java coding
20 th February – 24 th February	Selenium (Installation & Training)
27 th February – 02 nd March	TestNG (Installation & Training)
March 2023	
6 th March – 10 th March	Regression maintenance on Demo Build (SmokeSun)
13 th March – 17 th March	Regression maintenance on Longitude Build
20 th March – 24 th March	Training maintenance on Rail Studio
27 th March – 31 st March	Regression maintenance on Camino Build
April 2023	
3 rd April – 7 th April	Regression maintenance on Camino Build
10 th April – 14 th April	Regression maintenance on Sunstone Build
17 th April – 21 st April	Regression maintenance on Longitude Build
24 th April – 28 th April	Regression maintenance on Sunstone Build
May 2023	
2 nd May – 5 th May	Regression maintenance on Camino Build
8 th May – 12 th may	Regression maintenance on Arequipa Build
15 th May – 19 th May	Regression maintenance on Longitude Build
22 nd May – 26 th May	Regression maintenance on Arequipa Build
29 th May – 2 nd June	Regression maintenance on Longitude Build

OVERALL EXPERIENCE AT OPEN DESTINATIONS

My Internship at Open Destinations has been a wonderful and growing experience that has taught me a lot.

The training provided be it is of the product or testing based, everything was clear, detailed and thorough. The trainers are really very helpful and were always there to clear our doubts. Every person in the team is approachable and are very good guides. The knowledge they shared with us was to the point regarding the product. These are the reasons which made me feel comfortable working at Open Destinations.

Hence, I can really say the work environment at Open Destinations is friendly. I got to experience how the industry actually functions and how the testing, maintenance happens in real life.

Regarding work experience, I have never worked as Quality Assurance employee, now after this internship I feel the difference in my knowledge as compared to the testing as well as practical knowledge I used to possess before. My Skills and knowledge have grown very well to become a full-time test consultant.

Overall, my internship experience has been an extremely enriching. I am thankful for this opportunity to gain valuable working experience.

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- <https://www.sonarsource.com/products/sonarqube/>
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- <https://www.opendestinations.com/>