

LAB REPORT

Submitted by

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Under the Guidance of

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In partial satisfaction of the requirements for the degree of

**BACHELOR OF TECHNOLOGY
in
COMPUTER SCIENCE ENGINEERING**

with specialization in Cyber security.



**SCHOOL OF COMPUTING
COLLEGE OF ENGINEERING AND TECHNOLOGY
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
KATTANKULATHUR - 603203**

JUNE 2022



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INSTITUTE OF SCIENCE & TECHNOLOGY
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SRM INSTITUTION OF SCIENCE AND TECHNOLOGY KATTANKULATHUR-603203

BONAFIDE CERTIFICATE

Certified that this lab report titled "**Aerolinea**" is the bonafide work done by SAKSHAM (RA2011030010074) who carried out the lab exercises under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other work.

SIGNATURE

Ms. Mahalakshmi P
SEPM – Course Faculty
Assistant professor
Department of NWC

ABSTRACT

The flight schedule is the central element of an airline's planning process, aimed at optimizing the deployment of the airline's resources in order to meet demands and maximize profits. In this paper, we present an overview of contributions to airline scheduling made by operations research professionals during the past 20 years or so. The overview follows the development of airline scheduling methodology from an early emphasis on standard quantitative optimization techniques to the recent trends towards a structured planning process in which all parts of the airline participate in the "construction" and "evaluation" of schedules, combining exact mathematical programming algorithms and heuristics.

In a commercial airline the flight schedule is a central element of the planning process. It defines not only the product but to a large extent also the production plan. Given a flight schedule, a significant portion of costs and revenues are fixed. Optimization of the flight schedule, therefore, is central to finding the most efficient and effective deployment of an airline's resources. By implication—if the market and regulatory mechanism works properly—it is also critical for obtaining an air transportation system which satisfies public objectives.

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LIST OF ABBREVIATIONS

UML- Unified Modelling Language

WBS-Work Breakdown Structure

UI-User Interface

SWOT-Strength Weakness Opportunities Threats

ER-Entity Relationship

DFD-Data Flow Diagram

GANTT-Generalized activity Normalization Time table

SSL -secure secret locker

Py-python script



DEPT. Of NWC

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	1
Title of Experiment	To identify the Software Project, Create Business Case, Arrive at a Problem Statement
Name of the candidate	SAKSHAM
Team Members	Ishaan Markanday, Veerendra Nadh Matsa
Register Number	RA2011030010074
Date of Experiment	07/03/2022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To Frame a project team, analyze and identify a Software project. To create a business case and Arrive at a Problem Statement for the <title of the project>

Team Members:

Sl No	Register No	Name	Role
1	RA2011030010082	Ishaan Markanday	Lead
2	RA2011030010081	Veerendra Nadh Matsa	Member
3	RA2011030010074	SAKSHAM	Member

Project Title:

AEROLINEA (Flight Management System)

Project Description

Business Case

<Incorporate the Business Case template>

Result

Thus, the project team formed, the project is described, the business case was prepared and the problem statement was arrived.

ONE PAGE BUSINESS CASE TEMPLATE

DATE	14/03/2022
SUBMITTED BY	Ishaan Markanday, Veerendra Nadh Matsa, Saksham
TITLE / ROLE	AEROLÍNEA (Flight Management System)



AEROLÍNEA

THE PROJECT

In bullet points, describe the problem this project aims to solve or the opportunity it aims to develop.

- This project helps the airport authorities to keep a track record of flights, adding or upgrading flights and updates on flight details whether the flight is delayed or scheduled.

THE HISTORY

In bullet points, describe the current situation.

- For time being the program is under early stage
- learning python tkinter to make the project

LIMITATIONS

List what could prevent the success of the project, such as the need for expensive equipment, bad weather, lack of special training, etc.

only admin has all the powers to do changes in it and it has very basic ui

APPROACH

List what is needed to complete the project.

- Python
- Tkinter

BENEFITS

In bullet points, list the benefits that this project will bring to the organization.

- It helps the airport authorities to keep records of flight and updates the flight details.



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SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	2
Title of Experiment	<i>Identification of Project Methodology and Stakeholder Description template</i>
Name of the candidate	SAKSHAM
Team Members	Ishaan Markanday, Veerendra Nadh Matsa
Register Number	RA2011030010074
Date of Experiment	

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To identify the appropriate Process Model for the project and prepare Stakeholder and User Description.

Team Members:

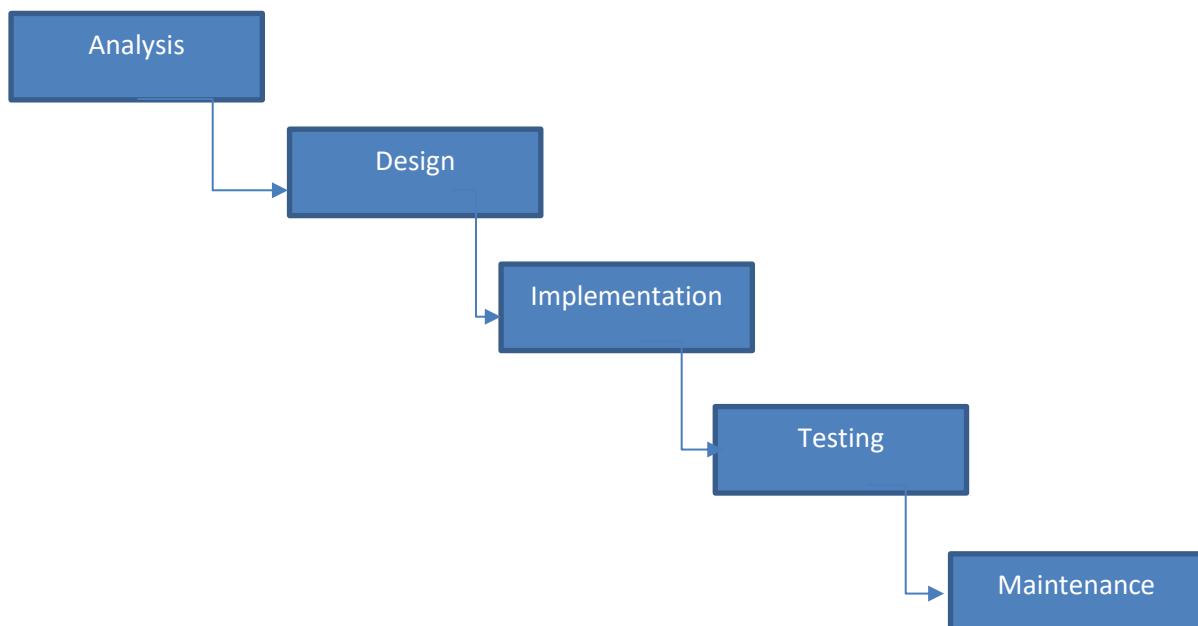
Sl No	Register No	Name	Role
1	RA2011030010082	Ishaan markanday	Rep/Member
2	RA2011030010074	Saksham	Member
3	RA2011030010081	Veerendra nadh matsa	Member

Project Title: Aerolinea(Flight management system)

Selection of Methodology

Waterfall is the most conventional software development methodology.

In fact, it has been one of the most popular approaches for web development projects for several decades due to its plan-driven approach. The Waterfall approach requires a lot of structure and documentation. The process is divided into several stages that form a sequence: The first stage is critical and requires a complete understanding of the project's demands and scope by both the developers and the product owners. Waterfall will require a full restart. As a result, projects managed under the Waterfall method might require much more time. On the other hand, it is great for ensuring that all deliverables meet expectations and it allows for easily measuring the progress since you see the full scope of the project in advance.



Incorporate ***Identification of Project Methodology and Stakeholder Description template***

Stakeholder Name	Activity/ Area /Phase	Interest	Influence	Priority (High/ Medium/ Low)
Owner/admin	Modifying the schedules.	High	High	1
supervisor	Monitors the work	High	High	2
Investor	Provides financial resources	High	Low	2
User	Check the availability and provide feedback	Low	Low	3

Result

Thus the Project Methodology was identified stakeholders were described.



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SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	3
Title of Experiment	System, Functional and Non-Functional Requirements of the Project
Name of the candidate	SAKSHAM
Team Members	Ishaan Markanday, Veerendra Matsa Nadh
Register Number	RA2011030010074
Date of Experiment	23/02/2022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To identify the system, functional and non-functional requirements for the project.

Team Members:

S No	Register No	Name	Role
1	RA2011030010082	Ishaan Markanday	Rep/Member
2	RA2011030010081	Veerendra Matsa Nadh	Member
3	RA2011030010074	Saksham	Member

Project Title: < >

Aerolinea

System Requirements

- Processor- Minimum Pentium IV
- Harddisk- Minimum 100GB
- RAM- Minimum 2 GB

Functional Requirements

- Administrative Functions- Permissions
- System Shut down at the time of cyber attack
- Getting input from the admin and supervisor
- Authentication-Verification email is sent to user whenever he/she registers and verifies at the time of login

Non-Functional Requirements

- Security
- Reliability
- Availability

- Mantainability
- Supportability

Result

Thus the requirements were identified and accordingly described.



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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	4
Title of Experiment	Prepare Project Plan based on scope, Calculate Project effort based on resources and Job roles and responsibilities
Name of the candidate	SAKSHAM
Team Members	Ishaan Markanday, Veerendra Matsa Nadh
Register Number	RA2011030010074
Date of Experiment	22-03-2022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To Prepare Project Plan based on scope, Calculate Project effort based on resources, Find Job roles and responsibilities

Team Members:

Sl No	Register No	Name	Role
1	RA2011030010082	Ishaan markanday	Lead
2	RA2011030010081	Veerendra nadh matsa	Member
3	RA2011030010074	Saksham	Member

Requirements:

1. Project Management Plan

Describe the key issues driving the project. [Min 3 Focus Areas]

Focus Area	Details
Schedule Management	Define Milestones Schedule Control
Cost Management	Estimate Effort Assign Team Budget Control
Quality Management	Quality Assurance: Quality assurance will be managed including governance, roles and responsibilities, tools and techniques and reporting Quality Control: Specify the mechanisms to be used to measure and control the quality of the work products
Resource Management	Estimate and manage the need People: People & Skills Required Finance: Budget Required Physical: Facilities, IT Infrastructure
Stakeholder	Identifying, Analyzing, Engaging Stakeholders

Communication Management	Determine communication requirements, roles and responsibilities, tools and techniques. [Type of Communication, Schedule, Mechanism Recipient]
Risk Management	Identifying, analyzing, and prioritizing project risks

2. Estimation

2.1. Effort and Cost Estimation

Activity Description	Sub-Task	Sub-Task Description	Effort (in hours)	Cost in INR
Design the user screen	E1R1A1T1 (Effort-RequirementActivity-Task)	Confirm the user requirements (acceptance criteria)	6	2500
	E1R1A1T2	Distribution of designing work to the team	2	1000
	E1R1A1T3	Designing the User Interface	48	24000
Identify Data Source for displaying units of Energy Consumption		Go through Interface contract (Application Data Exchange) documents	5	2500
		Document	2	1000

Effort (hr)	Cost (INR)
1	500

2.2. Infrastructure/Resource Cost [CapEx]

< OneTime Infra requirements >

Infrastructure Requirement	Qty	Cost per qty	Cost per item
IR1	PC's	3	50,000
IR2	Wifi	1	3000
IR3	Furniture	3	5000
IR4	Hosting Server	1	6000

2.3. Maintenance and Support Cost [OpEx]

Category	Details	Qty	Cost per qty per annum	Cost per item
People	Network, System, Middleware and DB admin Developer, Support Consultant	3	2,000,000	6,000,000
License	Operating System Database Middleware IDE	10	10000	100,000
Infrastructures	Server, Storage and Network	15	20000	400,000

3. Project Team Formation

3.1 Identification Team members

Name	Role	Responsibilities
Ishaan	Key Business User (Product Owner)	Provide clear business and user requirements
Saksham	Project Manager	Manage the project
veerendra	Business Analyst	Discuss and Document Requirements
Saksham	Technical Lead	Design the end-to-end architecture
ishaan	UX Designer	Design the user experience
veerendra ,Saksham	Frontend Developer	Develop user interface
ishaan	Backend Developer	Design, Develop and Unit Test Services/API/DB
Saksham	Cloud Architect	Design the cost effective, highly available and scalable architecture
Ishaan	Cloud Operations	Provision required Services
veerendra	Tester	Define Test Cases and Perform Testing

3.2 Responsibility Assignment Matrix

RACI Matrix		Team Members			
Activity		Name (BA)	Name (Developer)	Name (Project Manager)	Key Business User
User Requirement Documentation	A	C/I	I	R	
	Veerendra	Saksham	ishaan	ishaan	

A	Accountable
R	Responsible
C	Consult
I	Inform

Result:

Thus, the Project Plan was documented successfully.



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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	5
Title of Experiment	Prepare Work breakdown structure, Timeline chart, Risk identification table
Name of the candidate	SAKSHAM
Team Members	Ishaan Markanday, Veerendra Nadh Matsa
Register Number	RA2011030010074
Date of Experiment	25/03/22

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

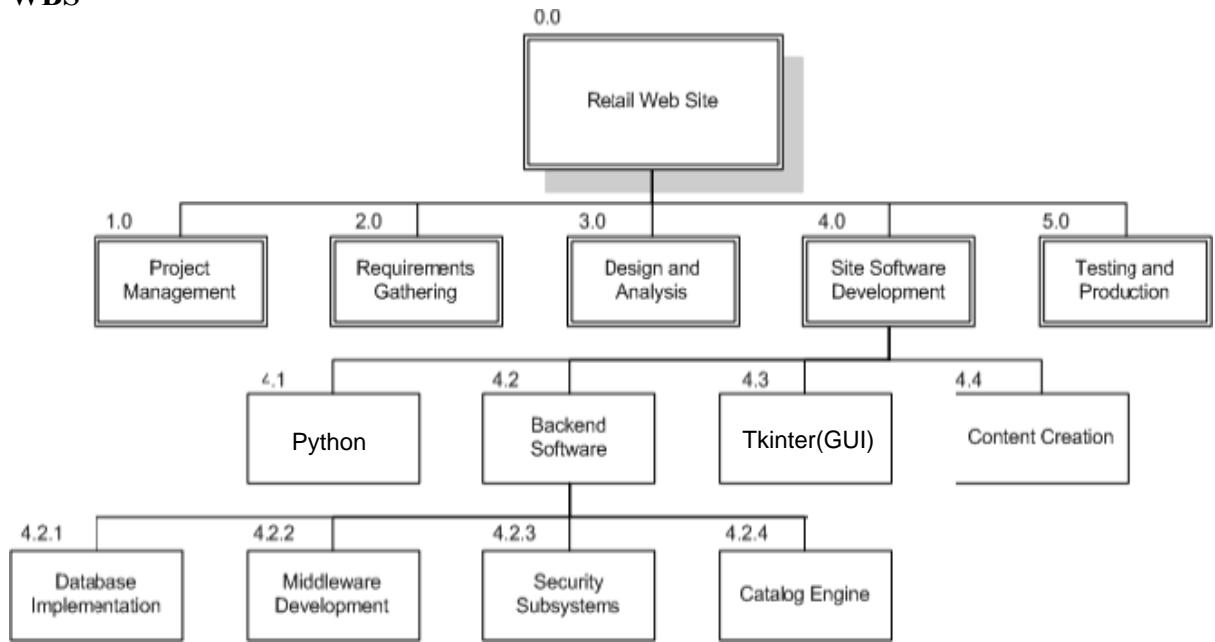
Aim

To Prepare Work breakdown structure, Timeline chart and Risk identification table

Team Members:

Sl No	Register No	Name	Role
1	Ra2011030010082	Ishaan Markanday	Rep
2	Ra2011030010081	Veerendra Nadh Matsa	Member
3	Ra2011030010074	Saksham	Member

WBS –

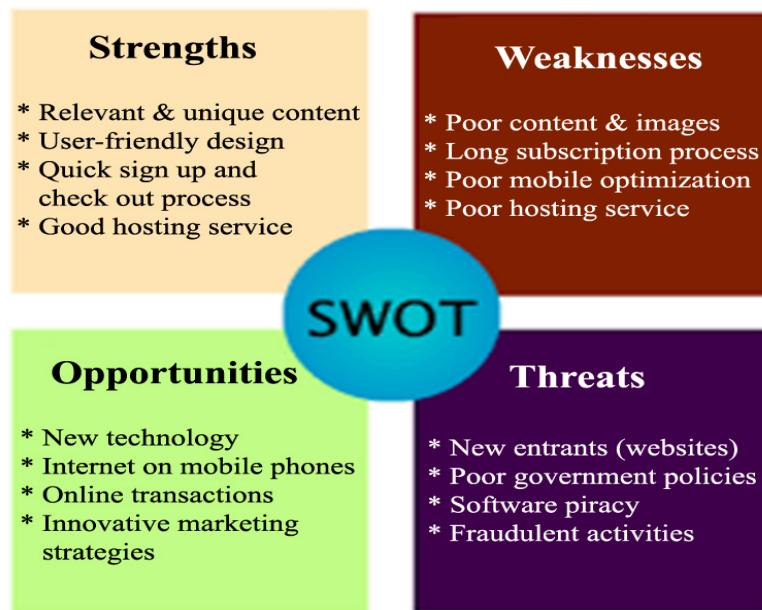


- ▶ 0.0 Retail Web Site
- ▶ 1.0 Project Management
- ▶ 2.0 Requirements Gathering
- ▶ 3.0 Analysis & Design
- ▶ 4.0 Site Software Development
 - 4.1 PYTHON
 - 4.2 Backend Software
 - 4.2.1 Database Implementation
 - 4.2.2 Middleware Development
 - 4.2.3 Security Subsystems
 - 4.2.4 Catalog Engine
 -
 - 4.3 Graphics and Interface (Tkinter)
 - 4.4 Content Creation
- ▶ 5.0 Testing and Production

TIMELINE – GANTT CHART



RISK ANALYSIS – SWOT & RMMM



RISK MANAGEMENT FRAMEWORK

Response	Strategy	Examples
Avoid	Risk avoidance is a strategy where the project team takes action to remove the threat of the risk or protect from the impact.	<ul style="list-style-type: none"> Extending the schedule Reducing/ removing Scope Changing the strategy of executing algorithms
Transfer	Risk transference involves shifting or transferring the risk threat and impact to a third party. Rather transfer the responsibility and ownership.	<ul style="list-style-type: none"> Performance bonds Warranties Contract issuance (Lump Sum)
Mitigate	Risk mitigation is a strategy where the project team takes an action to reduce the probability of the risk occurring. This does not risk or potential impact, but rather the likelihood of it becoming real.	<ul style="list-style-type: none"> Increasing testing Hosting for different browsing platforms to get stability Reducing process complexity
Accept	Risk acceptance means the team acknowledges the risk and its potential impact, but decides not to take any preemptive action to prevent it. It is dealt with only if it occurs.	<ul style="list-style-type: none"> Improved User Interface Management schedule float Event Contingency

Result:-

Thus, the work breakdown structure with timeline chart and risk table were formulated successfully.



Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	6
Title of Experiment	Design a System Architecture, Use Case and Class Diagram
Name of the candidate	SAKSHAM
Team Members	Verendra Matsa Nadh, Ishaan Markanday
Register Number	RA2011030010074
Date of Experiment	14/04/22

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To Design a System Architecture, Use case and Class Diagram

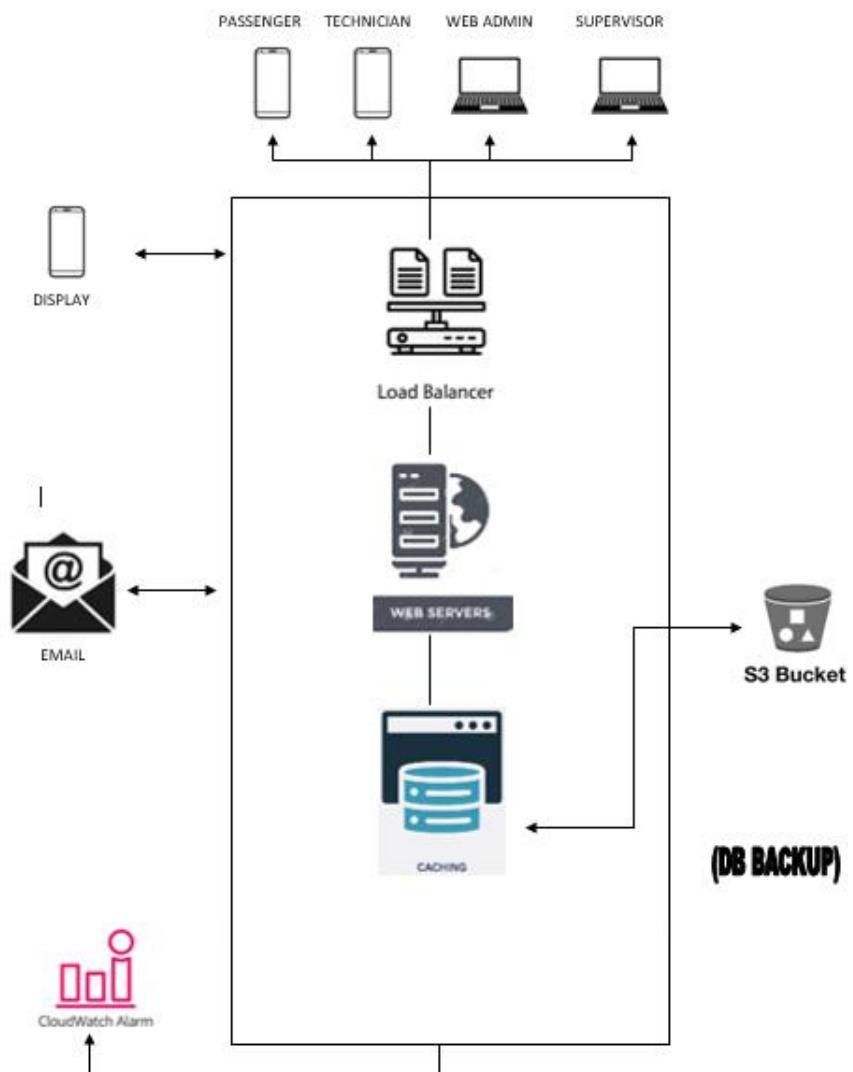
Team Members:

Sl No	Register No	Name	Role
1	RA2011030010082	Ishaan Markanday	Rep
2	RA2011030010081	Veerendra Matsa Nadh	Member
3	RA2011030010074	Saksham	Member

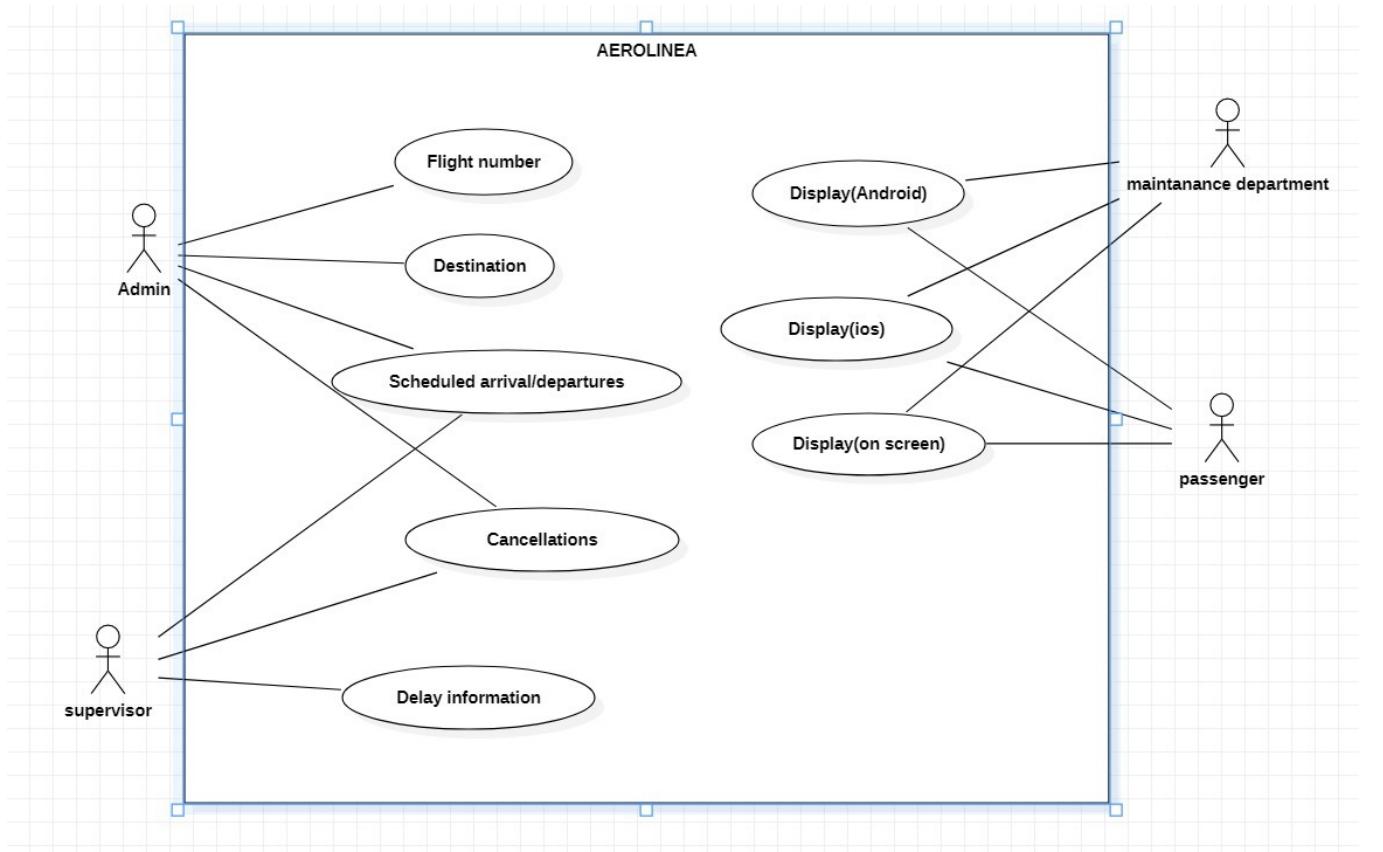
Title-:

AEROLINEA

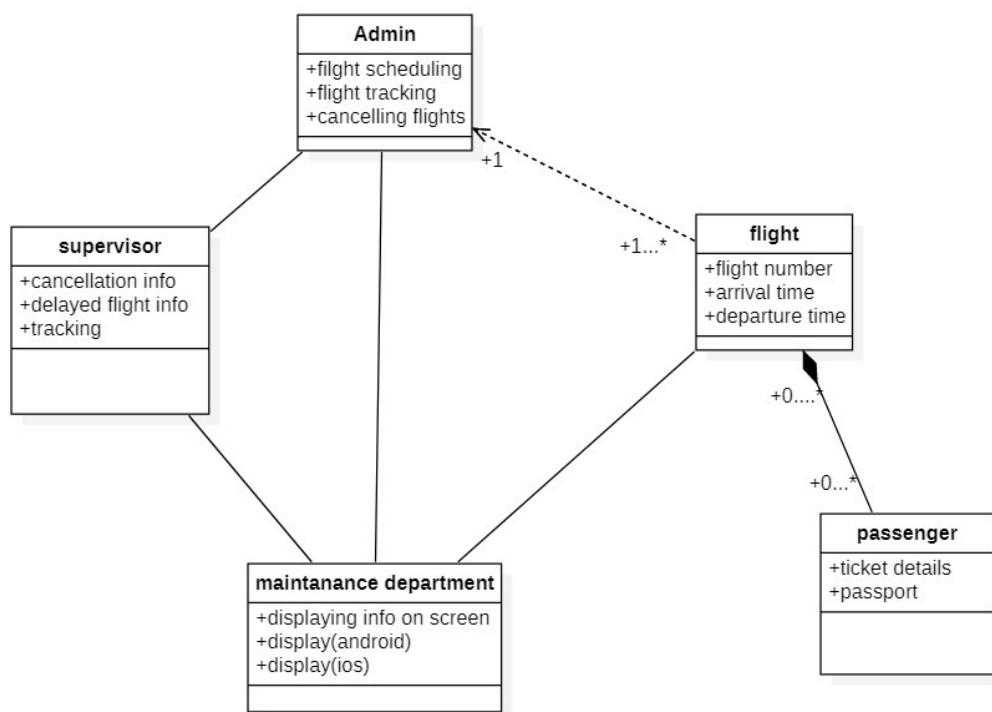
SYSTEM ARCHITECTURE –



USE CASE DIAGRAM –



CLASS DIAGRAM –



Result:

Thus, the system architecture, use case and class diagram created successfully.



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SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	7
Title of Experiment	Design a Entity relationship diagram
Name of the candidate	SAKSHAM
Team Members	VEERENDRA NADH MATSA,ISHAAN MARKANDAY
Register Number	RA2011030010074
Date of Experiment	27/04/22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

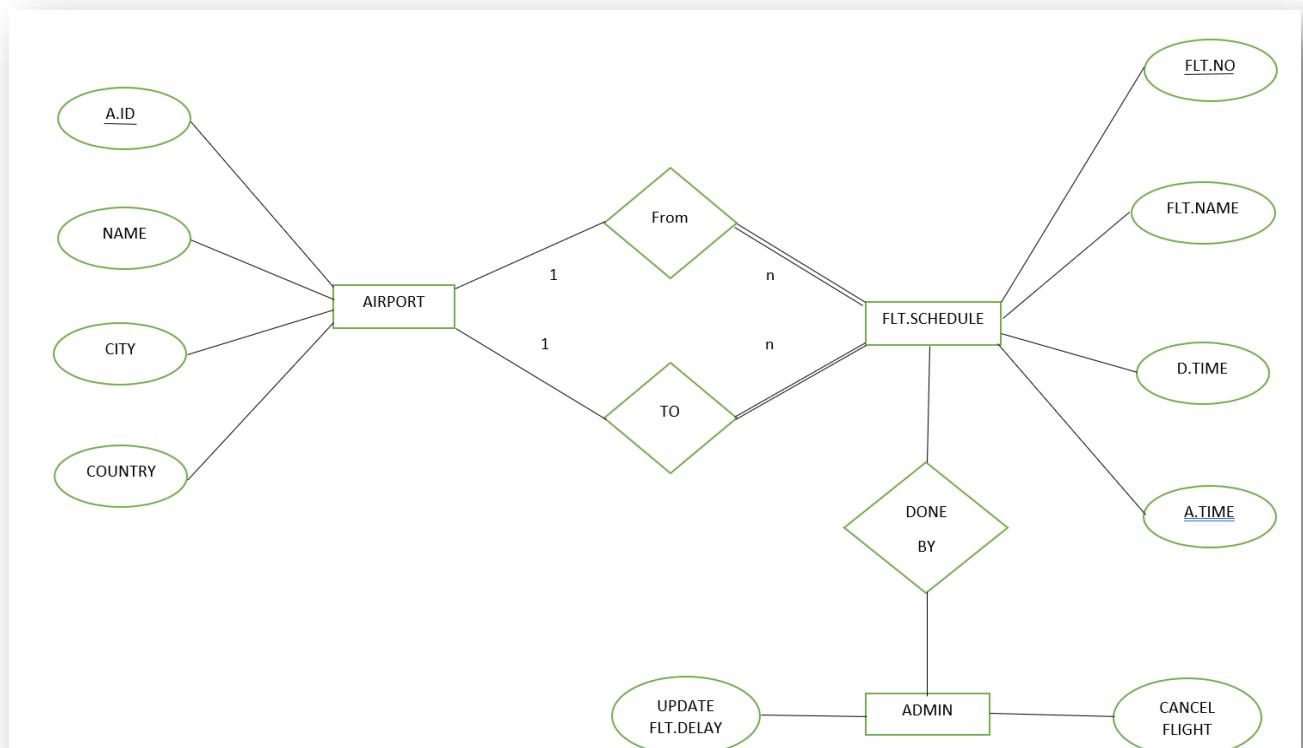
Aim

To create the Entity Relationship Diagram

Team Members:

S No	Register No	Name	Role
1	RA2011030010082	ISHAAN MARKANDAY	Rep
2	RA2011030010081	VEERENDRA NADH MATSA	Member
3	RA2011030010074	SAKSHAM	Member

ER DIAGRAM



Result:

Thus, the entity relationship diagram was created successfully.



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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	8
Title of Experiment	Develop a Data Flow Diagram (Process-Up to Level 1)
Name of the candidate	SAKSHAM
Team Members	Ishaan, Veerendra Matsa nadh
Register Number	RA2011030010074
Date of Experiment	

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To develop the data flow diagram up to level 1 for the <project name>

Team Members:

S No	Register No	Name	Role
1	RA2011030010082	Ishaan MArkanday	Rep
2	RA2011030010081	Veerendra Nadh Matsa	Member
3	RA2011030010074	Saksham	Member

Data Flow Diagram

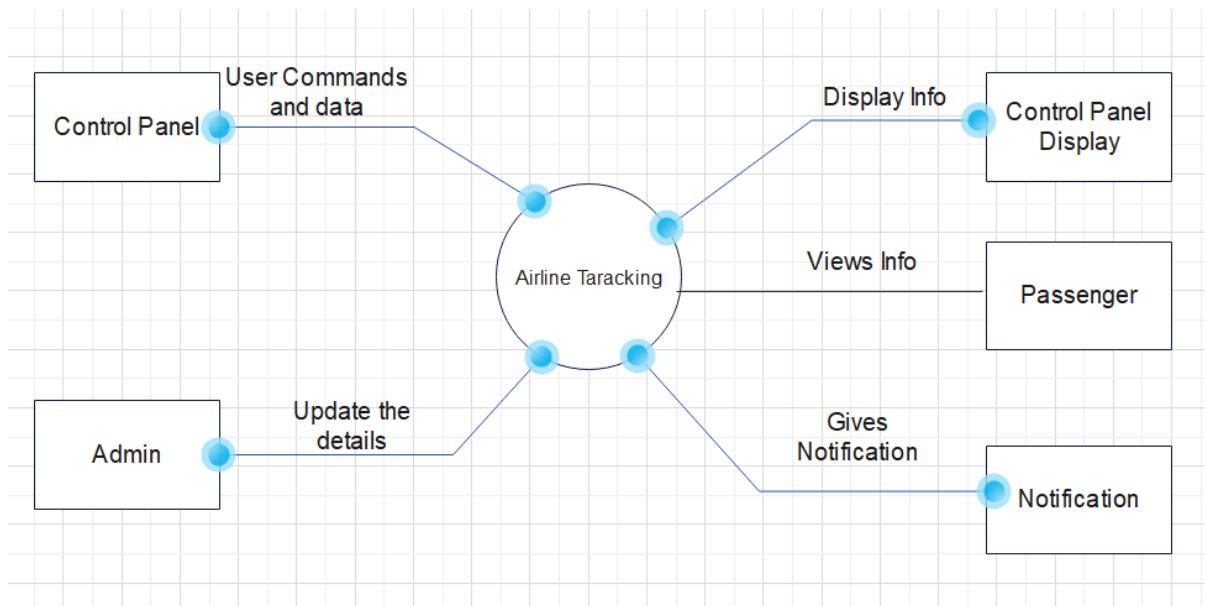
The DFD takes an input-process-output view of a system. That is, data objects flow into the software, are transformed by processing elements, and resultant data objects flow out of the software. Data objects are represented by labeled arrows, and transformations are represented by circles (also called bubbles). The DFD is presented in a hierarchical fashion. That is, the first data flow model (sometimes called a level 0 DFD or context diagram) represents the system as a whole. Subsequent data flow diagrams refine the context diagram, providing increasing detail with each subsequent level.

The data flow diagram enables you to develop models of the information domain and functional domain. As the DFD is refined into greater levels of detail, you perform an implicit functional decomposition of the system. At the same time, the DFD refinement results in a corresponding refinement of data as it moves through the processes that embody the application.

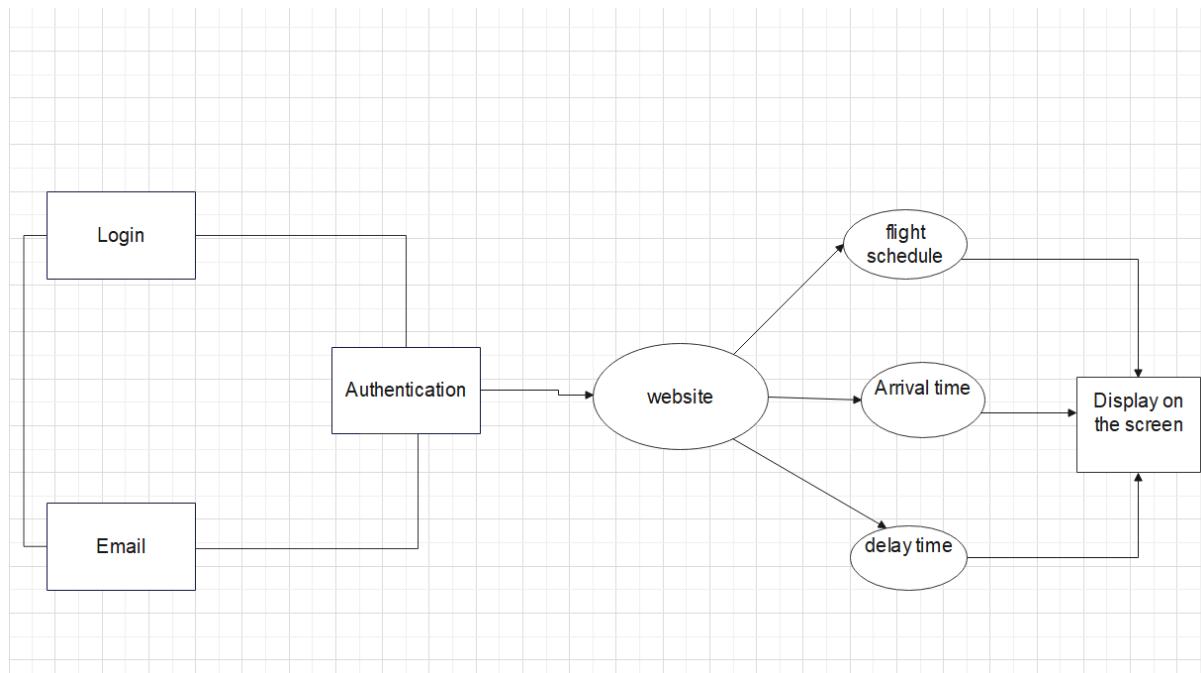
A few simple guidelines can aid immeasurably during the derivation of a data flow diagram:

- (1) Level 0 data flow diagram should depict the software/system as a single bubble;
- (2) Primary input and output should be carefully noted;
- (3) Refinement should begin by isolating candidate processes, data objects, and data stores to be represented at the next level;
- (4) All arrows and bubbles should be labeled with meaningful names;
- (5) Information flow continuity must be maintained from level to level and
- (6) One bubble at a time should be refined. There is a natural tendency to overcomplicate the data flow diagram. This occurs when you attempt to show too much detail too early or represent procedural aspects of the software in lieu of information flow.

DFD Level 0



DFD Level 1



Result:

Thus, the data flow diagrams have been created for the aerolinea.



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SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	9
Title of Experiment	Design a Sequence and Collaboration Diagram
Name of the candidate	SAKSHAM
Team Members	Ishaan, Veerendra Matsa
Register Number	RA2011030010074
Date of Experiment	

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

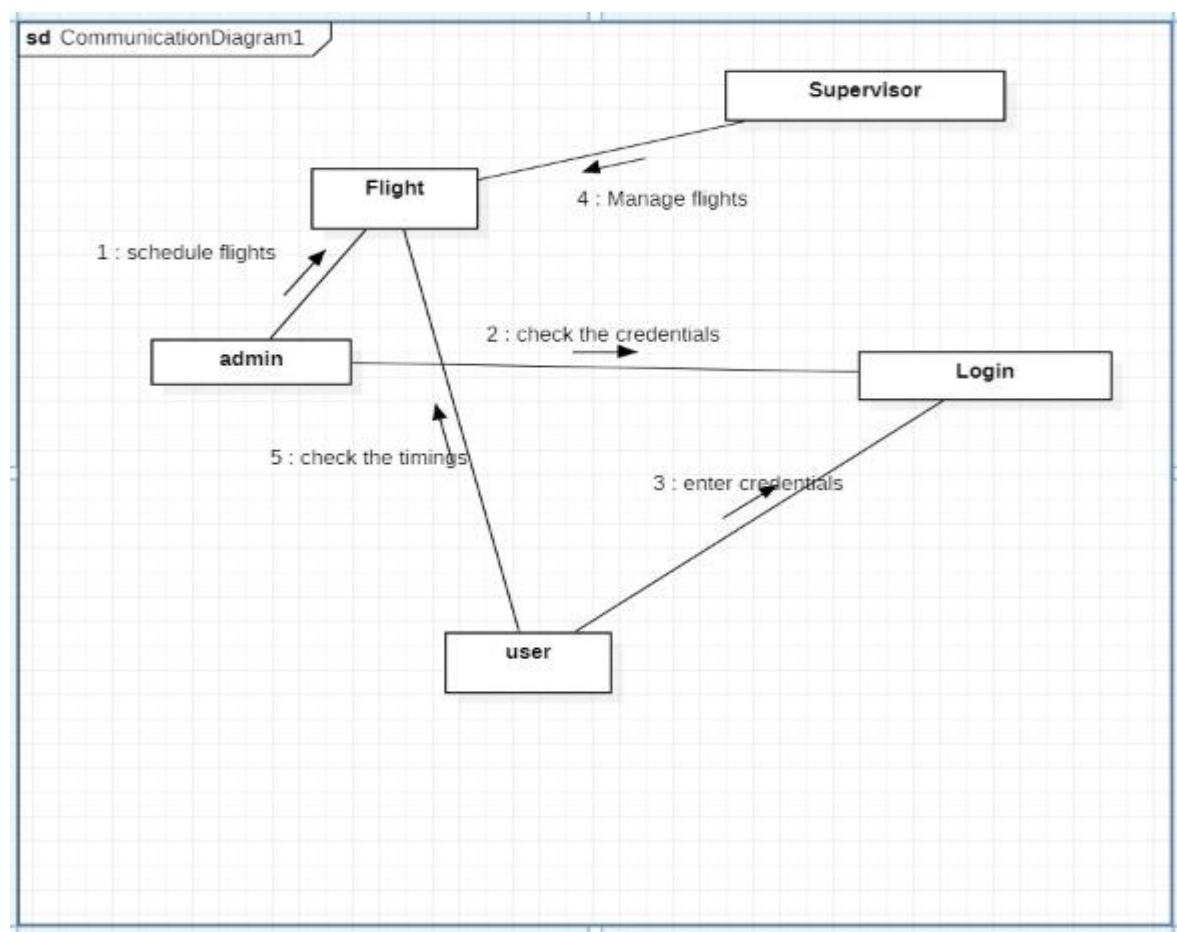
Aim

To create the sequence and collaboration diagram for the <project name>

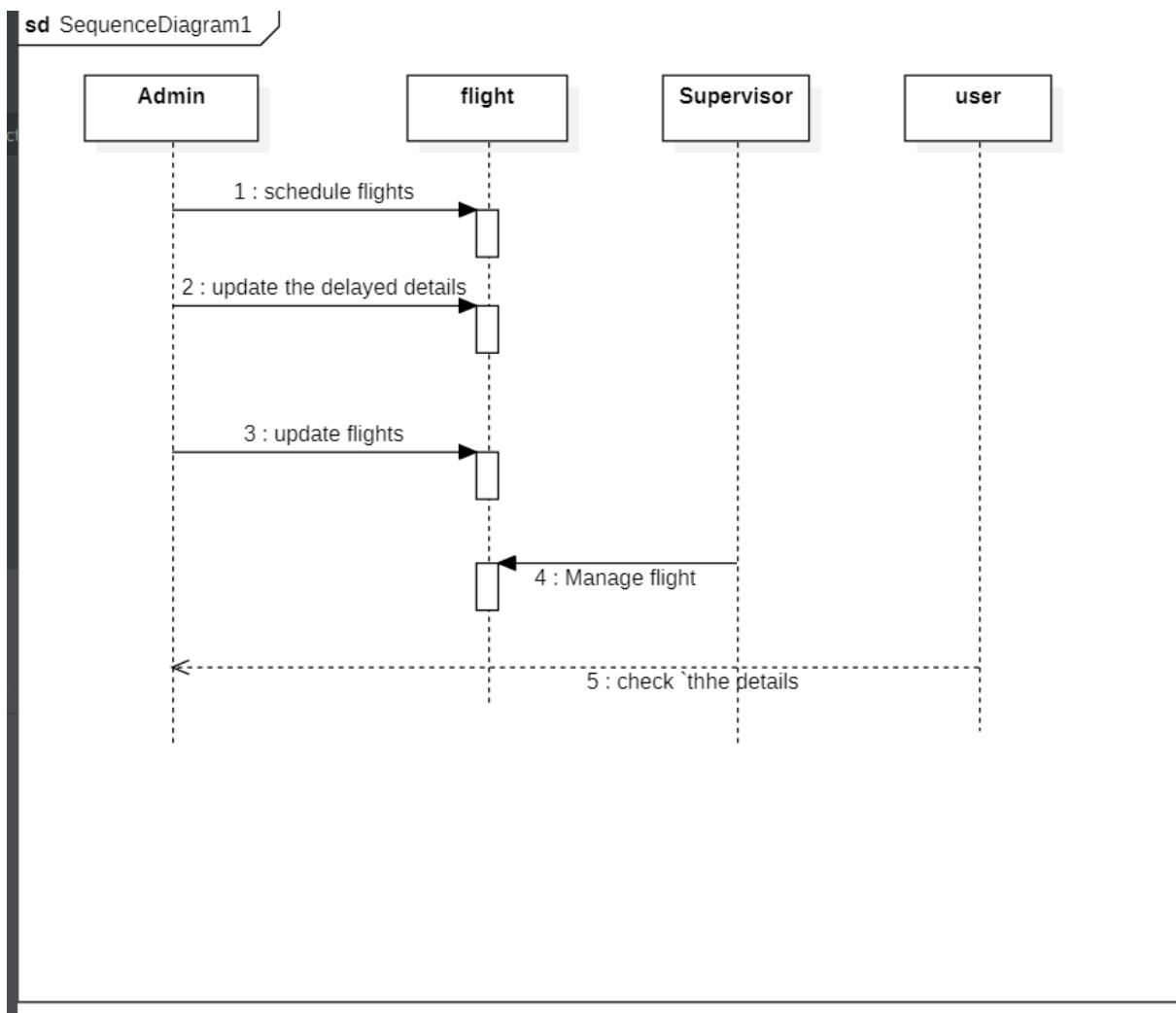
Team Members:

S No	Register No	Name	Role
1	RA2011030010082	Ishaan Markanday	Rep/Member
2	RA2011030010081	Veerendra nadh Matsa	Member
3	RA2011030010074	Saksham	Member

Sequence Diagram:



Collaboration diagram:

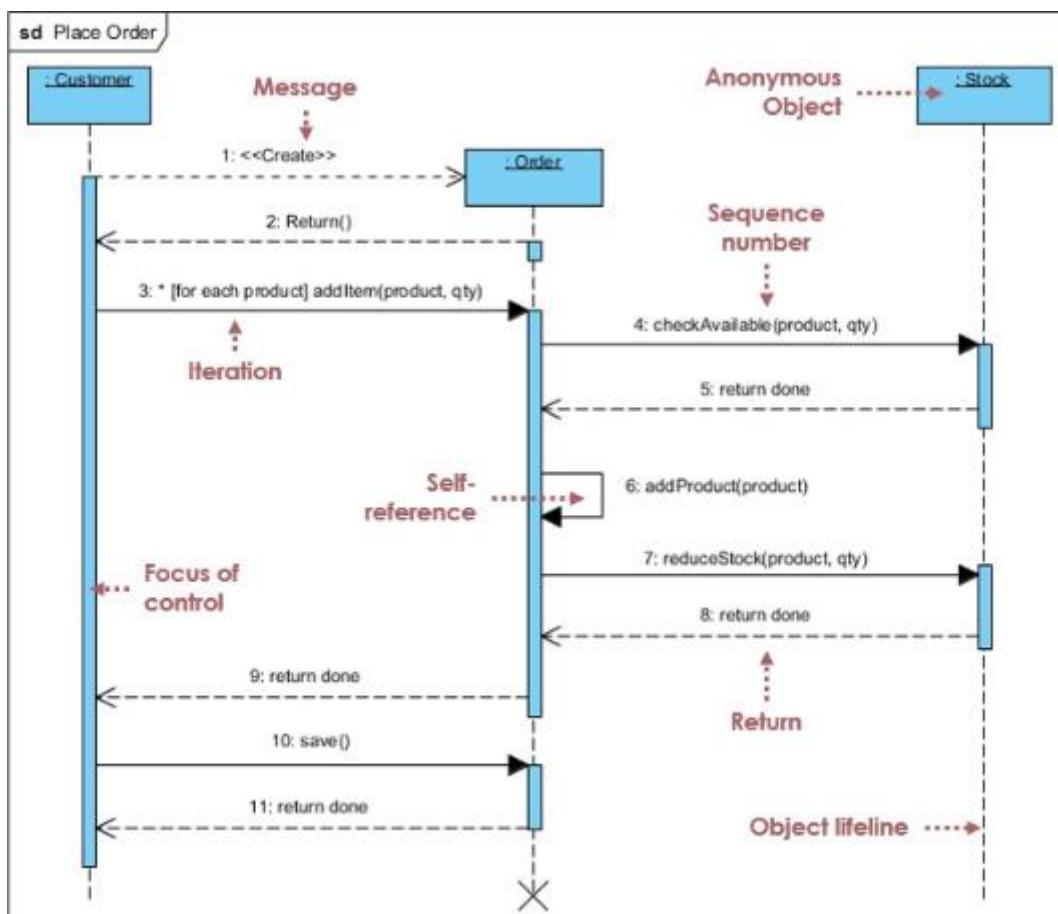


Result:

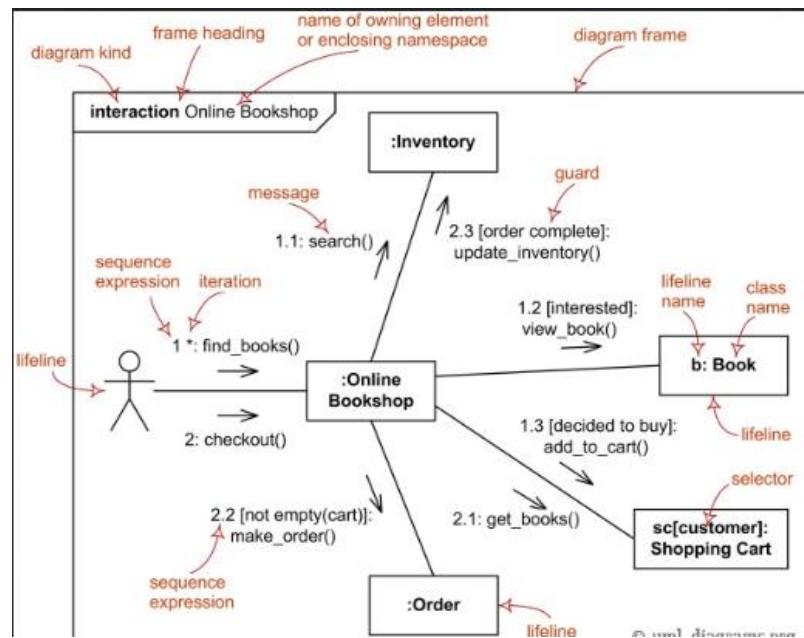
Thus, the sequence and collaboration diagrams were created for the Aerolinea.

*/ For Example

Sequence Diagram



Collaboration Diagram





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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	10
Title of Experiment	Develop a Testing Framework/User Interface
Name of the candidate	Saksham
Team Members	Ishaan,Veerendra Matsa Nadh
Register Number	RA2011030010074
Date of Experiment	23-6-22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To develop the testing framework and/or user interface framework for the <project name>

Team Members:

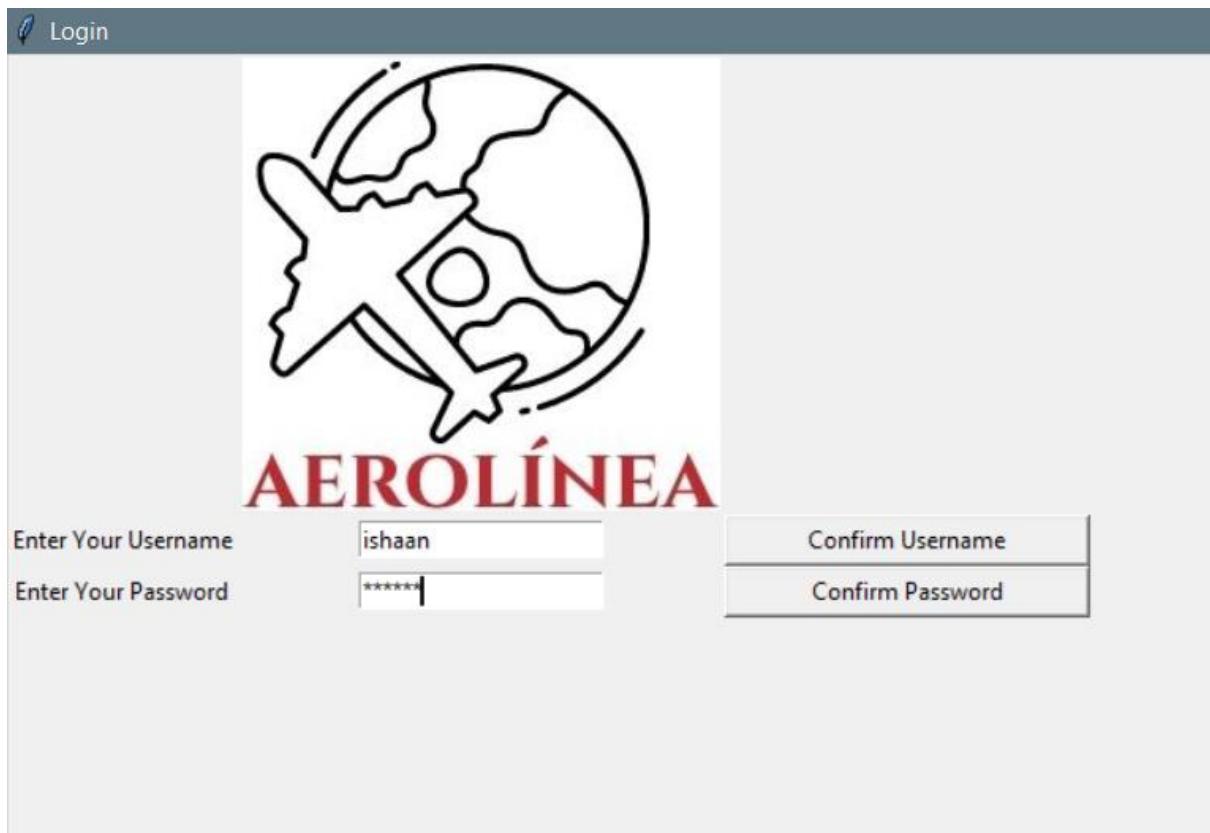
S No	Register No	Name	Role
1	RA2011030010082	Ishaan	Rep/Member
2	RA2011030010081	Veerendra nadh	Member
3	RA2011030010074	Saksham	Member

USER INTERFACE FRAMEWORK:

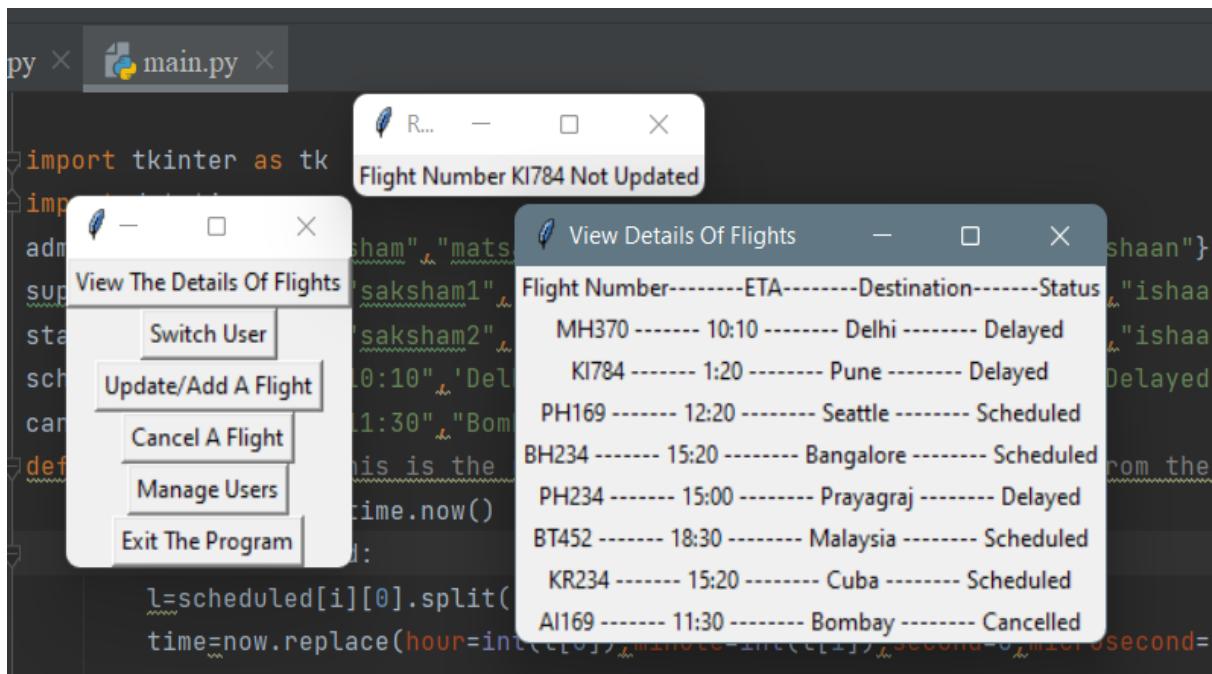
Landing page screen



Login screen



Flight schedule screen



TESTING FRAMEWORK

Functional requirements

Test area	INPUT	Testing Method	Tools
1.login module	Login username and password	Manual	-
2.Responsiveness	UI/UX	Automated	Maze, user testing.com

Non functional requirements

Test area	Testing methods	Tools
Usability	Automated	Userfeel
Security	Automated	SSL
Performance	Automated	Loadninja
Scalability	Manual	-

Result:

Thus, the testing framework/user interface framework has been created for the Aerolinea.



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SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	11
Title of Experiment	Test Cases
Name of the candidate	SAKSHAM
Team Members	Ishaan, Veerendra Nadh Matsa
Register Number	RA2011030010074
Date of Experiment	25/05/22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To develop the test cases manual for the Aerolinea

Team Members:

S No	Register No	Name	Role
1	RA2011030010082	Ishaan markanday	Rep
2	RA2011030010074	Saksham	Member
3	RA2011030010081	Veerendra nadh Matsa	Member

Test Case

Functional Test Cases

Test ID	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
1	Authenticate User	Accept Valid Id and Password.	1. User opens the web page 2. Enter the id and password 3. Click login	User should receive a email that they have authenticated	User should receive a email that they have authenticated	Pass	success
2	Verify the flight number	Do not enter invalid flight number	1. once the flight number is entered. 2. flight timings will be displayed	Flight details Will be displayed, i.e, flight be on time or not.	Flight details Will be displayed, i.e, flight be on time or not.	Pass	Success

Non-Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
1.	Performance Testing	Test if the page is opened within 30s of login.	1.Enter the details. 2.check the speed of login action.	To open the page within 30s.	10s	Pass	Success
2.	User accessibility	Ease of using the website	1.login into the site. 2.check the speed of action	User should be able to access the website without page errors.	User should be able to access the website without page errors.	Pass	Success

Result:

Thus, the test case manual has been created for the Aerolinea.



School of Computing Technology

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	12
Title of Experiment	Manual Test Case Reporting
Name of the candidate	Saksham
Team Members	Ishaan Markanday, Veerendra Nadh Matsa
Register Number	RA2011030010074
Date of Experiment	

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To prepare the manual test case report for the Aerolinea

Team Members:

S No	Register No	Name	Role
1	RA2011030010082	Ishaan Markanday	Rep/Member
2	RA2011030010081	Veerendra Nadh Matsa	Member
3	RA2011030010074	Saksham	Member

Test Report

Testing was successful. Obstacles were presented to the stakeholders and were further looked into. Obstacles were removed.

Category	Progress Against Plan	Status
Functional Testing	Green	Completed
Non-Functional Testing	Green	Completed

Functional	Test Case Coverage (%)	Status
Module 1 (Home Page)	100%	Completed
Module 2 (Login/Signup)	100%	Completed
Module 3 (Searching/Editing)	100%	Completed

Result:

Thus, the test case report has been created.



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	13
Title of Experiment	Provide the details of Architecture Design/Framework/Implementation
Name of the candidate	SAKSHAM
Team Members	Ishaan, Veerendra Nadh Matsa
Register Numbers	RA2011030010074
Date of Experiment	

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To provide the details of architectural design/framework/implementation

Team Members:

S No	Register No	Name	Role
1	RA2011030010082	Ishaan Markanday	Rep/Member
2	RA2011030010081	Veerendra Nadh Matsa	Member
3	RA2011030010074	Saksham	Member

Login Screen



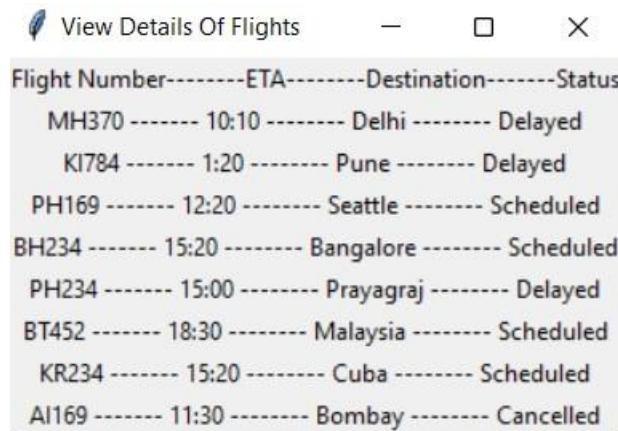
Logic for login screen

```
def login():#login function
    def userver():
        def passver():
            b=password.get()
            if check==1:
                if admin[a]==b:
                    loginsc.destroy()
                    admain()
                    reminder()
                else:
                    a3=tk.Tk()
                    a3.title("Wrong Password!")
                    tk.Label(master=a3,text="Wrong Password! Please Try Again!").grid(row=1,column=1)
            elif check==2:
                if supervis[a]==b:
                    loginsc.destroy()
                    supmain()
                    reminder()
                else:
                    a3=tk.Tk()
                    a3.title("Wrong Password!")
                    tk.Label(master=a3,text="Wrong Password! Please Try Again!").grid(row=1,column=1)
            elif check==3:
                if standard[a]==b:
                    loginsc.destroy()
                    stamain()
            else:
                a3=tk.Tk()
                a3.title("Wrong Password!")
                tk.Label(master=a3,text="Wrong Password! Please Try Again!").grid(row=1,column=1)
    a=username.get()

    if not(a in admin or a in supervis or a in standard):
        a1=tk.Tk()
        a1.title("Wrong Username!")
        tk.Label(master=a1,text="Username Not Found. Please Try Again!").grid(row=1,column=1)
    else:
        if a in supervis:
            check=2
        elif a in admin:
            check=1
        elif a in standard:
            check=3

        tk.Label(master=loginsc,text="Enter Your Password").grid(row=2,column=0)
        password=tk.Entry(master=loginsc,show='*')
        password.grid(row=2,column=1)
        a3=tk.Button(master=loginsc,text="Confirm Password",width=25,command=passver).grid(row=2,column=2)
    loginsc=tk.Tk()
    loginsc.title("Login")
    tk.Label(master=loginsc,text "").grid(row=5,column=1)
    img=tk.PhotoImage(file="aerolinea.png")
    rp=tk.Label(master=loginsc,image=img).grid(row=0,column=1)
    tk.Label(master=loginsc,text="Enter Your Username").grid(row=1,column=0)
    username=tk.Entry(master=loginsc)
    username.grid(row=1,column=1)
    a2=tk.Button(master=loginsc,text="Confirm Username",width=25,command=userver).grid(row=1,column=2)
    loginsc.mainloop()
login()
```

Viewing Flight details

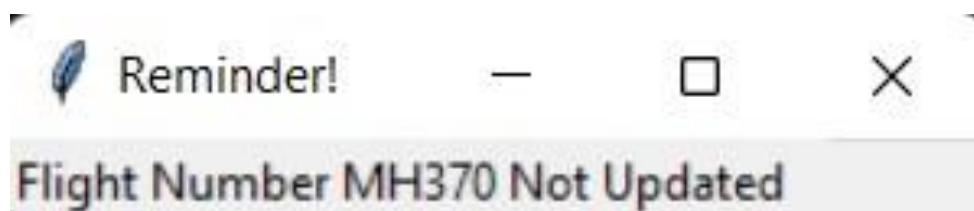


Flight Number	ETA	Destination	Status
MH370	10:10	Delhi	Delayed
KI784	1:20	Pune	Delayed
PH169	12:20	Seattle	Scheduled
BH234	15:20	Bangalore	Scheduled
PH234	15:00	Prayagraj	Delayed
BT452	18:30	Malaysia	Scheduled
KR234	15:20	Cuba	Scheduled
AI169	11:30	Bombay	Cancelled

Code for Viewing flight details

```
def view():#viewing flights
    c=0
    r=1
    view=tk.Tk()
    view.title("View Details of Flights")
    tk.Label(master=view,text="Flight Number-----ETA-----Destination-----Status").grid(row=1,column=0)
    for i in scheduled:
        c+=1
        r+=1
        tk.Label(master=view,text=(i,"-----",scheduled[i][0],"-----",scheduled[i][1],"-----",scheduled[i][2])).grid(row=r,column=0)
    for i in cancelled:
        c+=1
        r+=1
        tk.Label(master=view,text=(i,"-----",cancelled[i][0],"-----",cancelled[i][1],"-----",cancelled[i][2])).grid(row=r,column=0)
```

Reminder Screen



Code for reminder screen

```
def reminder(): #This is the reminder function, takes current time from the system and compares it to the list of flights, if the time is greater it creates a pop up
    now=datetime.datetime.now()
    for i in scheduled:
        l=scheduled[i][0].split(":")
        time=now.replace(hour=int(l[0]),minute=int(l[1]),second=0,microsecond=0)
        if now>time:
            remindersc=tk.Tk()
            remindersc.title("Reminder!")
            tk.Label(master=remindersc,text="Flight Number "+i+" Not Updated").grid(row=0,column=0)
            remindersc.mainloop()
```

Home screen



Result:

Thus, the details of architectural design/framework/implementation along with the screenshots were provided.