EMPLOYEE PROJECT MANAGEMENT SYSTEM

BULLETIN

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ABBREVIATIONS

1. RAM :Random Access Memory

1. INTRODUCTION

Development of an Employee-Project Management System (EP-MS). This project is aimed at developing an Employee-Project Management System (EP-MS) for the Company 'QGLH Computers'. This system can be used to update employee and project information, allocating employees to projects and generating reports.

1.1 PURPOSE

Goals of the project are:

- 1. Provide users with an interface through which they may log into the system.
- 2. Provide project managers with an interface through which they may initialize a new project.
- 3. Provide project managers with an interface through which they may dynamically add or remove processes from a particular project.
- 4. Provide project managers with a system alerting them of inconsistencies in process dependencies among the processes chosen for a project.
- 5. Provide project managers as well as team members with an interface through which they may view all of the processes for a project in the form of a dependency graph.
- 6. Provide project managers as well as team members with an interface through which they may update the inputs, outputs, and status of a process.
- 7. Obtain information from and make changes to the database quickly and accurately.

1.2 NEED/MOTIVATION

Project management systems provide a means for managing projects by planning, organizing, and coordinating the different required aspects of any project. Project management systems are either general software applications or project management specific software applications. EPMS helps to eliminate the manual process and saves a lot of time and money. The employee product management system lowers the burden and the pressure on HRs and the business managers.

2. LITERATURE SURVEY

Primavera P6 EPPM is the solution for globally prioritizing, planning, managing, and executing projects, programs, and portfolios. Primavera P6 can trace its origins to 1983 when it was first established under the name Primavera Systems. In 2008, Primavera Systems was bought out by Oracle, who then developed the tool into the version that is used today. It's a multiuser system that lets teams work at the same time on the same project across the organization. It integrates with Oracle and other third-party products. The dashboard allows users to manage a single project or even a portfolio, with great flexibility. Outdated and not up to the design and ease of use of its competition is the main disadvantage. Primavera P6 is for Windows only.

Trello is a popular, simple, and easy-to-use collaboration tool that enables you to organize projects and everything related to them into boards. The Main Advantages of using Trello are Task scheduling, Document management, Real-time notifications, Realtime editing. The main disadvantages are it does not allow managing tasks offline on the computer, there is no widget to see the checklist items faster, and does not exclude large scale tasks.

Todo is a list of tasks you need to complete, or things that you want to do in order of priority. It helps to organize the tasks, Setting priorities. It sets reminders for any self-imposed deadlines and is also able to sync between different platforms. Team to-do list allows you to assign the best person for the job. The main disadvantage of this app is that it Promotes procrastination and task avoidance. It's a lengthy running to-do list can be intimidating and cluttered.

Microsoft Project is a project and work management solution that enables all professionals who manage projects to stay on top of the changing requirements of their day-to-day jobs. It provides tools that are simple for anyone to use, flexible for any project type, powerful for initiatives of any size, and transparent for visibility across the organization. The software offers a simple and intuitive interface where users can switch between grids, boards, or Gantt charts to track progress. It integrates with Microsoft Teams to support collaboration where team members can

share files, chat, or hold meetings. Distributed teams can coauthor or edit tasks simultaneously. Automated scheduling based on effort, duration, and resources help teams stay on track. But there are some disadvantages too. It include Requires Training, Cost Constraints, File Compatibility Issues.

3.REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS

The employee-project management system has been designed and developed to manage the process project details {project id, project name, start date, end date, no of resources required, no of resources allocated, project status} and employee details {emp id, emp name, emp status, gender, basic salary, bonus, project details}. In the employee object, the number of projects being allocated are a maximum of three projects with allocation information {project id, allocation start date, allocation end date, role, percentage allocated).

In order to add / delete the employee, the administrator has a built-in login id and password set. There may be any number of administrators. Here, in the employee details entry, the employee id is auto generated. All employee details should be captured. The administrator is allowed to add projects. The **project id** is auto generated. All project details should be captured. The **end date** should be atleast one month after the **start date**. The administrator is allowed to allocate the projects to the resource(employee). Once a resource is allocated to a project, update the count. The **project status** is by default **active**. It will be set as "**closed**" manually. Resources cannot be allocated to **closed** projects. An employee can be allocated to a max of 3 projects. The **sum of allocation percentage** of all the projects should be 100. As soon as an employee is allocated to 3 projects or allocation percentage sum is 100, the employee is marked as allocated.

The employee is given a user id and password. The employee can login and see his/her details including employment and project details.

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3.1.1 FUNCTIONAL COMPONENTS

Main Menu

- 1. Login
 - 1.1. Adm/ Emp ID
 - 1.2 Password

Admin Module

- 1. Project Management
 - 1.1 Add new project
 - 1.1.1 Project Name
 - 1.1.2 Start Date
 - 1.1.3 End Date
 - 1.1.4 No of resources required
 - 1.1.5 No of resources allocated = 0
 - 1.1.6 Project status=active
 - 1.1.7 Project id (auto generated)
 - 1.1.8 No of resources deallocated=0
 - 1.1.9 allocation percentage
 - 1.1.10 done percentage=0
 - 1.2 Close project
 - 1.2.1 All employees should be deallocated
 - 1.3 Delete closed project
 - 1.3.1 Move to the deleted file
 - 1.4 Allocate project
 - 1.4.1 Percentage of allocation
 - 1.4.1.1 Allocation start date
 - 1.4.1.2 Allocation end date
 - 1.4.2 Add employees till total allocation is 100%
 - 1.5 Deallocate project

- 1.5.1 Select Employee
 - 1.5.1.1 Show the project allocation details
 - 1.5.1.2 Option to deallocate
- 1.6 Exit
- 2. Employee Management
 - 2.1 Add new employee
 - 2.1.1 Emp ID
 - 2.1.2 Emp Name
 - 2.1.3 Emp Status
 - 2.1.4 Gender
 - 2.1.5 Basic Salary
 - 2.1.6 Bonus
 - 2.1.7 Project Details
 - 2.1.8 Password
 - 2.2 Calculate bonus
 - 2.3 Exit
- 3. Reports
 - 3.1 List active projects
 - 3.2 List resources of a project
 - 3.3 Exit

Detailed Description about the system:

The Employee Management

- 1. Add new Employee
 - This function should accept details of employees and add these details in the binary file "emp.dat".
- 2. Calculate bonus
 - If the employee is allocated for 3 projects he gets 40% of his salary as his bonus, 20 % of his salary if allocated for two projects and 10 % for a single project. If an employee is not allocated he gets 3% of his salary as bonus.

3. Exit

• Go to main menu

The Project Management

1. Add new project

 This function should accept details of project and add these details in the binary file "pro.dat"

2. Close project

• This option should take a project id and set the status as "closed" based on the end date. Before that, the status of the resources must be set as "deallocated".

3. Delete closed project

• This option should find out all the closed projects and add these details in the history file and remove it from the project file. Display the message that a particular project is "closed".

4. Allocate project to resource

This option should allow the employees to be allocated to the project (max of 3).
 Proper business rules/ validation should be followed during allocation, and allocation dates should be in the range of the project. project shouldn't be closed, duplicate allocations to the same project to be avoided etc

5. Deallocate project from resource

• Accept emp id, project id for deallocation. Do deallocation and the needful changes.

6. Exit

• Go to main menu

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3.2 HARDWARE REQUIREMENTS

- Processor: Intel i3 or higher
- Operating System: Microsoft Windows 7/8/8.1/10
- Access to Linux using Virtual box
- RAM:4GB of RAM (1GB for linux in vbox)

3.3 SOFTWARE REQUIREMENTS

- Visual studio/ notepad++/ text editor,
- vi editor (To write code using C).

3.4.WATERFALL MODEL

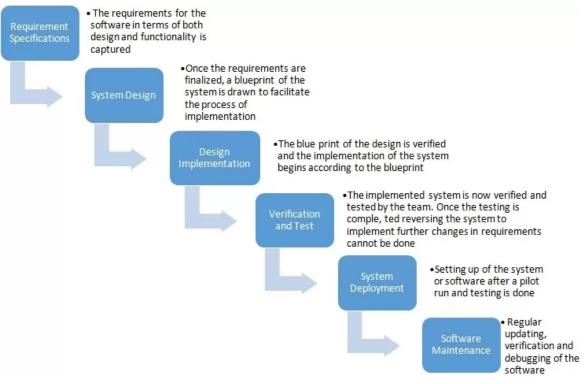


Fig 3.1 Waterfall Model

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4. N- TIER ARCHITECTURE

4.1 3 - TIER ARCHITECTURE

3-tier architecture is a client-server architecture in which the functional process logic, data access, computer data storage and user interface are developed and maintained as independent modules on separate platforms.

A "tier" in this case can also be referred to as a "layer". The three tiers, or layers, involved include:

- A Presentation Layer that sends content to browsers.
- An Application Layer that uses an application server and processes the business logic for the application.
- A Data Layer is a database management system.

4.2 2 - TIER ARCHITECTURE

The two-tier architecture is like a client server application. The direct communication takes place between client and server. There is no intermediate between client and server.

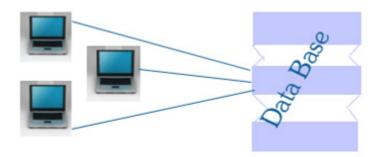


Fig.No. 4.1 2-Tier architecture

The above figure shows the architecture of two-tier. The two tiers of two-tier architecture is

- Database (Data tier)
- Client Application (Client tier)

Here in the developed system, we have two tier architecture and the communication is one to one. We have a need to save the employee details in the database.

5. DESIGN AND IMPLEMENTATION

5.1 PRODUCT FEATURES

- The software allows the administrator to provide the details of the employees and the projects associated with them.
- The software allows the administrator to modify the project details including project allocation, deallocation, project status, resources required, dates associated with the project and bonus allocated to the employees.
- The software also allows the employee to view his project details, project history, project status and bonus.

5.2 CLASS DIAGRAM DESIGN

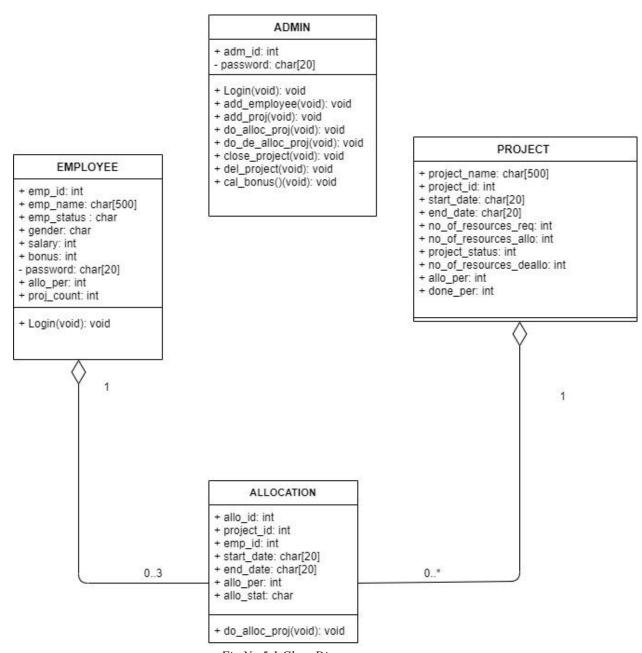


Fig.No.5.1 Class Diagram

5.3 USE CASE DIAGRAM

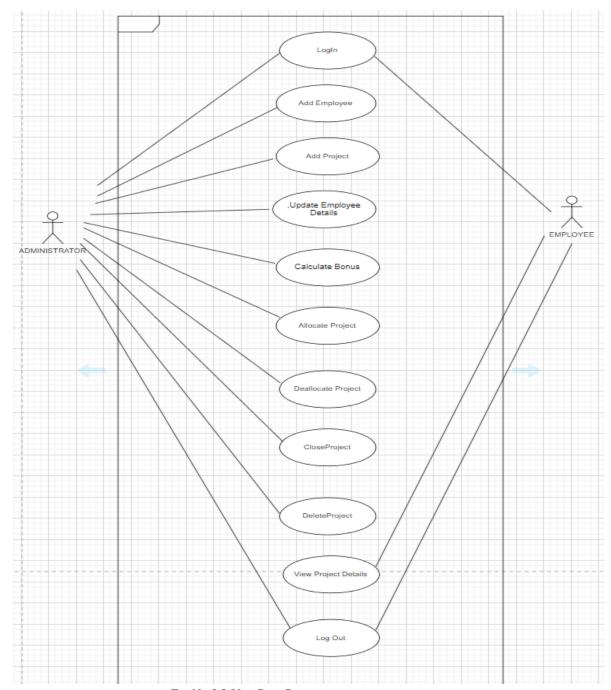


Fig.No.5.2 Use Case Diagram

5.4 SEQUENCE DIAGRAM

DO ALLOCATION

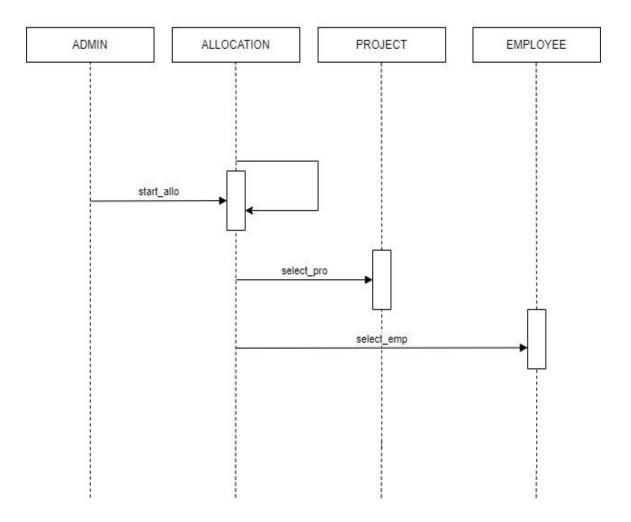


Fig.No.5.3 Sequence Diagram

6. SNAPSHOTS

```
Employee Project Management Application
1-Login
  2-Build DB
  0-Exit
Your choice:2
EPMS - Sample DB
1-Admin DB
  2-Emp DB
  3-Project DB
  4-Allocation DB
  5-Diplay
  0-Exit
Your choice:1
```

```
1-Login
2-Build DB
   0-Exit
Your choice:2
EPMS -
               Sample DB
1-Admin DB
2-Emp DB
3-Project DB
4-Allocation DB
   5-Diplay
   0-Exit
Your choice:5
1.adm[1010,anoop]
2.adm[1011,ananthu]
3.adm[1012,anju]
4.adm[1013,anitta]
5.adm[1014,mekhana]
Emp:
Proj:
Allocations:
```

Employee Project Management Application
1-Login
2-Build DB
0-Exit
Your choice:1

Login

Enter your id:1010
Enter password:anoop
Admin id 1010 logged in successfully
press any key to continue
press any key to continue
ADMIN ADDITION
ADMIN APPLICATION
ADMIN APPLICATION ####################################
ADMIN APPLICATION ###################################
ADMIN APPLICATION ####################################

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Mammooty,You are on board Generated id is 10003 Going Back to Admin Menu...

```
ADMIN APPLICATION
1-Add Employee
    2-Add Project
    3-Project Allocation
    4-Project Deallocation
    5-Close Project
    6-Delete Project
    7-Calculate Bonus
    0-Exit
Your choice:2
****************************
                  Add Project
*************************
Enter project name:Car
Enter Start Date dd-mm-yyyy:21-10-2021
Enter End Date dd-mm-yyyy:21-11-2021
Enter No of Resources Requested:2
    You added Car project
Project id is 1
 1.Project Details[1, Car,21-10-2021,21-11-2021,2,0,0]
```

#######################################			
ADMIN APPLICATION			

1-Add Employee			
2-Add Project			
3-Project Allocation			
4-Project Deallocation			
5-Close Project			
6-Delete Project			
7-Calculate Bonus			
0-Exit			
#######################################			
Your choice:3			

ALLOCATION			

^^^^^			
SELECT PROJECT			
^^^^^^^			
Enter project id:1			
PROJECT:Car			
Start date:21-10-2021			
End date:21-11-2021			
No of resource requested:2			
Project status:0			
project allocation:0			
^^^^^^^^^^			
ALLOCATE TO EMPLOYEES			
Enter employee id:10001			
Enter emptoyee to:10001			
Employee name:Victor			
Employee status:Active			
Gender:Male			
salary:40000.000000			
bonus:0.000000			
allocation percentage:0			
accocation per centage.o			
Enter employee allocation percentage:			

```
Enter employee allocation percentage:30
Allocation date should be between Start date:21-10-2021 End date:21-11-2021
Enter Start Date dd-mm-yyyy:21-10-2021
Enter End Date dd-mm-yyyy:21-11-2021
Enter employee id:10002
Employee name:Mohanlal
Employee status:Active
Gender:Male
salary:60000.000000
bonus:0.000000
allocation percentage:0
Enter employee allocation percentage:20
Allocation date should be between Start date:21-10-2021 End date:21-11-2021
Enter Start Date dd-mm-yyyy:21-10-2021
Enter End Date dd-mm-yyyy:21-11-2021
Enter employee id:-1
Does not exist
  1.allocation[ 1, 10001,21-10-2021,21-11-2021,30,A]
  2.allocation[ 1, 10002,21-10-2021,21-11-2021,20,A]
        Going back to Admin menu
```

######################################
1-Add Employee
2-Add Project
3-Project Allocation
4-Project Deallocation
5-Close Project 6-Delete Project
7-Calculate Bonus
0-Exit
######################################

DEALLOCATION
^^^^^
SELECT PROJECT
^^^^^^
1
Enter project id:4
Project Name:Bar
Project Dates: 4-10-2003 to 5-11-2003
No. of Resources allocated:1
Project Status:1
Allocation Percentage:50
Accocation referringe.50
Sl No.:1
Employee ID:10005
Employee Name:Nivin Pauly
Employee Allocation Percentage for this project:50
Task Dates: 4-10-2003 to 5-11-2003
Allocation Status:A

ADMIN APPLICATION

1-Add Employee
2-Add Project
3-Project Allocation
4-Project Deallocation
5-Close Project
6-Delete Project
7-Calculate Bonus
0-Exit

Your choice:5
Tour choteers

CLOSE PROJECT

^^^^^^^
PROJECT DETAILS
^^^^^^^^^^
Enter project id:2
Enter project tutz
PROJECT:Bus
Start date: 5-10-2021
End date: 5-11-2021
No of resource requested:2
Project status:2
PROJECT CLOSED SUCCESSFULLY!!
Going Back to admin app
Going Back to admin app

######################################	
######################################	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
DELETE PROJEC	T
************	**********
PROJECT DETAIL	\^^^^^^^^
Enter project id:2	
PROJECT:Bus Start date: 5-10-2021 End date: 5-11-2021 No of resource requested:2 Project status:3	
PROJECT deleted SUCCESSFULLY!! Going Back to admin app	

```
ADMIN APPLICATION
1-Add Employee
     2-Add Project
     3-Project Allocation
     4-Project Deallocation
     5-Close Project
     6-Delete Project
     7-Calculate Bonus
     0-Exit
Your choice:7
                    CALCULATE BONUS
**************************
Enter employee id:1
Do you want to calculate bonus? y/n:y
Employee name:Shibu
Employee status:Allocated
Gender:Male
salary:200000.000000
bonus:6000.000000
allocation percentage:100
6000.000000 BONUS ADDED SUCCESSFULLY!!
 1.Employee[1, Shibu, 2,M,200000.000000,6000.000000,shib,100,0]
 2.Employee[2, Babu, 2,M,50000.000000,0.000000,bab,100,0]
```

```
Employee Project Management Application

Login

Login

Login

Enter your id:2001

Enter power de:2001

Enter password:anoop

Employee logged in successfully

press any key to continue...e

Employee MANAGEMENT

1-view Project

2-view Status

3-view History

4-view Bonus

0-sit

Your choice:1

PROJECT DETAILS

PROJECT LOGIN

PROJECT LO
```

7. Testing And Results

7.1 Unit Testing

Unit testing involves the testing of each unit or an individual component of the software application. It is the first level of functional testing. The aim behind unit testing is to validate unit components with its performance. A unit is a single testable part of a software system and tested during the development phase of the application software.

The purpose of unit testing is to test the correctness of isolated code. A unit component is an individual function or code of the application. Whenever the application is ready and given to the Test engineer, he/she will start checking every component of the module or module of the application independently or one by one, and this process is known as Unit testing or components testing.

7.2 Black Box Testing

Black Box Testing is a software testing method in which the functionalities of software applications are tested without having knowledge of internal code structure, implementation details and internal paths. Black Box Testing mainly focuses on input and output of software applications and it is entirely based on software requirements and specifications. It is also known as Behavioral Testing.



Fig.No.7.1 Black Box Testing

7.3 White Box Testing

White box testing techniques analyze the internal structure used data structures, internal design, code structure and the working of the software rather than just the functionality as in black box testing. It is also called glass box testing or clear box testing or structural testing.

7.4 Integration Testing

Integration testing is the second level of the software testing process after unit testing. In this testing, units or individual components of the software are tested in a group. The focus of the integration testing level is to expose defects at the time of interaction between integrated components or units. Unit testing uses modules for testing purpose, and these modules are combined and tested in integration testing.

The Software is developed with a number of software modules that are coded by different coders or programmers. The goal of integration testing is to check the correctness of communication among all the modules.

7.5 Validation Testing

Validation testing in software engineering is in place to determine if the existing system complies with the system requirements and performs the dedicated functions for which it is designed along with meeting the goals and needs of the organization.

7.6 Acceptance Testing

Acceptance testing, a testing technique performed to determine whether or not the software system has met the requirement specifications. The main purpose of this test is to evaluate the system's compliance with the business requirements and verify if it has met the required criteria for delivery to end users.

Test case ID: 1 Test Case Description: Verify the functionality of "Login" with valid data		n" with valid	
Prerequisit	Prerequisites: Test case (Pass/Fail): Pass		
Test Data:		ID: 1010	
		Password: anoop	
Step No.	Step details	Expected Result	Actual Result
1	Navigate to Login page	Login Screen should be opened	As expected
2	Enter ID, password	Credentials can be entered	As expected
3	Press Enter key	A message will be displayed as "Admin id 1010 logged in successfully press any key to continue" and also customer id will be displayed.	As expected

Table.No.7.1 Testing 1

Test case ID	D: 2 Test Case Description data	Test Case Description: Verify the functionality of "Login" with invalid data	
Prerequisite	es:	Test case (Pass/Fail): Fail	
Test Data:		ID:1	
		Password: 123	
Step No.	Step details	Expected Result	Actual
			Result
1	Navigate to Login page	Login screen should be opened	As expected
2	Enter ID,Password	Credentials can be entered	As expected
3	Press Enter Key	A message should be displayed as "Invalid login"	As expected

Table.No.7.2 Testing 2

Test case II	Test Case Description data	n: Verify the functionality of "Log	in" with valid					
Prerequisites: Test Data:		Test case (Pass/Fail): Pass ID:2001 Password: anoop						
					Step No.	Step details	Expected Result	Actual Result
					1	Navigate to Login page	Login screen should be opened	As expected
2	Enter ID,Password	Credentials can be entered	As expected					
3	Press Enter Key	A message should be displayed as "Employee logged in successfully press any key to continue"	As expected					

Table.No.7.3 Testing 3

Test case ID: 4		Test Case Description: Verify the functionality of "Login" with invalid data			
Prerequisites:		data	Test case (Pass/Fail): Fail		
Test Data:			ID:2000		
			Password: asdfva		
Step No.		Step details	Expected Result	Actual Result	
1	Navi	gate to Login page	Login screen should be opened	As expected	
2	Ente	r ID,Password	Credentials can be entered	As expected	
3	Pres	s Enter Key	A message should be displayed as "Invalid login"	As expected	

Table.No.7.4 Testing 4

Test case ID	D: 5 Test Case Description:	Add Employee		
Prerequisites:		Test case (Pass/Fail): Pass		
Test Data:		Name:Anoop		
		Gender:M		
		Basic Salary:25000		
		Password:1234		
Step No.	Step details	Expected Result	Actual	
_	_		Result	
1	Navigate to Add Employee	Add Employee screen	As expected	
	page	should be opened		
2	Enter Name, Gender, Basic	Credentials can be entered	As expected	
	Salary,Password			
3	Press Enter Key	A message should be	As expected	
		displayed as "You are		
		added Anoop		
		Generated id is 2009"		

Table.No.7.5 Testing 5

Test case ID: 6 Test Case Description: A		Test Case Description: A	Add Project		
Prerequisites:			Test case (Pass/Fail): Pass		
Test Data:			Project Name:Car		
			Start Date:20-05-2021		
			End Date:20-06-2021		
			No. of Resources: 3		
Step No.		Step details	Expected Result	Actual	
				Result	
1	Navi	gate to Add Project page	Add Project screen should	As expected	
			be opened		
2	Ente	r Project Name,Start	Credentials can be entered	As expected	
	Date	End Date,No. of			
	Reso	urces			
3	Pres	s Enter Key	A message should be	As expected	
			displayed as "You added		
			Car project		
			Project id is 106		
			"		

Table.No.7.6 Testing 6

Test case ID:	Test case ID: 7 Test Case Description: Add Project with invalid data			
Prerequisites	:		Test case (Pass/Fail): Fail	
Test Data:			Project Name:Car	
			Start Date:20-05-2021	
			End Date:20-07-2021	
			No. of Resources: 3	
Step No.		Step details	Expected Result	Actual
				Result
1	Navi	gate to Add Project page	Login screen should be	As expected
			opened	
2	Enter	r Project Name,Start	Credentials can be entered	As expected
	Date	End Date, No. of		
	Reso	urces		
3	Pres	s Enter Key	A message should be	As expected
			displayed as "Error:End	
			Date should be only one	
			month after Start Date	
			"	

Table.No.7.7 Testing 7

Test case ID	Test case ID: 8 Test Case Description: Project Allocation with valid Project ID			ect ID
Prerequisite	Prerequisites:		Test case (Pass/Fail): Pass	
Test Data:			Project ID:106	
			Employee ID:1	
			Employee Allocation Percent	tage:50
			Start Date:20-05-2021	
			End Date:20-06-2021	
Step No.		Step details	Expected Result	Actual
_		_		Result
1	Navig	gate to Allocation page	Project Allocation screen	As expected
			should be opened	
1	Navig	gate to Select Project page	Select Project screen should	As expected
			be opened	
2	Enter	Project ID	Credentials can be entered	As expected
3	Press	Enter Key	Displays Details Of Project	As expected
			ID 106	
4	Enter	Employee ID	Credentials can be entered	As expected
_			7: 1 7 1 00	
5	Press	Enter Key	Displays Details Of	As expected
		Employee ID 1		
6	I	Employee Allocation	Credentials can be entered	As expected
	Perce	ntage		

5	Press Enter Key	Displays a message	As expected
		"Allocation date should be between Start Date:	
		20-05-2021 And End Date:20-06-2021 "	
6	Enter Start Date, End Date	Credentials can be entered	As expected
5	Press Enter Key	It will continue to add another employee until allocation percentage becomes hundred and no of resources requested	As expected

Table.No.7.8 Testing 8

Test case ID: 9 Test Case Description: F		Project Allocation with invalid Pr	roject ID
Prerequisites:		Test case (Pass/Fail): Fail	
Test Data:		Project ID:1223	
		Employee ID:1	
		Employee Allocation Percen	tage:50
		Start Date:20-05-2021	
		End Date:20-07-2021	
Step No.	Step details	Expected Result	Actual
			Result
1	Navigate to Allocation page	Project Allocation screen should be opened	As expected
2	Navigate to Select Project page	Select Project screen should be opened	As expected
	Enter Project ID	Credentials can be entered	As expected
	Press Enter Key	A message should be displayed as "Does Not Exist Do You want to quit (y/n):	As expected
	Enter y/n	Credentials can be entered	As expected
	Press Enter Key	It will go back to Admin Page	As expected

Table.No.7.9 Testing 9

Test case ID:	: 10	Test Case Description: P	roject Allocation with Valid Emp	oloyee Id
Prerequisites	s:		Test case (Pass/Fail): Pass	
Test Data:			Project ID:106	
			Employee ID:1	
			Employee Allocation Percent	tage:50
			Start Date:20-05-2021	
			End Date:20-06-2021	
Step No.		Step details	Expected Result	Actual Result
1	Navi	gate to Allocation page	Project Allocation screen should be opened	As expected
1	Navi	gate to Select Project page	Select Project screen should be opened	As expected
2	Enter	Project ID	Credentials can be entered	As expected
3	Press	Enter Key	Displays Details Of Project ID 106	As expected
4	Enter	Employee ID	Credentials can be entered	As expected
5	Press	Enter Key	Displays Details Of Employee ID 1	As expected
6		Employee Allocation entage	Credentials can be entered	As expected
5		Enter Key	Displays a message "Allocation date should be between Start Date: 20-05-2021 And End Date:20-06-2021"	As expected
6	Enter	Start Date,End Date	Credentials can be entered	As expected
5	Press	Enter Key	It will continue to add another employee until allocation percentage becomes hundred and no of resources requested	As expected

Table.No.7.10 Testing 10

Test case ID: 11 Test Case Description: Project Allocati			roject Allocation with Invalid Er	nployee ID
Prerequisites:			Test case (Pass/Fail): Fail	
Test Data:			Project ID:106	
			Employee ID:100	
			Employee Allocation Percent	tage:50
			Start Date:20-05-2021	
			End Date:20-07-2021	
Step No.		Step details	Expected Result	Actual
				Result
1	Navi	gate to Allocation page	Project Allocation screen	As expected
			should be opened	
2	Navi	gate to Select Project page	Select Project screen should	As expected
			be opened	
2	Ente	r Project ID	Credentials can be entered	As expected
3	Press	s Enter Key	Displays Details Of Project	As expected
			ID 106	
4	Ente	r Employee ID	Credentials can be entered	As expected
5	Press	s Enter Key	A message should be	As expected
			displayed as "Does Not	
			Exist" and goes back to	
			Admin Page	

Table.No.7.11 Testing 11

Test case ID	: 12	Test Case Description: Project Allocation when employee allocated to same project,			
Prerequisite	es:		Test case (Pass/Fail): Pass		
Test Data:			Project ID:106		
			Employee ID:1		
			Employee Allocation Percen	Employee Allocation Percentage:50	
			Start Date:20-05-2021		
			End Date:20-06-2021		
Step No.		Step details	Expected Result	Actual	
				Result	
1 Navigate to Allocation page		igate to Allocation page	Project Allocation screen	As expected	
			should be opened		

2	Navigate to Select Project page	Select Project screen should be opened	As expected
3	Enter Project ID	Credentials can be entered	As expected
4	Press Enter Key	Displays Details Of Project ID 106	As expected
5	Enter Employee ID	Credentials can be entered	As expected
6	Press Enter Key	Displays Details Of Employee ID 1	As expected
7	Press Enter Key	A message should be displayed as "This employee id = 1 is already allocated to this project"	As expected

Table.No.7.12 Testing 12

		Test Case Description: Project Allocation when employee not allocated to same project		
Prerequisite	es:		Test case (Pass/Fail): Pass	
Test Data:			Project ID:106	
			Employee ID:1	
			Employee Allocation Percent	tage:50
			Start Date:20-05-2021	
			End Date:20-06-2021	
Step No.		Step details	Expected Result	Actual
				Result
1	Navi	gate to Allocation page	Project Allocation screen	As expected
			should be opened	
1	Navi	gate to Select Project page	Select Project screen should	As expected
			be opened	
2	Ente	r Project ID	Credentials can be entered	As expected
3	Press	s Enter Key	Displays Details Of Project	As expected
			ID 106	
4	Ente	r Employee ID	Credentials can be entered	As expected
5	Press	s Enter Key	Displays Details Of	As expected
			Employee ID 1	
6	l l	r Employee Allocation entage	Credentials can be entered	As expected

5	Press Enter Key	Displays a message	As expected
		"Allocation date should be	
		between Start Date:	
		20-05-2021 And End	
		Date:20-06-2021 "	
6	Enter Start Date, End Date	Credentials can be entered	As expected

Table.No.7.13 Testing 13

Test case ID: 14 Test Case Description: Project Allocation when employee has already 3 projects				
Prerequisit	Prerequisites:		Test case (Pass/Fail): Pass	
Test Data:			Project ID:106	
			Employee ID:1	
			Employee Allocation Percent	tage:50
			Start Date:20-05-2021	
			End Date:20-06-2021	
Step No.		Step details	Expected Result	Actual Result
1	Navi	gate to Allocation page	Project Allocation screen should be opened	As expected
2	Navi	gate to Select Project page	Select Project screen should be opened	As expected
3	Ente	r Project ID	Credentials can be entered	As expected
4	Press	Enter Key	Displays Details Of Project ID 106	As expected
5	Ente	r Employee ID	Credentials can be entered	As expected
6	Press	Enter Key	Displays Details Of Employee ID 1	As expected
7		r Employee Allocation entage	Credentials can be entered	As expected
8	Press	s Enter Key	Displays a message "Allocation date should be between Start Date: 20-05-2021 And End Date:20-06-2021"	As expected
9	Ente	r Start Date,End Date	Credentials can be entered	As expected
10	Press	s Enter Key	It will continue to add another employee until allocation percentage	As expected

		becomes hundred and no of resources requested	
11	Enter Employee ID	Credentials can be entered	As expected
12	Press Enter Key	A message should be displayed as "Project allocated to Victor is maximum now"	As expected

Table.No.7.14 Testing 14

Test case ID: 15 Test Case Description: Project Allocation when employee does have 3 projects				
Prerequisite	<u> </u>	Test case (Pass/Fail): Pass		
Test Data:		Project ID:106		
		Employee ID:1		
		Employee Allocation Percen	tage:50	
		Start Date:20-05-2021		
		End Date: 20-06-2021		
Step No.	Step details	Expected Result	Actual Result	
1	Navigate to Allocation page	Project Allocation screen should be opened	As expected	
1	Navigate to Select Project pag	e Select Project screen should be opened	As expected	
2	Enter Project ID	Credentials can be entered	As expected	
3	Press Enter Key	Displays Details Of Project ID 106	As expected	
4	Enter Employee ID	Credentials can be entered	As expected	
5	Press Enter Key	Displays Details Of Employee ID 1	As expected	
6	Enter Employee Allocation Percentage	Credentials can be entered	As expected	
5	Press Enter Key	Displays a message "Allocation date should be between Start Date: 20-05-2021 And End Date:20-06-2021"	As expected	
6	Enter Start Date, End Date	Credentials can be entered	As expected	
5	Press Enter Key	It will continue to add another employee until	As expected	

allocation percentage
becomes hundred and no of
resources requested
and checks if employee has
already 3 projects and finds
it to be false and can be
allocated to another project

Table.No.7.15 Testing 15

Test case ID: 16 Test Case Description: Project Allocation when employee sum allocation percentage is 100				
Prerequisit	es:	Test case (Pass/Fail): Pass		
Test Data:		Project ID:106		
		Employee ID:1		
		Employee Allocation Percen	tage:50	
		Start Date:20-05-2021		
		End Date:20-06-2021		
Step No.	Step details	Expected Result	Actual Result	
1	Navigate to Allocation page	Project Allocation screen should be opened	As expected	
2	Navigate to Select Project page	e Select Project screen should be opened	As expected	
3	Enter Project ID	Credentials can be entered	As expected	
4	Press Enter Key	Displays Details Of Project ID 106	As expected	
5	Enter Employee ID	Credentials can be entered	As expected	
6	Press Enter Key	Displays Details Of Employee ID 1	As expected	
7	Enter Employee Allocation Percentage	Credentials can be entered	As expected	
8	Press Enter Key	Displays a message "Allocation percentage exceed, so you cannot allocate to this employee.current employee allocation percentage is project allocation percentage is "	As expected	

Table.No.7.16 Testing 16

Test case ID	: 17	Test Case Description: Pr Percentage is not 100%,A	roject Allocation When Employ Ilocate Employee	ee Allocation
Prerequisite	:s:		Test case (Pass/Fail): Pass	
Test Data:			Project ID:106	
			Employee ID:1	
			Employee Allocation Percent	tage:50
			Start Date:20-05-2021	
			End Date:20-06-2021	
Step No.		Step details	Expected Result	
-		-	-	Actual Result
1	Navi	gate to Allocation page	Project Allocation screen should be opened	As expected
1	Navi	gate to Select Project page	Select Project screen should be opened	As expected
2	Enter	Project ID	Credentials can be entered	As expected
3	Press	Enter Key	Displays Details Of Project ID 106	As expected
4	Ente	Employee ID	Credentials can be entered	As expected
5	Press	Enter Key	Displays Details Of Employee ID 1	As expected
6		Employee Allocation entage	Credentials can be entered	As expected
5		Enter Key	Displays a message "Allocation date should be between Start Date: 20-05-2021 And End Date:20-06-2021 "	As expected
6	Enter	Start Date,End Date	Credentials can be entered	As expected
7	Press	Enter Key	It will continue to add another employee until allocation percentage becomes hundred and no of resources requested and checks if the employee already has 3 projects.	As expected

Table.No.7.17 Testing 17

Test case ID: 18 Test Case Description: Project Deallocation with valid data				
Prerequisite	es:	<u>L</u>	Test case (Pass/Fail): Pass	
Test Data:			Project ID:106	
			Serial No: 1	
Step No.		Step details	Expected Result	Actual Result
1	Navi	gate to Deallocation page	Project Deallocation screen should be opened	As expected
2	Navi	gate to Select Project page	Select Project screen should be opened	As expected
3	Ente	r Project ID	Credentials can be entered	As expected
4	Press	s Enter Key	Displays Details Of Project ID 106 and displays details of allocated employees with serial no.	As expected
5	1	r Serial No. given to loyee	Credentials can be entered	As expected
6	Press	s Enter Key	Displays No. of resources deallocated, Project Allocation Percentage, Project deallocation Percentage and displays a message"DEALLOCATED !!"and goes back to Admin Page	As expected

Table.No.7.18 Testing 18

Test case ID	Test case ID: 19 Test Case Description: Project Deallocation with Invalid Project ID			d Project ID	
Prerequisite	es:		Test case (Pass/Fail):Fail		
Test Data:			Project ID:1234		
			Serial No: 1		
Step No.		Step details	Expected Result	Actual Result	
1	Navi	gate to Deallocation page	Project Deallocation screen should be opened	As expected	
2	Navi	gate to Select Project page	Select Project screen should be opened	As expected	
3	Enter	r Project ID	Credentials can be entered	As expected	
4	Press	Enter Key	A message should be displayed as "Does Not	As expected	

	Exist"and goes back to	
	Admin Page	

Table.No.7.19 Testing 19

Test case ID: 20 Test Case Description: Clo			lose Project with valid data		
Prerequisite	Prerequisites:		Test case (Pass/Fail): Pass		
Test Data:			Project ID:106		
Step No.		Step details	Expected Result	Actual Result	
1	Navi	gate to Close Project page	Close Project should be opened	As expected	
2	Ente	Project ID	Credentials can be entered	As expected	
3	Pres	s Enter Key	Displays Details Of Project ID 106 and displays a message as "PROJECT CLOSED SUCCESSFULLY!!"	As expected	

Table.No.7.20 Testing 20

Test case ID	Test case ID: 21 Test Case Description: Close Project with Invalid Project ID				
Prerequisites: Test case (Pass/Fail): Fail					
Test Data:		Project ID:1000			
Step No. Step details		Expected Result	Actual Result		
1	Navigate to Close Project page	Close Project should be opened	As expected		
2	Enter Project ID	Credentials can be entered	As expected		
3	Press Enter Key	Displays a message as"Does not exist PROJECT IS NOT CLOSED!!"	As expected		

Table.No.7.21 Testing 21

Test case ID:	Test case ID: 22 Test Case Description: Close Project when project percentage is 100			
Prerequisites	:		Test case (Pass/Fail): Pass	
Test Data:			ID:106	
Step No.		Step details	Expected Result	Actual
				Result
1	Navi	gate to Close Project page	Close Project should be opened	As expected
2	Ente	Project ID	Credentials can be entered	As expected
3	Pres	s Enter Key	Displays Details Of Project ID 106 and displays a message as"PROJECT CLOSED SUCCESSFULLY!!"	As expected

Table.No.7.22 Testing 22

Test case ID	Test case ID: 23 Test Case Description: Close Project when project percentage is not 100				
Prerequisites:		Test case (Pass/Fail): Fail			
Test Data:			ID:106		
Step No.	St	ep details	Expected Result	Actual Result	
1	Navigate	e to Close Project page	Close Project should be opened	As expected	
2	Enter Pi	roject ID	Credentials can be entered	As expected	
3	Verify if 100 or n	Project Percentage is ot	Displays Details Of Project ID 106 and finds Project Percentage is not 100% and displays a message as "PROJECT IS NOT CLOSED!!"	As expected	

Table.No.7.23 Testing 23

Test case ID:	Test case ID: 24 Test Case Description: Close Project when project percentage is not 10				
Prerequisites	S:	Test case (Pass/Fail): Fail			
Test Data:		ID:106			
Step No. Step details		Expected Result	Actual		
			Result		
1	Navigate to Close Project pa	age Close Project should be opened	As expected		
2	Enter Project ID	Credentials can be entered	As expected		

3	Verify if Project Percentage is	Displays Details Of Project	As expected
	100 or not	ID 106 and finds Project	
		Percentage is not 100% and	
		displays a message	
		as"PROJECT IS NOT	
		CLOSED!! "	

Table.No.7.24Testing 24

Test case ID: 25 Test Case Description: Clo			ose Project when project status is 3	
Prerequisites:			Test case (Pass/Fail): Fail	
Test Data:			ID:106	
Step No.		Step details	Expected Result	Actual
				Result
1	Navi	gate to Close Project page	Close Project should be opened	As expected
2	Enter	Project ID	Credentials can be entered	As expected
3	Verif not	y if Project Status is 3 or	Displays Details Of Project ID 106 and finds Project Status to be 3 and displays a message as"PROJECT IS NOT CLOSED!!"	As expected

Table.No.7.25 Testing 25

Test case ID: 26 Test Case Description: Cl			ose Project when project status is 2		
Prerequisites:			Test case (Pass/Fail): Pass		
Test Data:			ID:106		
Step No.		Step details	Expected Result	Actual	
				Result	
1	Navi	gate to Close Project page	Close Project should be	As expected	
			opened		
2	Enter	Project ID	Credentials can be entered	As expected	
3	Verif	y if Project Status is 2	Displays Details Of Project	As expected	
			ID 106 and finds Project		
			Status to be 2 and displays		
			a message as"PROJECT IS		
			CLOSED		
			SUCCESSFULLY!! "		

Table.No.7.26 Testing 26

Test case ID: 27 Test Case Description: Delete Project with valid data		
Prerequisites:		Test case (Pass/Fail): Pass
Test Data:		ID:106

Step No.	Step details	Expected Result	Actual
			Result
1	Navigate to Delete Project page	Delete Project should be	As expected
		opened	
2	Enter Project ID	Credentials can be entered	As expected
3	Press Enter key	Displays Details Of Project	As expected
		ID 106 and displays a	
		message as"PROJECT	
		deleted	
		SUCCESSFULLY!! "	

Table.No.7.27 Testing 27

Test case ID:	28 Test Case Description: D	elete Project with invalid data		
Prerequisites	· · · · · · · · · · · · · · · · · · ·	Test case (Pass/Fail): Fail		
Test Data:		ID:1000		
Step No.	Step details	Expected Result	Actual Result	
1	Navigate to Delete Project page	Delete Project should be opened	As expected	
2	Enter Project ID	Credentials can be entered	As expected	
3	Press Enter key	displays a message as"Does not exist "	As expected	

Table.No.7.28 Testing 28

Test case ID	Test case ID: 29 Test Case Description: Delete Project when project status is 3				
Prerequisite	es:		Test case (Pass/Fail): Pass		
Test Data:			ID:106		
Step No. Step details		Expected Result	Actual Result		
1	Navi	gate to Delete Project page	Delete Project should be opened	As expected	
2	2 Enter Project ID		Credentials can be entered	As expected	
3 Verify if Project Status is 3 or not		y if Project Status is 3 or	Displays Details Of Project ID 106 and finds Project Status to be 3 and displays a message as "PROJECT deleted SUCCESSFULLY!!"	As expected	

Table.No.7.29 Testing 29

Test case ID	Test case ID: 30 Test Case Description: Delete Project when project status is not 3				
Prerequisites:			Test case (Pass/Fail): Fail		
Test Data:			ID:106		
Step No. Step details		Expected Result	Actual Result		
1	Navi	gate to Delete Project page	Delete Project should be opened	As expected	
2	Ente	r Project ID	Credentials can be entered	As expected	
3	Verif not	y if Project Status is 3 or	Displays Details Of Project ID 106 and finds Project Status to be not 3 and displays a message as"PROJECT is not deleted!!	As expected	

Table.No.7.30 Testing 30

Test case II	Test case ID: 31 Test Case Description: Calculate Bonus with valid data				
Prerequisites:			Test case (Pass/Fail): Pass	Test case (Pass/Fail): Pass	
Test Data:			Employee ID:1		
Step No.		Step details	Expected Result	Actual	
				Result	
1	Navi	gate to Calculate Bonus	Calculate Bonus screen	As expected	
	page	· ·	should be opened		
2	Ente	r Employee ID	Credentials can be entered	As expected	
3	Pres	s Enter Key	A message should be	As expected	
			displayed as "Do you want		
			to calculate bonus? y/n:"		
			and press y to get bonus		
4	Verif	y how many Projects the	Display Details Of	As expected	
	Emp	loyee has done	Employee ID 1 and check		
			the condition which it		
			fulfills and a message is		
			displayed as" BONUS		
			ADDED		
			SUCCESSFULLY!!"		

Table.No.7.31 Testing 31

Test case ID: 32 Test Case Description: C		alculate Bonus with invalid data
Prerequisites:		Test case (Pass/Fail): Pass
Test Data:		Employee ID:1

Step No.	Step details	Expected Result	Actual Result
1	Navigate to Calculate Bonus page	Calculate Bonus screen should be opened	As expected
2	Enter Employee ID	Credentials can be entered	As expected
3	Press Enter Key	A message should be displayed as "Does Not Exist"	As expected

Table.No.7.32 Testing 32

Test case ID: 33		Test Case Description: 0 3 projects he gets 40% of	Calculate Bonus when an emplo his salary as bonus.	oyee is allocated for
Prerequisite	es:		Test case (Pass/Fail): Pass	
Test Data:			ID:1	
Step No.		Step details	Expected Result	Actual Result
1	Navi	gate to Calculate Bonus	Calculate Bonus screen should be opened	As expected
2	Ente	r Employee ID	Credentials can be entered	As expected
3	Emp	fy how many Projects the loyee has done if 3 alate accordingly	Display Details Of Employee ID 1 and check the condition which it fulfills and a message is displayed as" BONUS ADDED SUCCESSFULLY!!"	As expected

Table.No.7.33 Testing 33

Test case ID: 34		Test Case Description: 0 2 projects he gets 20% of	Calculate Bonus when an emplo f his salary as bonus.	oyee is allocated for	
Prerequisite	Prerequisites:		Test case (Pass/Fail): Pass		
Test Data:			ID:1		
Step No.		Step details	Expected Result	Actual Result	
1	Navi	gate to Calculate Bonus	Calculate Bonus screen should be opened	As expected	
2	Ente	r Employee ID	Credentials can be entered	As expected	

3	Verify how many Projects the	Display Details Of	As expected
	Employee has done if 2,	Employee ID 1 and check	
	calculate accordingly	the condition which it	
		fulfills and a message is	
		displayed as" BONUS	
		ADDED	
		SUCCESSFULLY!!"	

Table.No.7.34 Testing 34

Test case ID: 35		Test Case Description: Calculate Bonus when an employee is allocated for 1 project he gets 10% of his salary as bonus.		
Prerequisite	es:	!	Test case (Pass/Fail): Pass ID:1	
Test Data:				
Step No.		Step details	Expected Result	Actual Result
1	Navigate to Calculate Bonus		Calculate Bonus screen should be opened	As expected
2	Ente	r Employee ID	Credentials can be entered	As expected
3	P		Display Details Of Employee ID 1 and check the condition which it fulfills and a message is displayed as" BONUS ADDED SUCCESSFULLY!!"	As expected

Table.No.7.35 Testing 35

Test case ID: 36		Test Case Description: allocated he gets 3% of	Calculate Bonus when an emplo his salary as bonus.	oyee is not
Prerequisite	s:		Test case (Pass/Fail): Pass	
Test Data:	Test Data:		ID:1	
Step No.		Step details	Expected Result	Actual Result
1	Navi	gate to Calculate Bonus	Calculate Bonus screen should be opened	As expected
2	Ente	Employee ID	Credentials can be entered	As expected

3	Verify if Employee has not	Display Details Of	As expected
	been allocated done if calculate	Employee ID 1 and check	
	accordingly	the condition which it	
		fulfills and a message is	
		displayed as" BONUS	
		ADDED	
		SUCCESSFULLY!!"	

Table.No.7.36 Testing 36

Test case ID	Test Case Description	ı: View Project		
Prerequisite	es:	Test case (Pass/Fail): Pass ID:1		
Test Data:				
Step No.	Step details	Expected Result	Actual Result	
1	Navigate to Login page	Login screen should be opened	As expected	
2	Enter ID	Credentials can be entered	As expected	
3	Press Enter Key	Employee can view Project	As expected	

Table.No.7.37 Testing 37

Test case ID: 38		Test Case Description	: View Status	
Prerequisites	s:		Test case (Pass/Fail): Pass	
Test Data:			ID:1	
Step No.		Step details	Expected Result	Actual Result
1	Navi	gate to Login page	Login screen should be opened	As expected
2	Ente	r ID	Credentials can be entered	As expected
3	Pres	s Enter Key	Employee can view Status	As expected

Table.No.7.38 Testing 38

Test case ID: 39	Test Case Description: Vio	Test Case Description: View History	
Prerequisites:		Test case (Pass/Fail): Pass	

Test Data:		ID:1	
Step No.	Step details	Expected Result	Actual Result
1	Navigate to Login page	Login screen should be opened	As expected
2	Enter ID	Credentials can be entered	As expected
3	Press Enter Key	Employee can view History	As expected

Table.No.7.39 Testing 39

Test case ID) : 40	Test Case Description	: View Bonus		
Prerequisite	es:		Test case (Pass/Fail): Pass ID:1		
Test Data:					
Step No.		Step details	Expected Result	Actual Result	
1	Navi	gate to Login page	Login screen should be opened	As expected	
2	Ente	r ID	Credentials can be entered	As expected	
3	Pres	s Enter Key	Employee can view Bonus	As expected	

Table.No.7.40 Testing 40

8. CONCLUSION

The employee-project management system has been developed to manage project details {project id, project name, start date, end date, no of resources required, no of resources allocated, project status} and employee details {emp id, emp name, emp status, gender, basic salary, bonus, project details}. It is now easy for the administrator as well as the employee to access his/her project details more efficiently. Through this novel app, we tried to make project management time efficient and handy.

Through the project allocation, deallocation and close project options the administrator, employees and clients will be able to grab a better understanding of the projects. The global accessibility of the project management app is truly promising.