MMSE project

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1 Introduction

To develop a system with basic functionalities for SEP using extreme programming approach.

Basic functionalities are:

1. Workflow of event requests (event initiation and application).
2. Workflow of tasks distribution to services/production departments. (choose one sub-team from each department).
3. Staff recruitment management.
4. Financial requests management.

Client management, reports management, the employees'records, scheduling issues, salaries, Notifications and other parts of the problem are not required for the project.

2 User stories

2.1 Initial approval

Initial approval include event initiation and application – From Customer Service to Senior Customer Services manager to Financial Manager to Administration Department Manager to Senior Customer Services manager.

User stories	Description	Logic TE	GUI TE	Value	Risk
Login	All the employees of SEP should be able to enter their user name, password on the screen. Once the credentials are verified, they should be able to access the authorizes functionalities.	1 hr	1 hr	H	L
Password hashing	In order to avoid security breach, the passwords should be hashed and encrypted.	3 hr	0 hr	H	H
Log out	All the employees of SEP Log out of their accounts	45 min	30 min	H	L
New account	Management should be able to create an account for new employee with his/her details and role in the company.	1 hr	1 hr	H	L
Forgot Password	If any employee forgets password, there should be an option on the login screen to send reset password token and reset the password.	3 hr	1 hr	M	H
Profile settings page	Once the employee registers or logins, his/ her details should be displayed in this page and there should be an option to edit the details.	2 hr	2 hr	M	M
Change Password	In the profile settings page, an option to change password should be given.	3 hr	1 hr	L	H
Client registration	Customer services team should be able to register a new client by entering all the required details in the form.	1 hr	45 min	H	L
Registered client	If a customer is already registered, the system should say customer already exists by verifying the personnumber.	2 hr	90 min	L	M

New event request	Customer services team should be able to Initiate new event planning request, by entering the following details - event type(conference, workshop ...etc), start and finish date, preferences such as decorations, filming, food, beverages ... etc.	1 hr	45 min	H	L
Redirect New event requests to Senior officer	Once the new event request is initiated and all the required details are entered, Customer service officer needs to Redirect requests to the senior customer service officer.	30 min	15 min	H	L
Receive new event requests	Senior Customer Service Officer should be able to Receive events requests in the work items list.	30 min	1 hr	H	L
Authorization	Only authorized users should be able to do the tasks. Example - Only Financial manager should be able to write the budget review but not anyone else.	3 hr	1 hr	H	H
Update new event requests	Senior Customer Service Officer should be able to Update new events requests with the status and required changes like budget or any other in the event	1 hr	90 min	M	M
View events requests	Senior Customer Service Officer should be able to View events requests.	30 min	1 hr	H	L
Search events requests	Senior Customer Service Officer should be able to search events requests.	1 hr	45 min	M	M
Reject new event request	In the initial stage, Senior customer service officer can decide to reject a request.	45min	30 min	H	L
Redirect new event request to Financial manager	Senior customer service officer once decides to approve the event, he redirects the request to Financial manager for budget review.	15 min	15 min	H	L
Budget Feedback	Financial manager receives the request from Senior customer service officer, writes his feedback based on the estimated budget by the client and updates the event request.	15 min	45 min	H	L

Redirect new request to Administration department manager	Once Financial manager updates the request with the budget review, he redirects it to the Administration department manager.	15 min	15 min	H	L
Receive/Update event-planning requests admin.	Administration department manager receives request from financial manager, decides whether to approve or reject it based on the financial manager's feedback and his expectation. He updates the request with his decision.	30 min	45 min	H	L

2.2 Task allocation to sub teams

Workflow of tasks distribution to services/production departments. (choose one sub-team from each department) – Services manager/Production Manager to Sub-team, Sub-team to Services manager/Production manager.

User stories	Description	Logic TE	GUI TE	Value	Risk
Receive/Update event-planning requests	SM/PM receive and update event requests	15 min	30 min	H	L
Initiate task for each sub team	SM/PM Initiate task for each sub-team (decorations, filming, audio ... etc) they fill application with the client needs from his department, and sends tasks to each sub-team..	30 min	1 hr	H	L
Receive/ View tasks	All sub teams should be able to receive and view the tasks and details of the tasks related to their department.	40 min	1 hr	H	L
Edit tasks	Each sub-team edits the task by filling an expected plan.	1 hr	2 hr	M	M
Add comments	If the sub-team needs extra budget or extra material, they add the reason and required budget/ material.	2 hr	1 hr	M	H
Send to manager	Once the tasks are edited and comments are added (if necessary), the sub-team sends this to respective manager.	20 min	30 min	M	L

2.3 Staff recruitment

Staff recruitment management. SM/PM to HR, HR to SM/PM. SM/PM check the availability of the production department staff. In case there are any scheduling conflicts or resources shortage, he initiates a request to the HR team asking for additional resources.This issue might be solved by staff recruitment if there is a need for long term employee or outsourcing depending on the organization's needs.

User stories	Description	Logic TE	GUI TE	Value	Risk
View staff schedules and assignments	SM/PM view the staff schedules and assignments of their respective departments.	45 min	30 min	M	H
Search staff schedules and assignments	SM/PM search for the staff schedules and assignments of their respective departments.	1 hr	1 hr	L	H
Highlight conflicts	If there are any conflicts in the staff schedule, they should be highlighted.	2 hr	1 hr	L	H
Recruitment request	In case of any shortage of resources or staff conflict, SM/PM sends recruitment request to HR manager.	1 hr	1 hr	H	L
Receive recruitment request	HR team receive recruitment request from SM/PM.	1 hr	45 min	H	L
Create job advertisement	HR Assistant creates an advertisement for the requested role by filling in all the required details like job role, experience, salary... etc.	1 hr	1 hr	H	M
Publish job advertisement	Once the advertisement is created, it is published on the career portal of SEP.	1 hr	2 hr	H	M
Send Recruited employee details	HR send the details of the new employee to the requested department manager SM/PM.	1 hr	30 min	H	L

2.4 Financial requests management

Financial requests management. SM/PM to FM, FM to SM/PM. When the sub-team requests for extra budget, SM/PM review the request and redirect it to Financial manager.

User stories	Description	Logic TE	GUI TE	Value	Risk
Create Extra budget request	SM/PM creates extra budget request by filling in the required budget and reason.	30 min	45 min	H	L
Redirect Extra budget request	After filling in all the required details, the request is redirected to Financial manager.	30 min	15 min	H	L
Review Extra budget request	On receiving extra budget request from SM/PM, Financial manager approves or rejects the request.	30 min	30 min	H	L
Update budget	If the extra budget request is approved, the budget in event request also should be updated.	45 min	15 min	H	M

3 Release planning

	High value	Medium value	Low value
Low risk	21	1	0
Medium risk	3	4	1
High risk	2	3	3

For the first release we will be mainly focusing on High value and Low risk user stories. For a basic functioning system it is planned to implement the following:

1. Login
2. log out
3. New Account
4. New event request
5. Receive new event requests
6. View events requests
7. Reject new event request
8. Redirect new event request to Financial manager
9. Budget Feedback
10. Receive/Update event-planning requests admin.
11. Receive/Update event planning requests
12. Initiate task for each sub team
13. Receive/ View tasks
14. Recruitment request
15. Receive recruitment request
16. Create Extra budget request
17. Redirect Extra budget request
18. Review Extra budget request
19. Update budget

4 Iteration planning

4.1 Iteration 1:

1. Login
2. log out
3. New Account
4. New event request
5. Receive new event requests
6. View events requests

4.2 Iteration 2:

1. Reject new event request
2. Redirect new event request to Financial manager
3. Budget Feedback
4. Receive/Update event-planning requests admin.
5. Receive/Update event planning requests

4.3 Iteration 3:

1. Initiate task for each sub team
2. Receive/ View tasks
3. Recruitment request
4. Receive recruitment request

4.4 Iteration 4:

1. Create Extra budget request
2. Redirect Extra budget request
3. Review Extra budget request
4. Update budget

5 Metaphor

5.1 metaphor 1: Messenger Pigeons

Two people communicating using messenger pigeons.

Metaphor	System
pigeon	System for sending documents to other employees.
letter	the document being sent, which could be client request details, budget review etc.
letter's sender	the employee sending the document.
letter's recipient	the employee receiving the document

5.2 metaphor 2: Pocket money

A child asking mother for more pocket money to buy a doll. The mother also needs to convince the father that the child needs the doll.

Metaphor	System
child	production or service managers
doll	extra budget
mother	financial department
father	the client

5.3 metaphor 3: Running out of paint

A painter running out of a type of paint and asking his assistant to buy some. The assistant writes a request to paint factory which may sell them some

Metaphor	System
paint	staff member
painter	production or service managers
assistant	HR department
request to factory	job advertisement
paint factory	the labor market

6 Description of your test-driven pair programming process and applied refactoring. Also describe how well you managed to estimate what should be done in each iteration

In this project we have written multiple http requests using express framework for the purpose of setting up the tests, after which we would implement functionalities that would pass the tests.

In the first iteration we implemented functionalities for logging in and logging out as well as setting up new user accounts. Afterwards we refactored the code to be more clear and readable. Next we added functionality to create a new event request as well as to receive and view event requests. This step was also followed by refactoring and then we further organized code within this iteration. We had estimated for this iteration to take 4 hours and 45 minutes however it took around 5 hours and 30 minutes.

In the second iteration we implemented functionalities for rejecting new event requests and redirecting events to financial manager. Afterwards we implemented functions for writing budget feedback and for receiving or updating the event planning requests as is required. There was little optimization or improvement required so the refactoring sessions were once again mainly cosmetic. The total process was estimated to take approximately 2 hours but it took around 3.

In the third iteration we covered initiation of tasks for the sub-teams, receiving / viewing tasks, as well as creation and reception of requests for recruiting new employees. We refactored the code by making it more readable and then better organized the files. Afterwards we changed some of the data types replacing strings with enumerations. The process was estimated to take 2 hours 30 minutes and the estimate was roughly correct.

In the fourth iteration we covered the creation of the extra budget request for on-field managers, redirection of extra budget request, review of said request as well as a function for updating the budget of the event. The refactoring once again consisted of making code more readable and organizing the architectural structure of the program. This iteration was estimated to take 2 hours and 15 minutes but it took closer to 2 hours and 45 minutes.

7 Tests

Test case Name	Adding a new employee
Expected Actions	1. Navigate to page for adding new employee 2. Enter First name: "Testing" 3. Enter Last name: "Testing" 4. Enter email: "Test1@gmail.com" 5. Enter password: "12345678" 6. Click enter
Expected Results	new user added to the system
Test Results	successful

Test case Name	Adding a new employee with duplicate email
Expected Actions	1. Navigate to page for adding new employee 2. Enter First name: "Testing" 3. Enter Last name: "Testing" 4. Enter email: "Test1@gmail.com" 5. Enter password: "12345678" 6. Click enter
Expected Results	The system does not allow registration
Test Results	successful

Test case Name	Login
Expected Actions	1. Navigate to login page 2. Enter email: "Test1@gmail.com" 3. Enter password: "12345678" 4. Click enter
Expected Results	The user logged into the system
Test Results	successful

Test case Name	Create client request
Expected Actions	1. Navigate to new event form 2. Enter record Number:5, 3. Enter client Name:"Diana", 4. Enter event type:"Birthday", 5. Enter description:"50th birthday", 6. Enter expected number Of attendees:20, 7. Enter planned Budget:5000, 8. Enter from:"2022-12-15T18:21:33.193Z", 9. Enter to:"2022-12-16T18:21:33.193Z", 10. Enter decorations:"Flower", 11. Enter parties:"NA", 12. Enter Photos Or Filming:"Candid", 13. Enter food":"Soft food", 14. Enter drinks:"NA", 15. Enter computer Related Issues:"NA" 16. Click enter
Expected Results	Created a client request with specified attributes and sent to sr. customer service manager
Test Results	successful

Test case Name	Add Financial Request
Expected Actions	1. Navigate to new financial request page 2. Enter Requesting Department:"Services", 3. Enter project Reference:"b2345", 4. Enter required Amount:1250, 5. Enter reason:"Huge increase in the prices due to inflation." 6. Click enter
Expected Results	A new financial request created and sent to financial manager.
Test Results	successful

8 Report of daily stand up meetings

Meeting date	13/10/2022
Meeting notes	• Deciding which resources to use for building the project. • Scheduling following meetings and evaluating how much time to dedicate to project each day.
Extra comments	There was a major issue of incompatibility between partners, as Nikoloz knows c/c++, while Reethika is proficient in node.js. It was decided to use node.js as it was better suited for such projects. This resulted in Nikoloz being less effective while working on the project.

Meeting date	14/10/2022
Meeting notes	• we began by creating the basic skeleton of the app in node.js. • Afterwards we brainstormed and wrote a number of user stories. • We filtered the user stories and only kept the most appropriate ones. • We went through the stories and estimated how long it would take to implement them, as well as how high their value and risk factors were. • We further discussed which of the following stories to include in our first release.
Extra comments	Nothing notable happened.

Meeting date	15/10/2022
Meeting notes	• We discussed how to split the release into multiple iterations. • We started working on iteration 1 and finished approximately one half of it.
Extra comments	We used the pair programming method which was not very effective due to large gap in experience with the framework, while it did help the individual's efficiency increase, it would have been more effective to work individually (We kept using agile methods still). This issue would remain for our other meetings as well.

Meeting date	17/10/2022
Meeting notes	• We finished iteration 1 • We began trying to come up with metaphors
Extra comments	Coming up with metaphors ended up being more difficult than expected.
Meeting date	18/10/2022
Meeting notes	• We finished iteration 2 • We finished making metaphors
Extra comments	At this point we decided to speed up so we would have more time for the exam preparations. We decided to finish everything on the next meeting.
Meeting date	19/10/2022
Meeting notes	• We finished iteration 3. • We finished iteration 4. • We wrote all the reports for the project.
Extra comments	This was the longest meeting prompted by our wish to get the project out of the way and focus on the exam preparation.

9 Comparison between this approach and the object oriented analysis and design approach – your feedback

The project made it clear how powerful agile approach is for programming. However as the agile approach is supposed to be focused on people, and in our specific case the people were not very compatible the effect of the agile approach was sub-optimal. Pair programming in particular appeared to be rather draining and made the coding process less pleasant without sufficient improvement to justify the means. The issue might be our skill level.

Overall object oriented analysis is more effective for managing really large teams for large and long term projects with clear goals, while agile is much more flexible and holds potential to be much more effective, at the cost of great limitations.

10 Extra Effort

For extra effort we decided to provide a proper GUI instead of simple console user interface.