KTH

MODERN METHODS IN SOFTWARE ENGINEERING

(ID2207)

HOMEWORK 2

GROUP 6

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SEP Internal System Problem Statement

Problem Glossary:

The newly established company SEP organizes business events for clients; they are responsible for all the details according to customers' requests.

The system needs to generate forms to fill information so that the communication between customers and company, or the company members could be highly efficient. Also, the system should provide protected access entrances for internal members.

Currently, the events holding organization is a face-to-face communication mechanism, which is thought to be low efficient. It is hard for the renegotiation and resource request during the preparation stage, so the online working system is important.

Roles Definitions

Client	People who want to get support and service from SEP.
Interviewee	People who want to get a job in SEP.
Administration Department Manager	Person in charge of the administration department, which contains the HR sub-department, customer service sub-department, and marketing sub-department.
Senior HR Manager	The person who is in charge of the HR sub-department and attends interviews.
HR Assistant	People who work in the HR sub-department and arrange interviews.
Senior Customer Service	The person who is in charge of the customer service sub-department and reviews applications.
Customer Service	People who collect requests from clients and send them to senior customer service.
Financial Manager	A person who is in charge of the financial sub-department and negotiates budget with clients.
Production Manager	The person who is in charge of the production department proposes the shortage in human resources and budget.
Photographer	People who are responsible for the photos and films of the activities.
Audio Specialist	People who are responsible for the music-related problems of the activities.

Graphic Designer	People who are responsible for the posters and other related problems of the activities.
Decorating Architect/Decorating Specialist/Assistant	People who are responsible for the decorations.
Network Engineering/Technician	People who are responsible for computer-related issues.
Services Department Manager	Person who is in charge of the services department, proposes the shortage in human resources and budget.
Top Chef/Chef	People who are responsible for food and beverages.
Senior Waitress/Waiter/Waitress	People who are responsible for service during activities.
Activity Manager	A generalization of Production Manager and Services Department Manager.
Production Sub-team	It includes photography, music, graphic design, decorations and network support-related people.
Services Sub-team	It includes food, beverages and activity service-related people.
Sub-team	A generalization of Production Sub-team and Services Sub-team.

Definition of Use cases & Special Concepts:

Process New Request System	This is the system that enables SEP to deal with the new request from a client.
Contact the customer service team	It is the operation that the clients do, they contact the company for holding events when they need it.
Arrange a meeting	It is an operation that includes both client and the Senior customer service when they need to discuss the details of events after approval.
Check schedule	Clients and Senior customer servicer check their schedule
Senior customer service review request	The Senior customer service manager checks the requested event details from the customer service.
Initiate a request form	The customer servicer initiates a request form when receiving information from the client.
Enter Request	The customer servicer enters the information in the form.

Send to Senior customer service	The customer service sends the form to the Senior customer service.
Senior customer service review request	The Senior customer servicer checks the requested event details from the customer service.
Check feasibility	The Senior customer servicer checks the feasibility of the plan based on his/her knowledge.
Decide on the Request	The Senior customer servicer makes the decision of the event on his/her own.
Send to Financial manager	The request of holding the event is approved by the Senior customer service and the request is sent to the Financial manager
Financial Manager Review Request	The financial manager checks the budget and writes his/her opinion
Send to Administration manager	The financial manager sends his/her opinion to the Administration manager.
The Administration manager review the request	The Administration manager receives the request sent by the financial manager and checks the feasibility of the whole project.
Check the Financial manager's opinion	The Administration manager makes the decision based on the Financial manager's report
Check his/her own expectation	The Administration manager makes the decision based on his/her experience.
Finalize request	The Administration manager comes up with the final decision of the request.
Send back to Senior customer service	The Administration manager sends the final decision to the Senior customer service.
Retrieve final decision	The Senior customer service retrieves the final decision from the Administration Manager.
Contact client	The Senior customer service can contact the client if he/she rejects the project or when he/she receives the final decision from the Administration manager.

Check and Request Human Resources System	This is the system that processes an access request from the activity manager to check the human resources.
Check availability	The activity manager checks the availability of their team members.

Check schedule	The activity manager checks the existence of schedule conflicts of their team members.
Schedule conflict or human resource shortage	The extension situation shows when the extra people are in need.
Request human resources	The activity managers ask for more human resources from the HR department
Advertise for recruitment	The HR assistant publishes they have job vacancies.
Arrange an interview	The HR assistant arranges an interview for the interviewers and the HR manager
Check senior HR manager schedule	The HR assistant checks the availability of the HR manager.
Contact HR assistant	The interviewee contacts the HR assistant.
Evaluate Performance	The HR manager evaluates the interviewee's performance and decides to hire him/her (or not).
Inform interviewee	The HR manager sends the result to the interviewee.
Inform activity manager	The HR manager sends the result to the activity manager if the interviewee is hired.

Negotiate Budget System	This is the system that is accessed when an extra budget is needed.
Propose a budget negotiation request	The Activity manager proposes a request to the Financial manager to negotiate budget
Review request	The Financial manager reviews the request proposed by the Activity manager.
Contact client	The Financial manager contact the client for negotiating budget
Arrange budget negotiation meeting	The Financial manager arranges the meeting to negotiate the budget with the customer
Finalize the budget	The Financial manager and client make a final budget based on the activity manager's request.
Inform Activity manager	The Financial manager informs the final budget to the Activity manager.

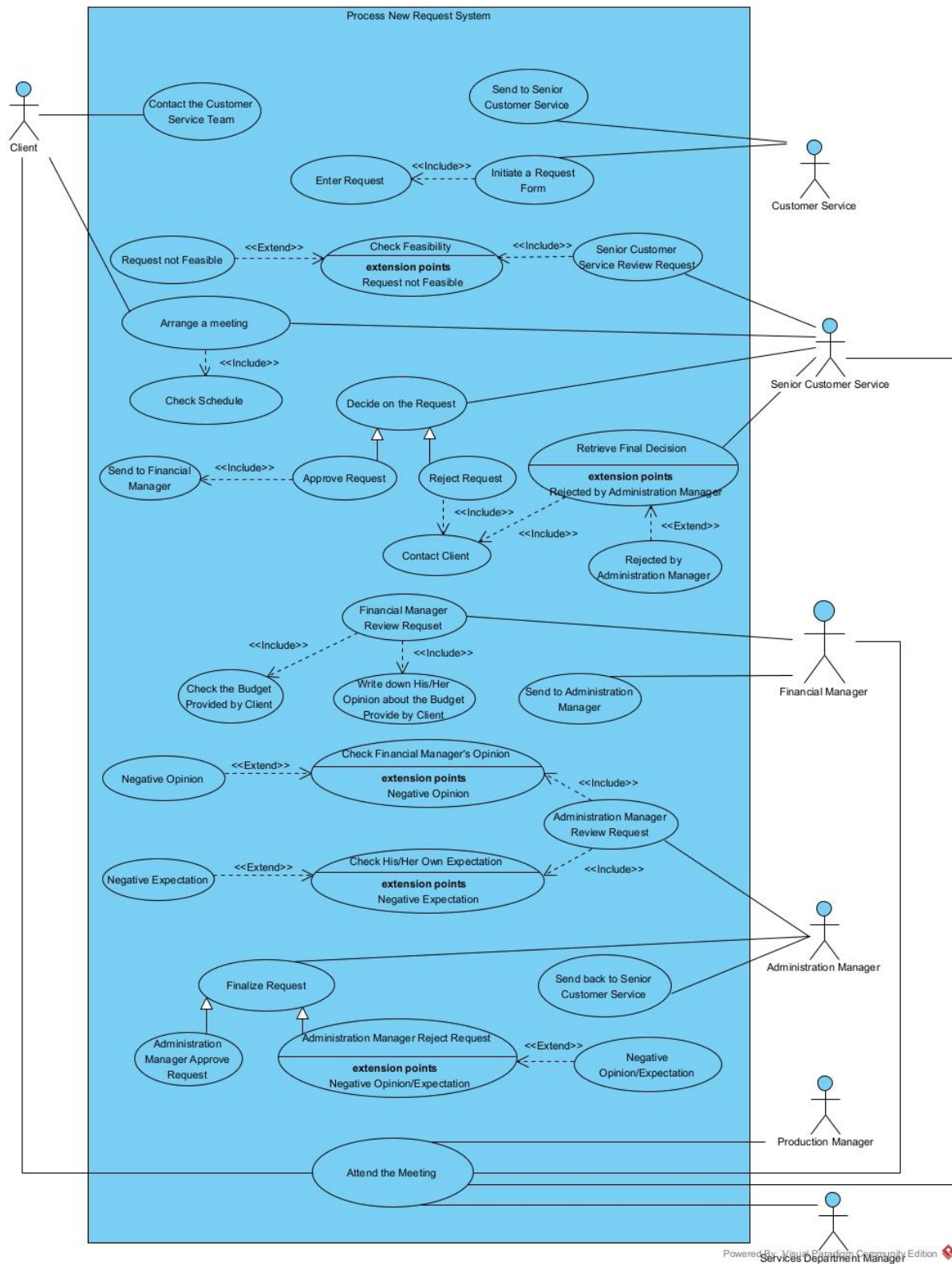|	
Allocate Tasks and Plan Activity System	This is the system that is accessed when preparing an activity.
Login	The activity for system users to login.
Check human resources	The activity manager checks the human resources on the system. It includes the use case 'Check and request human resources'.
Fill application form	The Activity manager fills the activity form based on the request that the client proposes.
Send form	The user chooses to send a form to another receiver.
Fill the form with the plan	The Subteams fill their form with detailed plans about the part they play in the activity.
Make comments	The Subteams can add comments if they need an extra budget.
Check the comment	The Activity manager checks the comment that is submitted by their team members, this extends to the use case 'Negotiate budget'.
Add advice	The Activity manager can add advice to the plan their team made based on their knowledge.
Resend the form	The Activity manager can send the form back to members once the budget is settled and they have made the suggestion.
Make final version	The team members have come up with a final version of their activity and are ready to implement the event.
Hold the events	The event was successfully held.
System status change	The activity can have three statuses while it is implemented including 'Open', 'In progress', and 'Closed and archived'. The status of activity changes once a certain operation is being made.

Scenario: New Request Processing

Scenario name	New Request Processing
Participating actor instances	Client: Bob Customer Service: Sarah Senior Customer Service: Janet Financial Manager: Alice Administration Manager: Mike Production Manager: Jack Services Department Manager: Natalie
Flow of events	1. Client Bob, who wants to organize a wedding ceremony for himself, calls SEP Customer Service Sarah. Bob gives the detail he wants for the ceremony and provides the budget. 2. Sarah initiates a request form and enters the information in the form. 3. Sarah sends the form to Janet. 4. Janet receives the form and checks the form, she chooses not to reject it. 5. Janet sends the form to Alice. 6. Alice reviews the form and writes down her opinion about the budget Bob provides. She thinks this time the budget is just appropriate. 7. Alice sends her opinion and request form to Mike. 8. Mike approves the request based on Alice's opinions and his own expectations. 9. Mike sends the result to Janet. 10. Janet receives the approval and contacts the client. 11. Janet discussed with the customer and made an appointment for next Monday. 12. All the required members such as Jack, Alice, Natalie, Janet, and the client attend the meeting.

Use case: Process New Request

Name	Process New Request
Participating Actor(s)	Client (Initiator) Customer Service Senior Customer Service Financial Manager Administration Manager Production Manager Services Department Manager
Entry Conditions	The client has contacted the customer service team. This use case extends "Request not Feasible", "Rejected by

	Administration Manager", "Negative Opinion", "Negative Expectation", and "Negative Opinion/Exception". They are initiated when the senior customer service thinks the request is not feasible, when the request is rejected by the administration manager, when the financial manager gives a negative opinion about the budget provided by the client, when the administration manager has negative expectations, or when there is at least one negative opinion or expectation about the request.
Exit Conditions	1. Senior customer service rejects the request, and the client gets informed of the rejection. 2. Or the administration manager rejects the request, and the client gets informed of the rejection. 3. Or the client, production manager, financial manager, senior customer service, and services department manager attend the business meeting and a general decision is made.
Quality Conditions	The system should be available and functioning without unexpected interruptions.
Event Flow	1. The client contacts the customer service with his/her request. 2. The customer service initiates a request form. 3. The system displays a blank request form. 4. The customer service enters the request in a form. 5. The customer service chooses to send the form to the senior customer service officer. 6. The system displays the request form to the senior customer service officer. 7. The senior customer service officer reviews the request form. 8. The senior customer service officer chooses either to approve or reject the request based on its feasibility. 9. If the request is rejected by the senior customer service officer, he/she contacts the client to inform them of the rejection. 10. If the request is approved by the senior customer service officer, he/she chooses to send the request form to the financial manager. 11. The system displays the request form to the financial manager. 12. The financial manager reviews the request form and writes down the opinion of the estimated budget provided by the client on the request form. 13. The financial manager sends the request form to the administration manager. 14. The system displays the request form to the administration manager. 15. The administration manager chooses either to approve or reject the request based on the financial manager's feedback and his/her expectation. 16. The administration manager sends the request form back to the senior customer service officer. 17. If the request is rejected, the senior customer service officer

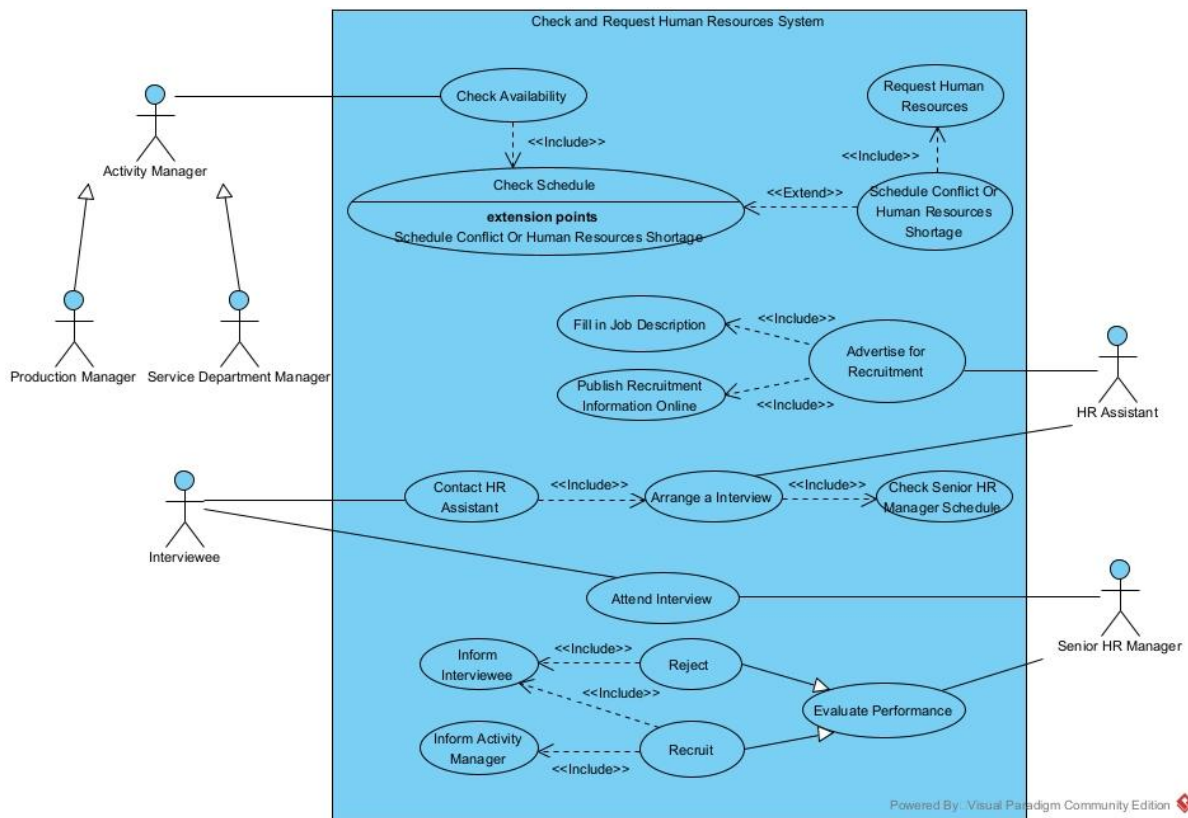|	contacts the client to inform him/her of the rejection.
	18. If the request is approved, the senior customer service officer contacts the client to organize a meeting, where the schedule of participants is checked.
	19. The client, production manager, financial manager, senior customer service, and services department manager attend the business meeting to make a general decision.

Process New Request System

Client

- Contact the Customer Service Team
- Arrange a meeting

Customer Service

- Send to Senior Customer Service
- Enter Request
- Initiate a Request Form `<<Include>>`

- Request not Feasible `<<Extend>>`
- Check Feasibility
  - **extension points**
  - Request not Feasible
- Senior Customer Service Review Request `<<Include>>`

- Check Schedule `<<Include>>`
- Decide on the Request

- Send to Financial Manager `<<Include>>`
- Approve Request
- Reject Request
- Retrieve Final Decision
  - **extension points**
  - Rejected by Administration Manager
- Contact Client `<<Include>>`
- Rejected by Administration Manager `<<Extend>>`

Senior Customer Service

Financial Manager Review Requset

- Check the Budget Provided by Client `<<Include>>`
- Write down His/Her Opinion about the Budget Provide by Client `<<Include>>`
- Send to Administration Manager

Financial Manager

- Negative Opinion `<<Extend>>`
- Check Financial Manager's Opinion
  - **extension points**
  - Negative Opinion
- Administration Manager Review Request `<<Include>>`

- Negative Expectation `<<Extend>>`
- Check His/Her Own Expectation
  - **extension points**
  - Negative Expectation
- `<<Include>>`

Administration Manager

- Finalize Request
- Send back to Senior Customer Service
- Administration Manager Approve Request
- Administration Manager Reject Request
  - **extension points**
  - Negative Opinion/Expectation
- Negative Opinion/Expectation `<<Extend>>`

Production Manager

- Attend the Meeting

Services Department Manager

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Scenario: Human Resources Check and Request

Scenario name	Human Resources Check and Request
Participating actor instances	Production Manager: Jack Service Department Manager: Natalie Senior HR Manager: Simon HR Assistant: Maria Interviewee: William
Flow of events	1. Jack checks the available resources based on the meeting results. 2. Natalie checks the needed resources for this event and finds out nothing to request, so she quits the system directly. 3. Jack finds out there are job vacancies for the current task and requests resources from Maria. 4. Maria publishes the recruitment information online. 5. Interviewee William contacts Maria. 6. Maria arranges an interview for Simon and William at the proper time. 7. Simon decided to recruit William. 8. The recruitment information is sent to William and Jack.

Use case: Check and Request Human Resources

Name	Check and Request Human Resources
Participating Actor(s)	Activity Managers (Including Production Manager and Service Department Manager) (Initiator) HR Assistant Senior HR Manager Interviewee
Entry Conditions	1. A general decision is made at the business meeting. 2. The activity manager checks the availability of staff. This use case extends "Schedule Conflict Or Human Resources Shortage". It is initiated when the activity manager finds that the staff schedule is in conflict, or the staff is insufficient.
Exit Conditions	1. The staff is enough. 2. Or the staff problem is solved.
Quality Conditions	The system should be available and functioning without unexpected interruptions.
Event Flow	1. The activity manager checks the availability of staff, where he/she finds the staff is either short or enough; 2. The system displays the schedule of each staff member. 3. If the staff is enough, the activity manager exits the system.

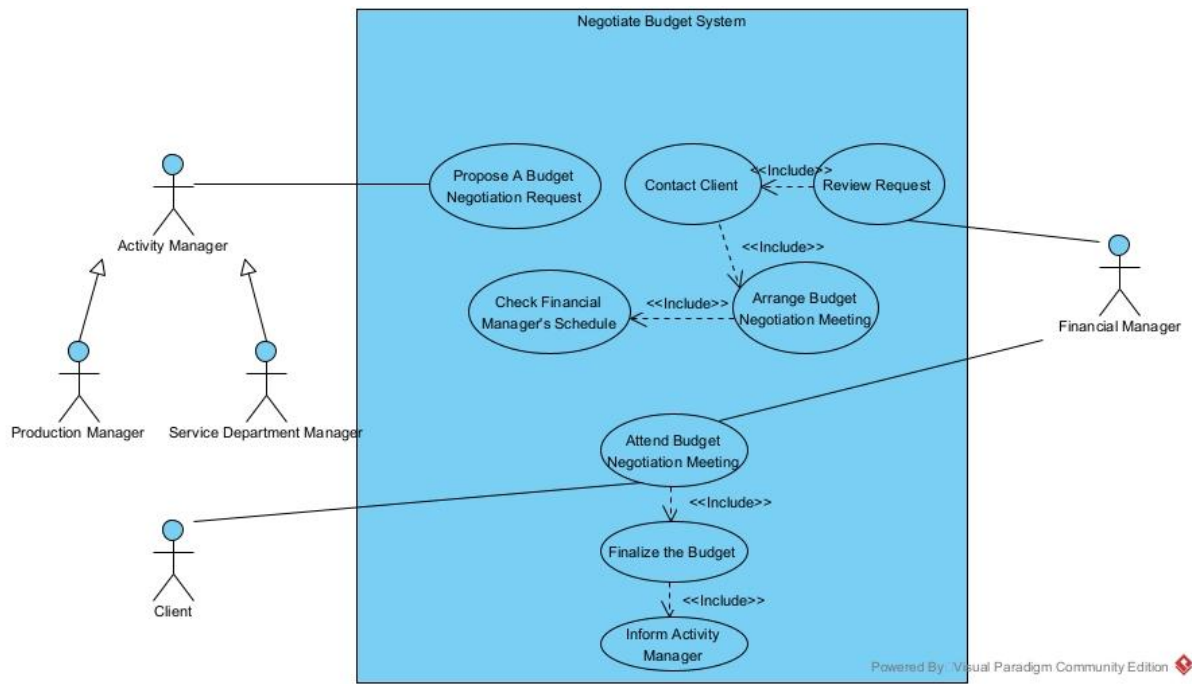|	4. If the staff is insufficient, the activity manager sends a request to the HR assistant for additional human resources. 5. The system displays the request to the HR assistant. 6. The HR assistant requests a recruitment table. 7. The system displays a blank table. 8. The HR assistant fills in the job description. 9. The HR assistant published it on the website. 10. Interviewee contacts the HR assistant. 11. The HR assistant arranges an interview, where the HR assistant checks the schedule of the senior HR manager 12. The Interviewee and senior HR manager attend the interview. 13. The senior manager evaluates the interviewee, where the result may either be rejected or recruited. 14. The rejection is sent to the interviewee and the recruitment is sent to both the interviewee and the activity manager.

Scenario: Request Extra Budget

Scenario name	Request Extra Budget
Participating actor instances	Production Manager: Jack Service Department Manager: Natalie Financial Manager: Alice Client: Bob
Flow of events	1. Jack and Natalie created a request to Alice and they are requesting for extra budget; 2. Alice received the requests and contacted the customer Bob directly; 3. Alice and Bob had a meeting on negotiating budget and reached a balance; 4. Alice inform the managers of settling the budget problem;

Use case: Negotiate Budget

| Name	Negotiate Budget
Participating Actor(s)	Activity Managers (Including Production Manager and Service Department Manager) (Initiator) Financial Manager Client
Entry Conditions	The activity manager gets comments about the shortage in budget and materials.
Exit Conditions	1. The budget problem has been solved. 2. The new budget is informed to the activity manager.
Quality Conditions	The system should be available and functioning without unexpected interruptions.
Event Flow	1. The activity manager proposes a budget negotiation request to the financial manager. 2. The system displays the request to the financial manager. 3. The financial manager reaches out to the client for a budget negotiation meeting, where he/she checks his/her schedule. 4. The client and financial manager attend the budget negotiation meeting. 5. The budget problems are solved. 6. The updated budget is informed to the activity manager.

Negotiate Budget System

Propose A Budget Negotiation Request

Contact Client

<<Include>>

Review Request

<<Include>>

Check Financial Manager's Schedule

<<Include>>

Arrange Budget Negotiation Meeting

Attend Budget Negotiation Meeting

<<Include>>

Finalize the Budget

<<Include>>

Inform Activity Manager

Activity Manager

Production Manager

Service Department Manager

Client

Financial Manager

Scenario: Task Allocation and Plan Activity

Scenario name	Task Allocation and Planning Activity
Participating actor instances	Production Manager: Jack Service Department Manager: Natalie Photographer: Tobias Photograher: Magdalena Audio Specialist: Antony Audio Specialist: Adam Decorating Architect: Magy Network Engineer: Christian Network Engineer: Nicolas Technician: Michael Technician: Robert Top Chef: Helen Senior Waitress: Kate
Flow of events	1. After the meeting, Jack and Natalie records the specific requirements from clients and start to assign tasks; 2. Jack and Natalie checks the availability of their department members (Tobias, Magdalena, Antony, Adam, Magy, Christian, Nicolas, Michael, Robert, Helen and Kate), if there is a shortage, an extension to the Require Human Resource will be activated; 3. The members are ready for this event; 4. Jack and Natalie assign the tasks through web forms; 5. The members receive the form and start to prepare for the events, at the same time, the status of the activity is set to Open online; 6. Everyone fills the expected plan form and makes comments on the online form; 7. After finishing modifying the online form by different members, it is available to Jack and Natalie; 8. Jack and Natalie review the form and check the comments; 9. If there is the extra budget needed, Jack and Natalie will open the extension to negotiate the budget; 10. The budget problems are solved and the status is set to In Progress; 11. Jack and Natalie make some suggestions based on the current situation; 12. The form is opened to the members again, they will modify their original plan relating to the advice provided; 13. The members make the final version of the schedule; 14. The activity for Bob is successfully held and the status of the activity is set to "Closed and Archived";

Use case: Allocate Tasks and Plan Activity

Name	Allocate Task and Plan Activity
Participating Actor(s)	Activity Managers (Including Production Manager and Service Department Manager) (Initiator) Sub-team (Including Production Sub-team and Service Sub-team)
Entry Conditions	1. The meeting with the client has been held successfully; 2. The activity managers login successfully. **Extend to use case Negotiate Budget when the extra budget is required**
Exit Conditions	The status of the application is set to "closed and archived".
Quality Conditions	The system should be available and functioning without unexpected interruptions.
Event Flow	1. The activity managers check the availability of the human resources. **(Include use case Check and Request Human Resources)** 2. The activity managers fill an application form for his/her own department. 3. The activity managers choose to send the form to corresponding sub-teams. 4. The system displays the form to the corresponding sub-team. 5. Sub-team fills the form with an expected plan, where the comments of shortage in budget or materials may be added. 6. The application status is updated with "Open". 7. The sub-team sends the form back to activity managers. 8. The activity manager reviews the comments; 9. The activity managers add advice to the form. 10. The activity manager chooses to re-send the form to the sub-team. 11. The status of Activity is set to "In Progress". 12. The system displays the information to the sub-team. 13. The sub-team makes modifications based on the advice. 14. The sub-team conducts the plan to finish the event. 15. After finishing the event, the status is updated with "Closed and Archived".
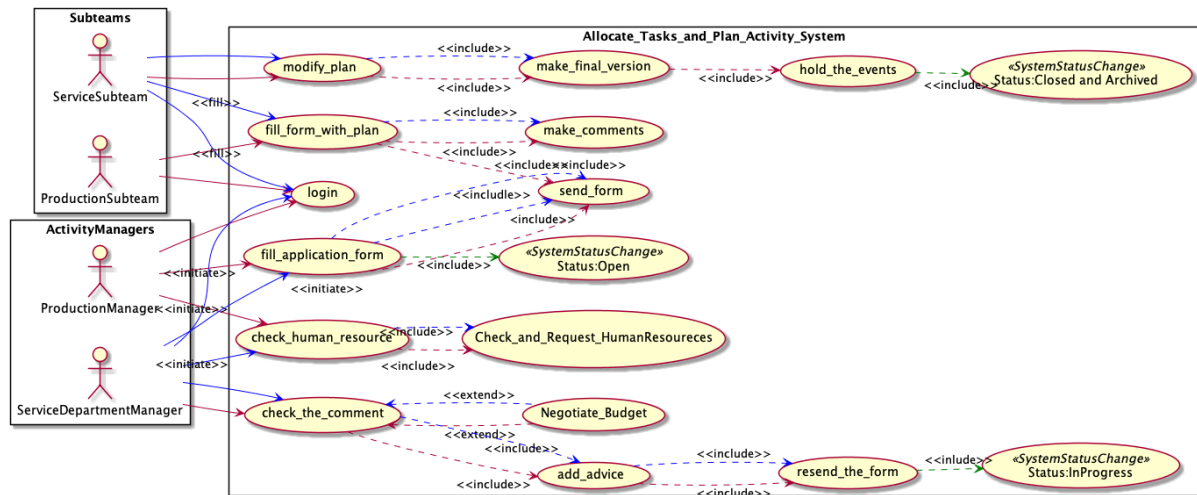
Non-Functional Requirements:
1. The history of clients should be recorded, the records should include details of the activity; the clients can be searched on the system so that the company can offer discounts for frequent clients;
2. The staff schedule can be arranged by their manager, and they can work in multiple works;
3. The events can be recorded specifically;
4. The system should record the dispatch of different members in the company;
5. The specific information of dispatching should be uploaded on the website so that the resources can be assigned properly and be allocated in time;
6. The view of the system to different roles should be different due to the difference in the functionalities they can access.