

Project Analysis

Project Management System

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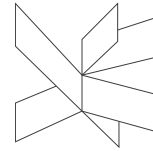
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Summary

ColorIT is a company that requires a system to manage and keep track of their projects, along with a website to give its clients access to project information. Prior to working on a specific project, normally using an iterative process and sometimes using a waterfall approach, they define a list of requirements and features that their end product should accomplish. The implementation of all of the requirements is realized by dividing them into small tasks that are assigned to specific team members, each task with a title, description, an estimated number of work hours and a fixed deadline.

The system will be designed in a manner capable of facilitating, accelerating and improving their current workflow. To achieve this result, it will contain several critical necessities, such as supporting the creation of multiple projects, each one with multiple requirements, and subsequently with multiple tasks that have titles, descriptions, time estimates and progress tracking capabilities, each part being editable, and assignable to any team member at any given moment. Another important key point of the system is the saving of all of the data, which will be accomplished by storing all of the information locally in a structured file format, not related to any databases.

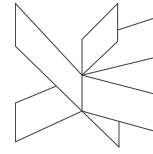
Regarding the website the system has to give the customers access to the information stored in the files mentioned in the previous paragraph, in an easy to navigate, good-looking and intuitive manner.

The end product will serve as a stable foundation for a management system, built in an accessible way so that it is easily upgradable with any presumably needed features in the future.

Functional requirements

Critical priority:

1. *As a Project Creator I want to be able to add new projects, edit their information and delete any of them if needed.*
2. *As a Project Owner I want to be able to add new requirements within any project, edit their information and delete any of them if needed.*
3. *As a Scrum Master I want to be able to add new tasks within any project, edit their information and delete any of them if needed.*
4. *As a Project Owner I want to be able to link or unlink any requirement to one or more tasks within the same project.*
5. *As a Project Owner I want to be able to link or unlink any task to one or more requirements within the same project.*
6. *As a Project Creator I want to be able to add new members, edit their information and delete any of them if needed.*
7. *As a Scrum Master I want to be able to assign any member to any number of tasks of any project.*



8. *As a Scrum Master I want to be able to assign special roles (Project Creator, Product Owner, Scrum Master) to any member within a project.*
9. *As a Product Owner I want each requirement to have a priority group ("Critical", "High" or "Low") so that we can keep track of the more important requirements that need to be developed.*
10. *As a Team Member I want to be able to edit the status of each one of the tasks, so that each task is set to either "Started" or "Finished".*
11. *As a Scrum Master I want each task to store the total amount of time any member has worked on it.*
12. *As a Team Member I want to be able to register my time worked on a specific task.*
13. *As a Scrum Master I want each task to input and store an estimated number work hours when creating it, so that we have basic perspective of the amount of time needed to develop it.*

High priority:

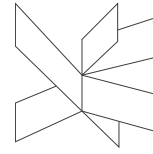
14. *As a Project Owner I want to be able to state of a requirement and mark it as approved or rejected.*
15. *As a Scrum Master I want to be able to search for all the projects that a specific member is working on.*
16. *As a Customer I want to have access to the information related to the project, so that I can keep track of the general status of the project.*

Low priority:

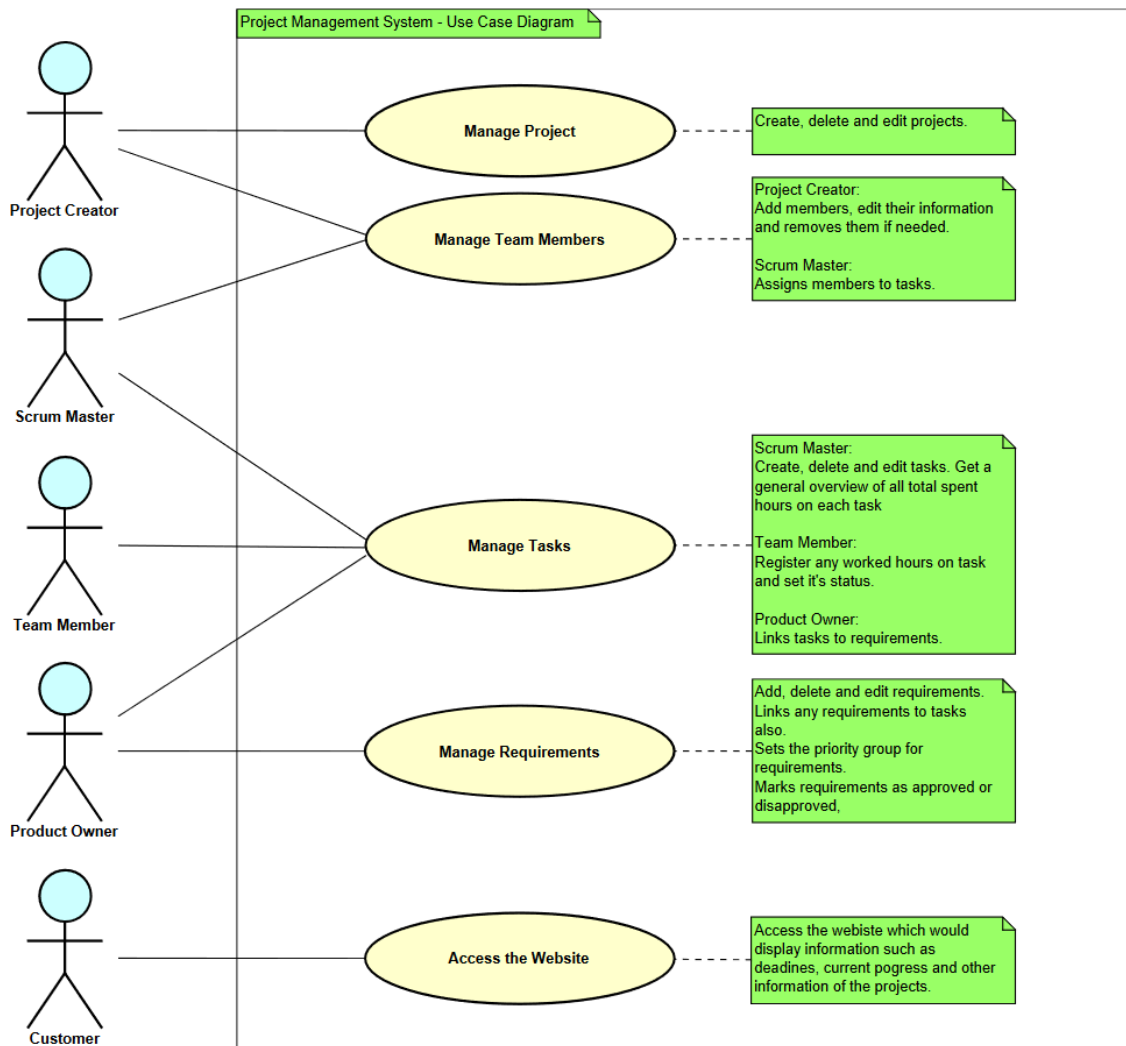
17. *As a Scrum Master I want each task to have descriptions, in order to have a general idea of what each task is about.*
18. *As a Costumer I want to be able to access the home page at any time so I do not get confused when navigating.*

Non-Functional Requirement

19. *As a Customer I want a manual explaining how the system works so that I won't have any issue understanding how the system functions.*
20. *As a Costumer I want the website to have a search feature.*

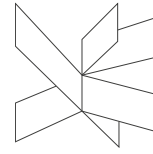


Use case diagram



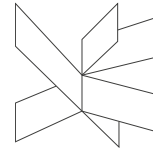
Use case descriptions

Use Cases:	Manage Project
Summary:	Create, edit or delete any project.
Actor:	Project Creator
Precondition:	
Postcondition:	A project has either been created, edited or removed from the system.
Base sequence:	CREATE: 1) If creating a new project enter the values: a) Title b) Description c) Deadline



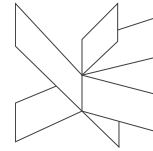
	<p>2) If there is another project in the system with the same title or the title is longer than 14 characters ask to input another title.</p> <p>3) If the deadline is in the past ask to input another deadline.</p> <p>4) Create new project</p> <p>End the use case for <u>CREATE</u></p> <p><u>EDIT:</u></p> <p>4) Enter the ID to choose project, or optionally enter the title or select by status to get a filtered list.</p> <p>5) Option to change any of the given values in step 1.</p> <p>End the use case for <u>EDIT</u></p> <p><u>DELETE:</u></p> <p>6) Select a project to delete.</p> <p>7) If the project has any assigned requirements or tasks display an error message.</p> <p>8) If the project does not have any assigned requirements or tasks delete the selected project.</p> <p>End the use case for <u>DELETE</u></p>
Exception sequence:	
Note:	This use case covers requirements 1.

Use Cases:	Manage Team Members
Summary:	Add members, edit team members information, remove them, assign them to tasks and assign special roles to members (Scrum Master, Product Owner, or Team Member).
Actor:	Project Creator, Scrum Master
Precondition:	The project has already been created in the system.
Postcondition:	Members were assigned roles (Scrum Master, Product Owner, or Team Member) in a project, added to a project, changed to another one or removed.
Base sequence:	<p><u>ADD:</u></p> <p>1) Enter the values for member:</p> <ul style="list-style-type: none"> a) First name b) Last name c) Email (Empty or in the format "user@host.domain") d) Birthday e) Phone number (Optional, must be a whole number) <p>2) System validates data and prompts for illegal values, if illegal repeat step 1 typing or editing input.</p> <p>End the use case for <u>ADD</u></p> <p><u>EDIT:</u></p>



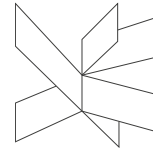
	<p>3) If editing a team member information, select one from the list or search by name.</p> <p>4) Display information about member</p> <p>5) Edit personal information by going to step 1.</p> <p>End the use case for <u>EDIT</u></p> <p><u>REMOVE:</u></p> <p>6) Select a member to remove.</p> <p>7) If member is assigned to any tasks display an error message.</p> <p>8) Remove member.</p> <p>End the use case for <u>REMOVE</u></p> <p><u>ASSIGNTASK:</u></p> <p>9) Select a member.</p> <p>10) Select a task to assign to.</p> <p>11) Check if member is not already assigned to that task.</p> <p>12) Member is assigned to that task.</p> <p>End the use case for <u>ASSIGNTASK</u></p> <p><u>ASSIGNROLE:</u></p> <p>13) Select a member.</p> <p>14) Select a project.</p> <p>15) Select a role.</p> <p>16) Check if that role in that project is not already assigned to another member and if that's the case ask user for confirmation to reassign the role.</p> <p>17) Member is assigned a new role in that project.</p> <p>End the use case for <u>ASSIGNROLE</u></p>
Exception sequence:	
Note:	This use case covers requirements 6.

Use Cases:	Manage Requirements
Summary:	Add, remove, edit requirements, change their priority and mark them as approved or rejected.
Actor:	Project Owner
Precondition:	To create a requirement a project that already exists must be specified.
Postcondition:	A requirement has either been created, removed or edited, has its priority changed or has been marked as "Approved" or "Rejected".
Base sequence:	<p><u>CREATE:</u></p> <p>1) If creating a new requirement, enter the following values:</p> <ul style="list-style-type: none"> a) Title b) Description (Optional) c) Deadline

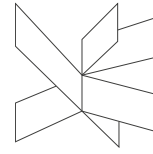


	<p>d) Priority group (A string in the format “Critical”, “High” or “Low”.</p> <p>2) If there is another requirement in the project with the same title or the title is longer than 14 characters ask to input another title.</p> <p>3) If the deadline is before today or after project’s deadline ask to input another deadline.</p> <p>4) If the priority group is an invalid value ask to input the group again.</p> <p>5) If input is valid then the system adds a new requirement with the given data to the project.</p> <p>End the use case for <u>CREATE</u></p> <p><u>EDIT</u></p> <p>6) Enter the values as described in step 1.</p> <p>7) Validate the data and update the requirement.</p> <p>End the use case for <u>EDIT</u></p> <p><u>REMOVE:</u></p> <p>8) System checks if the requirement is not linked to any on-going tasks or if it is empty and if that is the case the requirement is deleted, along with any finished linked tasks.</p> <p>End the use case for <u>REMOVE</u></p> <p><u>APPROVE:</u></p> <p>9) Click on the corresponding button to mark the requirement as “Approved” or “Rejected”.</p> <p>End the use case for <u>APPROVE</u></p> <p><u>LINKTASK:</u></p> <p>18) Select a requirement.</p> <p>19) Select a task to link to.</p> <p>20) Check if task is not already linked to that requirement.</p> <p>21) Task is linked to that requirement.</p> <p>End the use case for <u>LINKTASK</u></p>
Exception sequence:	
Note:	This use case covers requirements 2, 9, 14.

Use Cases:	Manage Tasks
Summary:	Add and show tasks information, edit task description and status and remove task.
Actor:	Scrum Master, Team Member
Precondition:	



Postcondition:	A new task has been added to the system and linked with a determined id to a specific requirement.
Base sequence:	<p><u>ADD:</u></p> <ol style="list-style-type: none"> 1) If adding a new task enter the following values: <ol style="list-style-type: none"> a) Task name b) Task description c) Estimated work hours d) Deadline 2) If the title is longer than 14 characters ask to input another title. 3) If the deadline is before today or after project's deadline ask to input another deadline. 4) If valid a new task is added to the list of tasks of a specific project. <p>End the use case for <u>ADD</u></p> <p><u>SHOW:</u></p> <ol style="list-style-type: none"> 5) Show a list with all the tasks with the name, description, id, priority and members assigned. 6) When a task is selected show the description, priority, members and id specific to the new selected task. 7) If remove step 11. <p>End the use case for <u>SHOW</u></p> <p><u>EDIT:</u></p> <ol style="list-style-type: none"> 8) Edit one or more of the values shown in step 1. 9) System verifies input, if wrong show the user what values need to be changed and go back to step 8. 10) System updates the new values given to a task in the task list. <p>End the use case for <u>EDIT</u></p> <p><u>REMOVE:</u></p> <ol style="list-style-type: none"> 11) Select task 12) If the task has any linked requirements or is has any assigned members show an error message. 13) If not remove that task. <p>End the use case for <u>REMOVE</u></p> <p><u>LINKREQUIREMENT</u></p> <ol style="list-style-type: none"> 14) Select a requirement. 15) Select a task to link to. 16) Check if requirement in not already linked to that task. 17) Requirement is linked to that task. <p>End the use case for <u>LINKREQUIREMENT</u></p>
Exception sequence:	



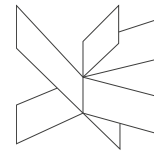
Note:	This use case covers requirements 3, 4, 5, 7, 8, 10, 11, 12, 13, 15, 17.
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Use Cases:	Access the Website
Summary:	Access the website that would display a summary of the projects.
Actor:	Customer
Precondition:	The project has to already be created in the single user system.
Postcondition:	Customer sees a summary of the progress done so far on his project.
Base sequence:	<p><u>SEARCH:</u></p> <ol style="list-style-type: none"> 1) Open the website. 2) Customer inputs the name of his project. 3) Go to step 4. <p>End the use case for <u>SEARCH</u></p> <p><u>VIEW:</u></p> <ol style="list-style-type: none"> 4) After a search is performed, a summary page of the progress on the searched project is displayed. <p>End the use case for <u>VIEW</u></p>
Exception sequence:	
Note:	This use case covers requirements 16, 18.

Relation between requirements and use cases

Use Case	Covered requirements
Manage Project	1
Manage Team Members	6
Manage Requirements	2, 9, 14
Manage Tasks	3, 4, 5, 7, 8, 10, 11, 12, 13, 15, 17
Access the Website	16, 18

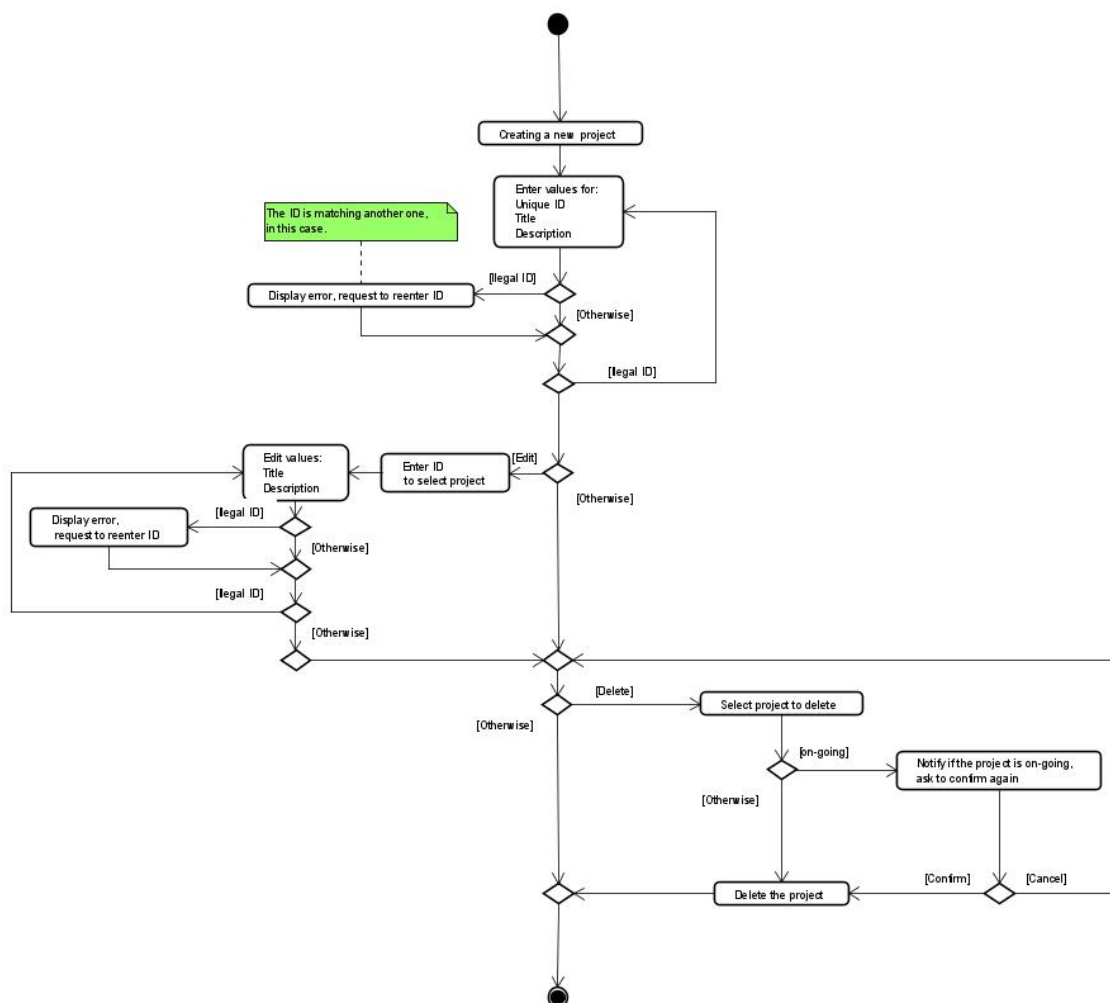
Requirement	Related use case
1	Manage Project
2	Manage Requirements
3	Manage Tasks
4	Manage Tasks
5	Manage Tasks
6	Manage Team Members
7	Manage Tasks
8	Manage Tasks
9	Manage Requirements
10	Manage Tasks

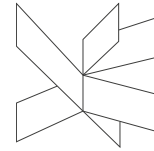


11	Manage Tasks
12	Manage Tasks
13	Manage Tasks
14	Manage Requirements
15	Manage Tasks
16	Access the Website
17	Manage Tasks
18	Access the Website

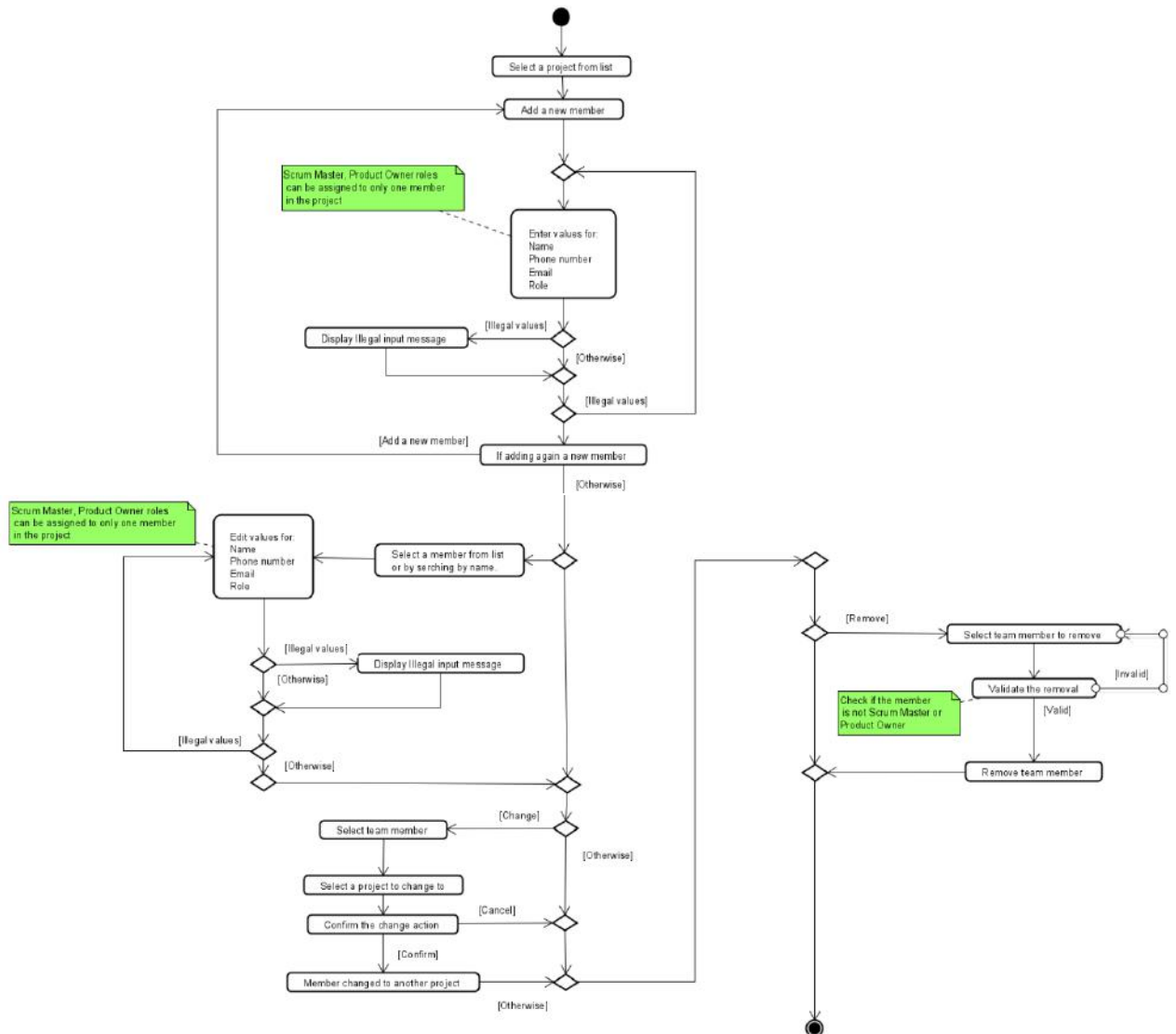
Activity Diagrams

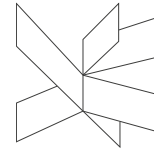
Manage Project



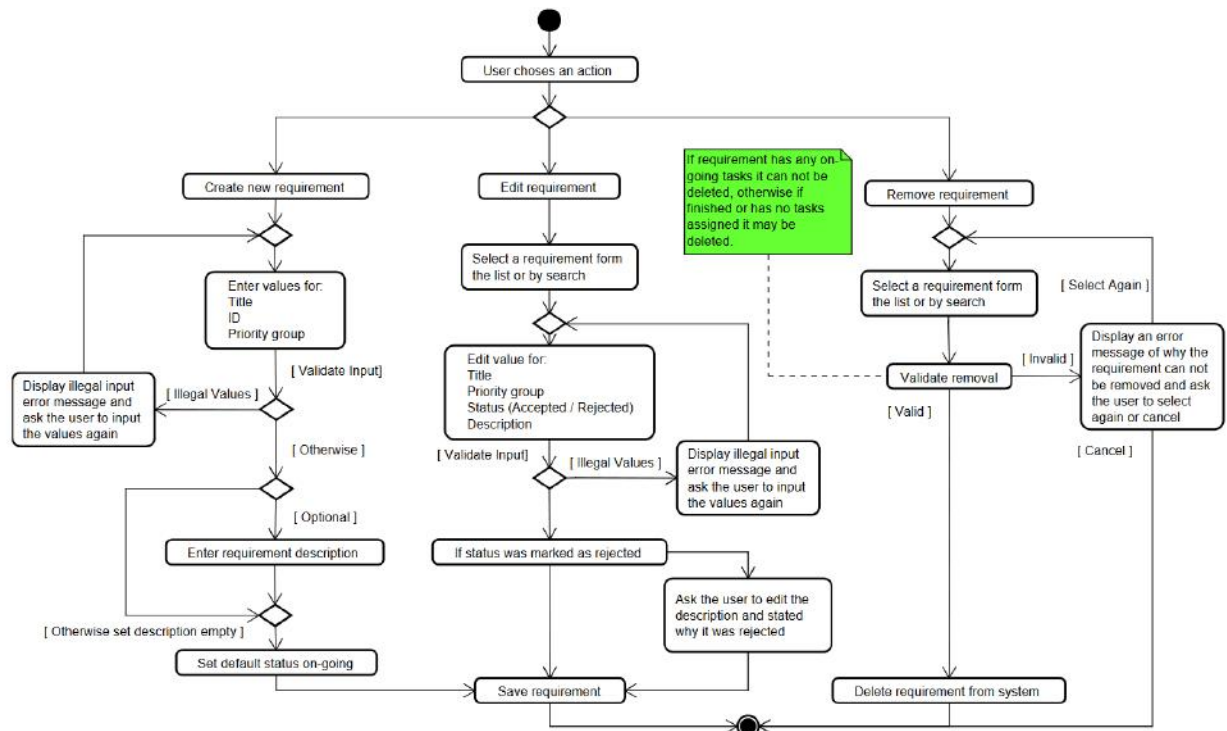


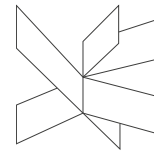
Manage Team Members



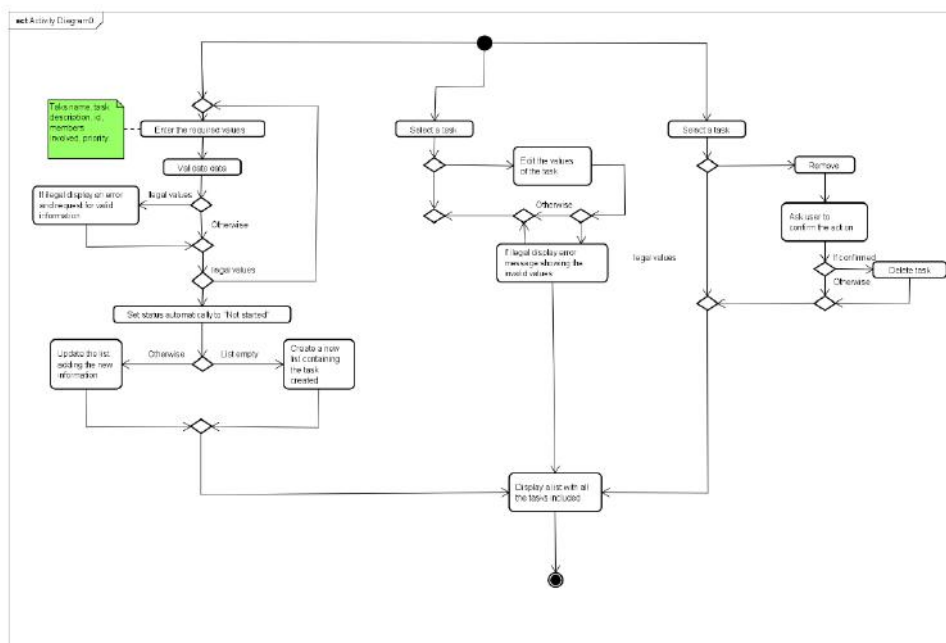
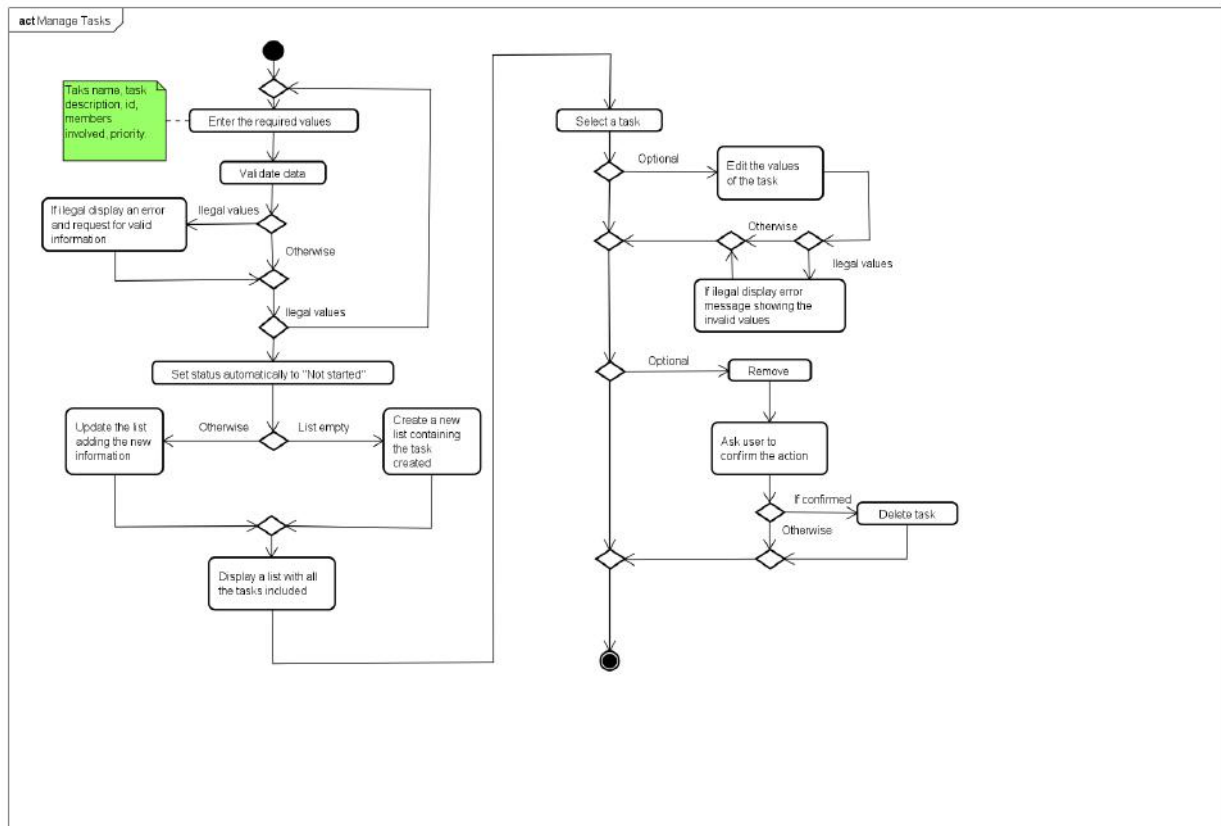


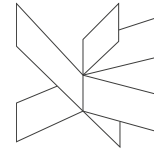
Manage Requirements



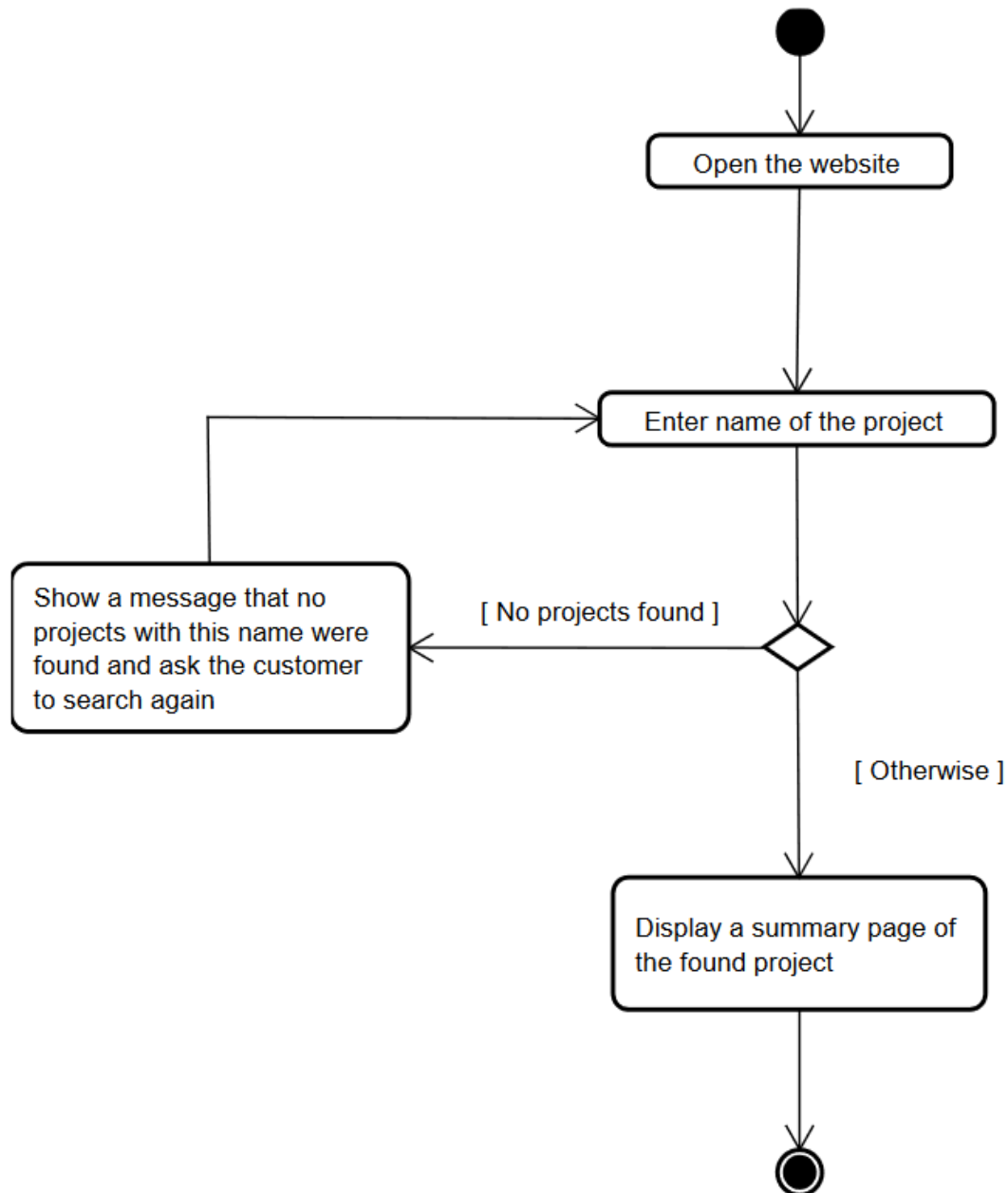


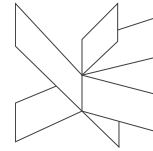
Manage Tasks





Access the Website





Domain model

