SE 3A04: Software Design III: Large System Design

Group #5, Spaceship System Sabotage
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1 Introduction

This section should provide an brief overview of the entire document.

1.1 Purpose

a) Delineate the purpose of the document

b) Specify the intended audience for the document

1.2 System Description

a) Give a brief description of the system. This could be a paragraph or two to give some context to this document.

1.3 Overview

a) Describe what the rest of the document contains

b) Explain how the document is organised

2 Use Case Diagram

SHOW THE USE CASE DIAGRAM AND THEN EXPLAIN EACH SCENARIO

a) End Simulation: The user is in a play session and intends to indefinitely stop the simulation and return to the main menu.

b) Start Simulation: The user is in the main menu and intends to begin a play session.

c) Pause Simulation: The user is in a play session and intends to stop the simulation but intends to resume at a later time.

d) Resume Simulation: The user is in a paused play session and intends to resume and continue the simulation.

e) View Overall System: The user is in a play session and intends to display the status of all the subsystems at once.

f) View Power System: The user is in a play session and intends to include the status of the Power System in the displayed view.

g) View Oxygen System: The user is in a play session and intends to include the status of the Oxygen System in the displayed view.

h) View Mechanical System: The user is in a play session and intends to include the status of the Mechanical System in the displayed view.

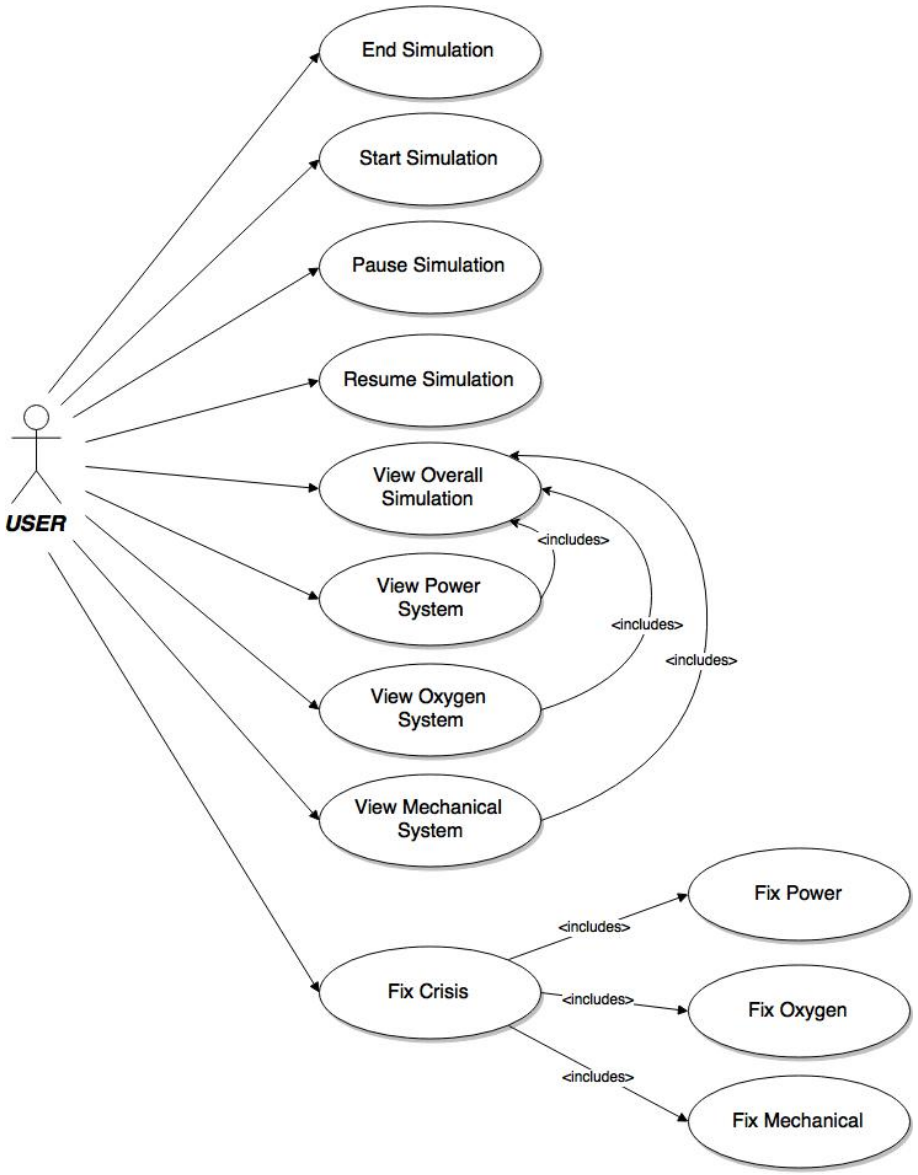

Figure 1: Use Case Diagram

i) Fix Crisis: The user is in a play session and intends to resolve an event that is negatively affecting one of the subsystems.

j) Fix Power: The user is in a fix crisis event and intends to resolve an event affecting the power system.

k) Fix Oxygen: The user is in a fix crisis event and intends to resolve an event affecting the oxygen system.

l) Fix Mechanical: The user is in a fix crisis event and intends to resolve an event affecting the mechanical system.

3 Analysis Class Diagram

DIAGRAM
See the CRC cards for explination for each class.

4 Architectural Design

This section should provide an overview of the overall architectural design of your application. You overall architecture should show the division of the system into subsystems with high cohesion and low coupling.

4.1 System Architecture

a) Identify and explain the overall architecture of your system

b) Be sure to clearly state the name of the architecture

c) Provide the reasoning and justification of the choice

d) Provide a structural architecture diagram showing the relationship among the subsystems (if appropriate)

4.2 Subsystems

a) Provide a brief description of each subsystem. Be sure to document its purpose and relationship to other subsystems.

5 Class Responsibility Collaboration (CRC) Cards

This section should contain all of your CRC cards.

a) Provide a CRC Card for each identified class

b) Please use the format outlined in tutorial, i.e.,

Class Name:	
Responsibility:	**Collaborators:**

Class Name: Start Screen	
Responsibility:	**Collaborators:**
Receive request to display a prompt to start game	Menu Controller
Display screen message to user	
Respond to prompt being pressed by user	
Send request to Menu Controller to start game	Menu Controller

Class Name: End Screen	
Responsibility:	**Collaborators:**
Receive request to display a prompt to end game	Menu Controller
Display screen message to user	
Respond to prompt being pressed by user	
Send request to Menu Controller to end game	Menu Controller

Class Name: Pause Screen	
Responsibility:	**Collaborators:**
Receive request to display a prompt to pause game	Menu Controller
Display screen message to user	
Respond to prompt being pressed by user	
Send request to Menu Controller to pause and unpause game	Menu Controller

Class Name: Success Screen	
Responsibility:	**Collaborators:**
Receive request to display a screen message when game has been won	Menu Controller
Display screen message to user	

Class Name: Failure Screen	
Responsibility:	**Collaborators:**
Receive request to display a screen message when game has been lost	Menu Controller
Display screen message to user	

Class Name: Choose Tool	
Responsibility:	**Collaborators:**
A view for the user the select the tool they wish to use to fix the issue on the spaceship	Tool Controller

Class Name: Tool Fail	
Responsibility:	**Collaborators:**
A view to show the user that they chose the wrong tool to fix the issue	Tool Controller

Class Name: Tool Success	
Responsibility:	**Collaborators:**
A view to show the user that they chose the correct tool to fix the issue	Tool Controller

Class Name: Event Alert	
Responsibility:	**Collaborators:**
A view to show the user that there is an issue with the spaceship	Tool Controller

Class Name: Event Timer	
Responsibility:	**Collaborators:**
A timer to handle the duration of an event	Tool Controller

Class Name: Tool Controller	
Responsibility:	**Collaborators:**
Get user's tool choice	Choose Tool
Determine if it was the correct tool to use	Tool Success, Tool Fail
Inform the user of an issue	Event Alert
Know the event has occured	Overall Controller

Class Name: Power Model	
Responsibility:	**Collaborators:**
Hold the information of the power system	

Class Name: Power View	
Responsibility:	**Collaborators:**
DIsplay the power system to the user	Power Controller

Class Name: Power Controller	
Responsibility:	**Collaborators:**
Updates subsystem information after tool usage	Power Model, Overall Controller
Tells system of subsystem information	Power Model, Overall Controller
Indicate to the view what to display	Power View, Power Model
Generate the stimulation based on a time	Overall Controller

Class Name: Oxygen Model	
Responsibility:	**Collaborators:**
Hold the information of the oxygen system	

Class Name: Oxygen View	
Responsibility:	**Collaborators:**
DIsplay the oxygen system to the user	Oxygen Controller

Class Name: Oxygen Controller	
Responsibility:	**Collaborators:**
Updates subsystem information after tool usage	Oxygen Model, Overall Controller
Tells system of subsystem information	Oxygen Model, Overall Controller
Indicate to the view what to display	Oxygen Model, Oxygen View
Generate the stimulation based on a time	Overall Controller

Class Name: Mechanical Model	
Responsibility:	**Collaborators:**
Hold the information of the mechanical system	

Class Name: Mechanical View	
Responsibility:	**Collaborators:**
DIsplay the mechanical system to the user	Mechanical Controller

Class Name: Mechanical Controller	
Responsibility:	**Collaborators:**
Updates subsystem information after tool usage	Mechanical Model, Overall Controller
Tells system of subsystem information	Mechanical Model, Overall Controller
Indicate to the view what to display	Mechanical Model, Mechanical View
Generate the stimulation based on a time	Overall Controller

A Division of Labour

Include a Division of Labour sheet which indicates the contributions of each team member. This sheet must be signed by all team members.

Member	**Duties**	**Signature**
David Hobson		
Pavle Arezina		
Pareek Ravi		
Victoria Graff		
Julian Cassano		

IMPORTANT NOTES

- Please document any non-standard notations that you may have used
  - *Rule of Thumb*: if you feel there is any doubt surrounding the meaning of your notations, document them
- Some diagrams may be difficult to fit into one page
  - It is OK if the text is small but please ensure that it is readable when printed
  - If you need to break a diagram onto multiple pages, please adopt a system of doing so and thoroughly explain how it can be reconnected from one page to the next; if you are unsure about this, please ask about it
- Please submit the latest version of Deliverable 1 with Deliverable 2
  - It does not have to be a freshly printed version; the latest marked version is OK
- If you do NOT have a Division of Labour sheet, your deliverable will NOT be marked