Звіт

Лабораторна робота № 1

Додаткове завдання № 1 е

UML як мова опису не лише для програмування

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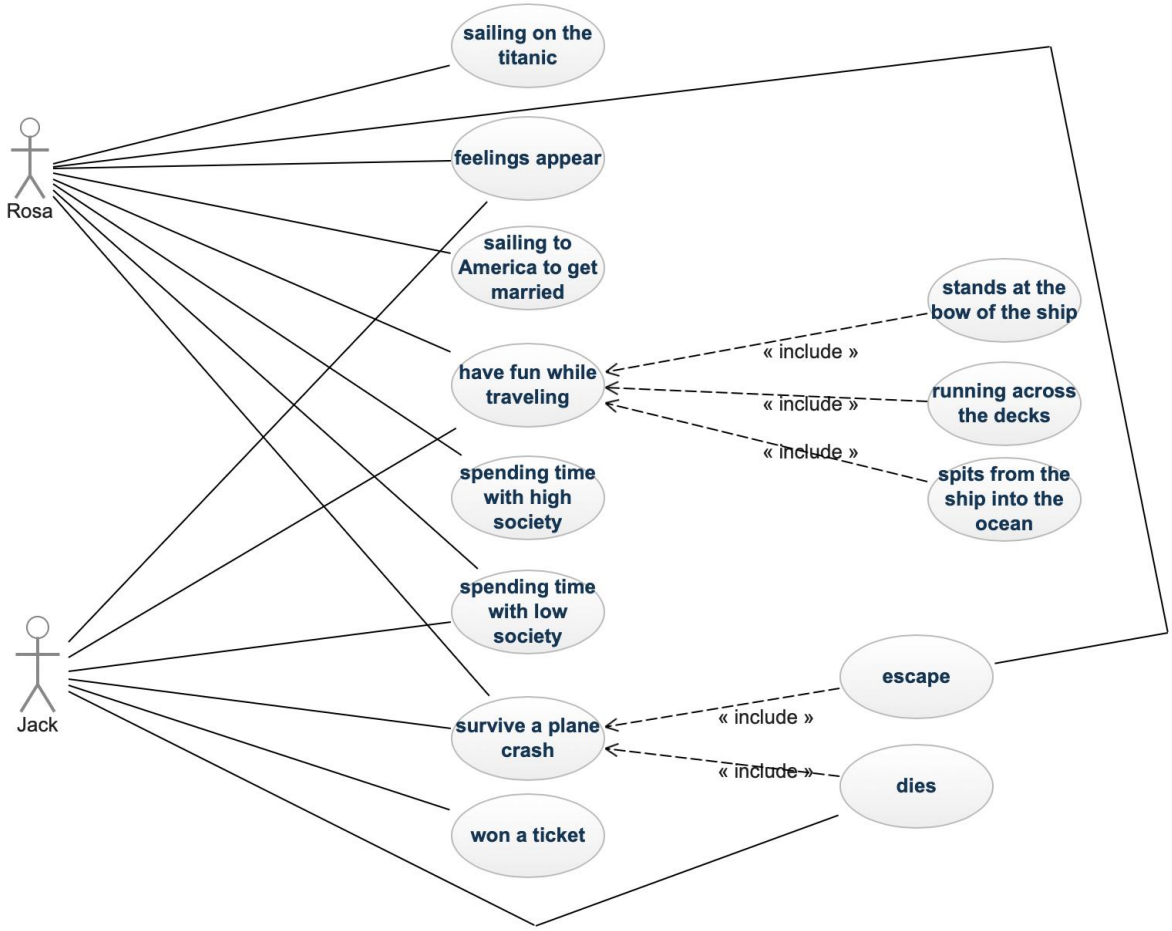
ІПС-22

В даному файлі прикріплені діаграми та текстовий опис до кожної діаграми.

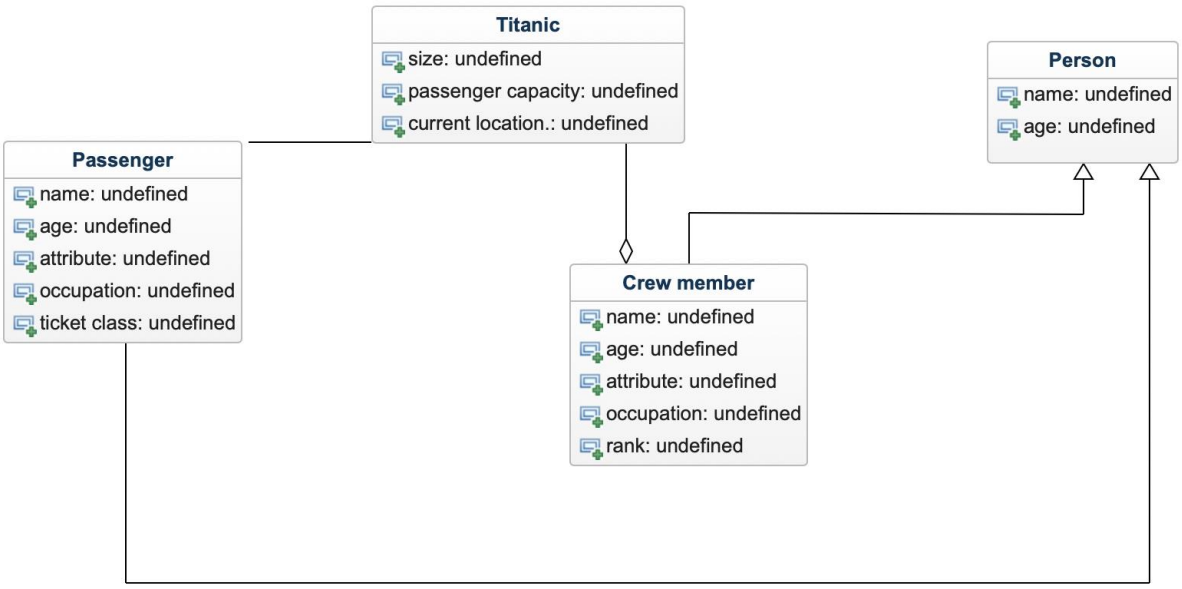
Фільм «Титанік»

Use case diagram



The movie "Titanic" can be described as a Romance-Disaster film. The romance aspect follows the story of two main characters, Jack and Rose, who fall in love aboard the Titanic. The disaster aspect is centered around the sinking of the Titanic, one of the largest and most famous ships in history, after hitting an iceberg. The film portrays the events leading up to and during the sinking, as well as the aftermath and its impact on the characters and those involved.

Class diagram



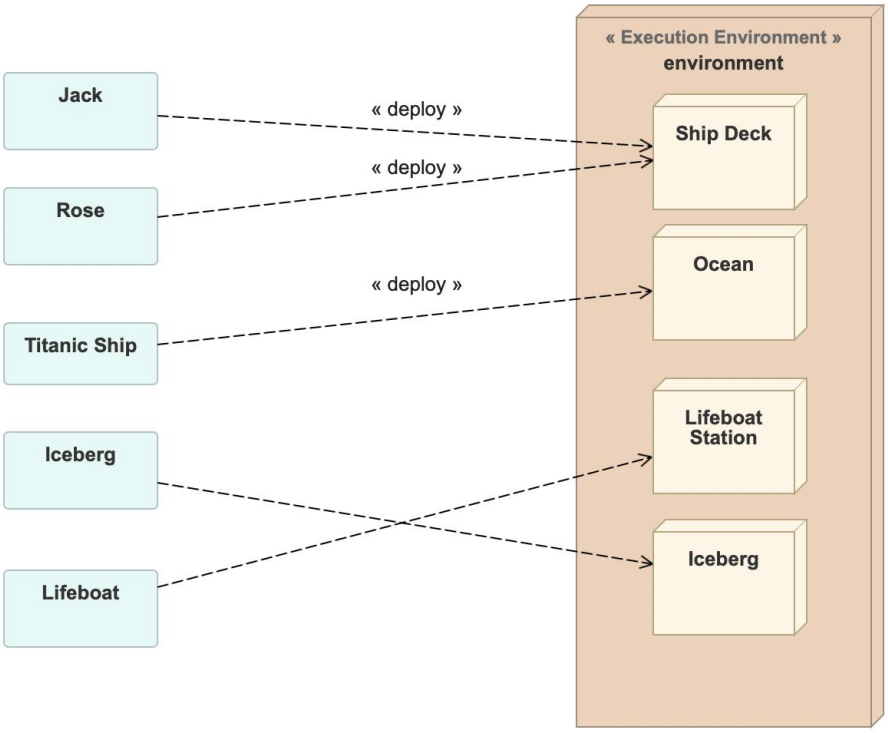
Classes:

- Titanic: A class representing the ship itself. Attributes include size, passenger capacity, and current location.
- Passenger: A class representing the passengers on the Titanic. Attributes include name, age, occupation, and ticket class.
- Crew Member: A class representing the crew on the Titanic. Attributes include name, age, occupation, and rank.

Relationships:

- Association: A relationship between the Titanic class and the Passenger class, indicating that passengers are aboard the Titanic.
- Inheritance: The Passenger class and the Crew Member class could inherit from a more general "Person" class, which would contain common attributes such as name and age.
- Aggregation: A relationship between the Titanic class and the Crew Member class, indicating that crew members are part of the Titanic crew.

Deployment diagram



Artifacts:

- Jack: Representing the main male character in the movie.
- Rose: Representing the main female character in the movie.
- Titanic Ship: Representing the Titanic itself.
- Iceberg: Representing the iceberg that the Titanic collides with.
- Lifeboat: Representing the lifeboats used by passengers and crew to escape the sinking Titanic.

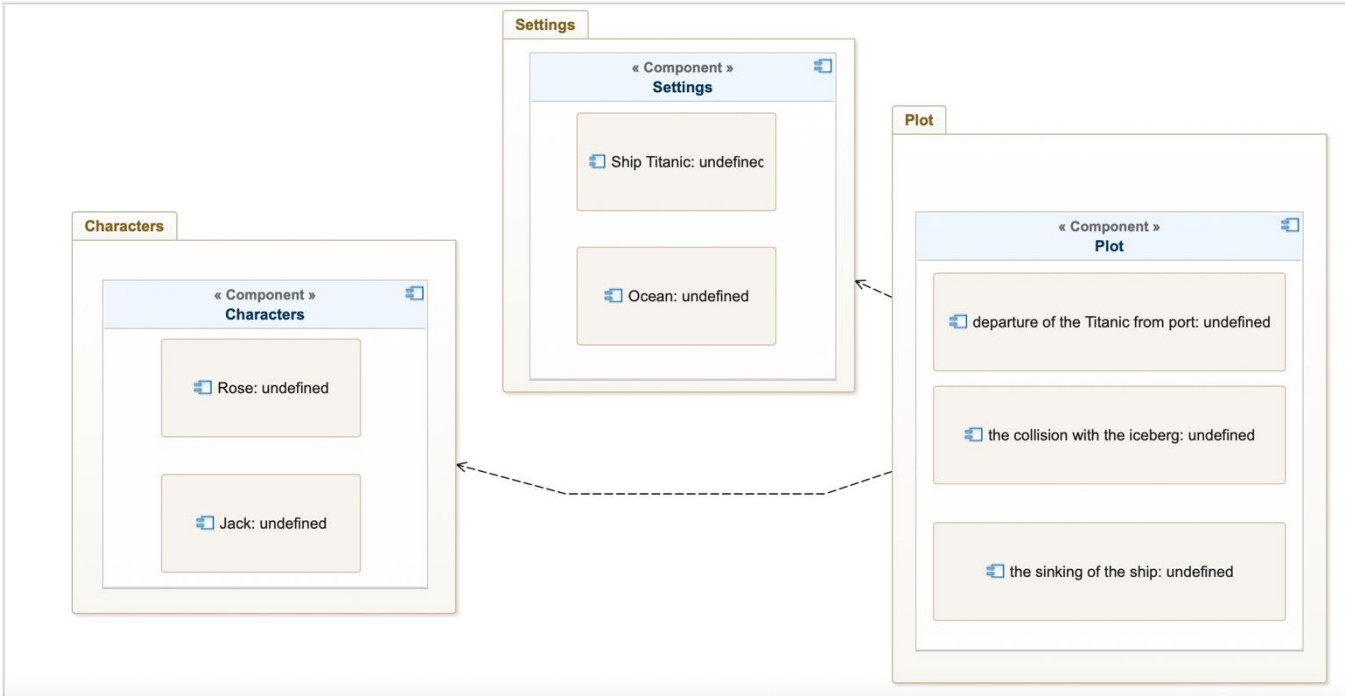
Nodes:

- Ship Deck: Representing the various decks on the Titanic ship.
- Ocean: Representing the ocean environment where the Titanic sinks.
- Lifeboat Station: Representing the lifeboat stations on the Titanic ship.
- Iceberg: Representing the location of the iceberg that the Titanic collides with.

Connections:

- Deployment: Representing the deployment of artifacts on the various nodes. Jack and Rose are deployed on the Ship Deck, while the Titanic Ship is deployed in the Ocean.
- Dependency: Representing the dependencies between artifacts and nodes the Titanic Ship is dependent on the Ship Deck, while the Lifeboat is dependent on the Lifeboat Station.

Package diagram



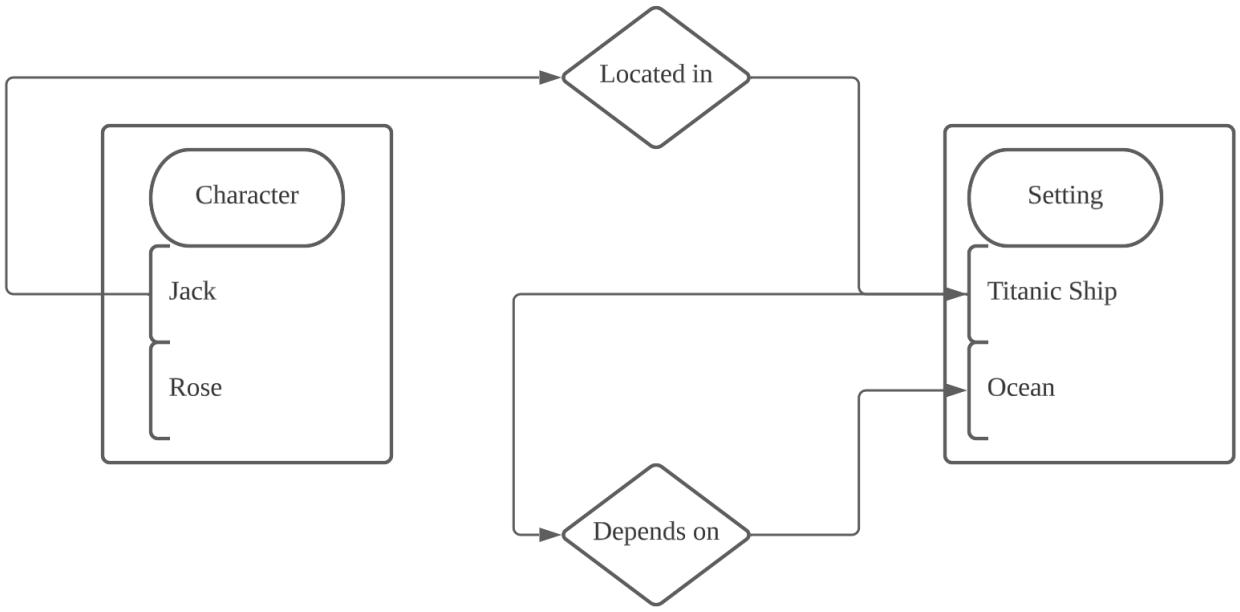
Packages:

- Characters: Representing the various characters in the movie, including Jack and Rose.
- Settings: Representing the different environments and settings in which the events of the movie take place, including the Titanic ship and the ocean.
- Plot: Representing the storyline and events of the movie, including the departure of the Titanic from port, the collision with the iceberg, and the sinking of the ship.

Dependencies:

- Import: Representing the relationship between packages, showing that one package depends on another for its functionality. the Plot package may depend on the Characters and Settings packages.

Object diagram



Classes:

- Character: Representing the various characters in the movie, including Jack and Rose.
- Setting: Representing the different environments and settings in which the events of the movie take place, including the Titanic ship and the ocean.

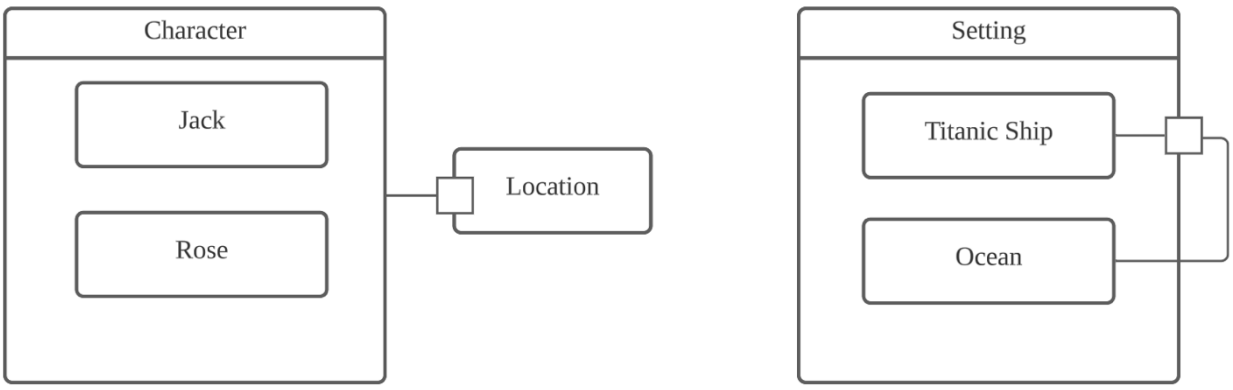
Objects:

- Jack: An instance of the Character class, representing the main male character in the movie.
- Rose: An instance of the Character class, representing the main female character in the movie.
- Titanic Ship: An instance of the Setting class, representing the Titanic itself.
- Ocean: An instance of the Setting class, representing the ocean environment where the Titanic sinks.

Associations:

- Located in: Representing the relationship between a Character object and a Setting object, showing that the character is located in the setting. Jack is located in the Titanic Ship.
- Depends on: Representing the relationship between Setting objects, showing that one setting depends on another for its functionality. the Titanic Ship may depend on the Ocean.

Composite Structure diagram



Classes:

- Character: Representing the various characters in the movie, including Jack and Rose.
- Setting: Representing the different environments and settings in which the events of the movie take place, including the Titanic ship and the ocean.

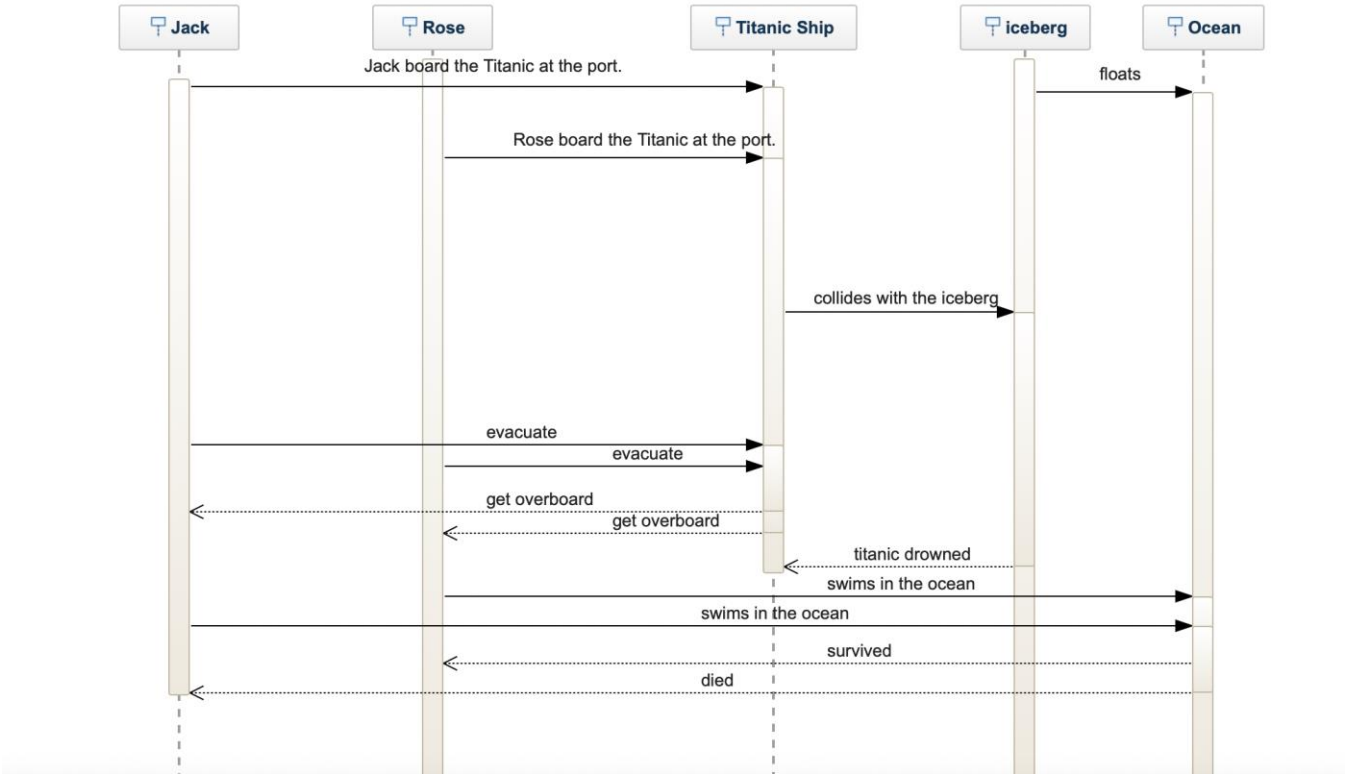
Parts:

- Jack: A part of the Character class, representing the main male character in the movie.
- Rose: A part of the Character class, representing the main female character in the movie.
- Titanic Ship: A part of the Setting class, representing the Titanic itself.
- Ocean: A part of the Setting class, representing the ocean environment where the Titanic sinks.

Ports:

- Location: A port on the Character class, representing the setting in which the character is located.
- Ocean: A port on the Titanic Ship class, representing the relationship between the Titanic Ship and the Ocean setting.

Sequence/communication diagram



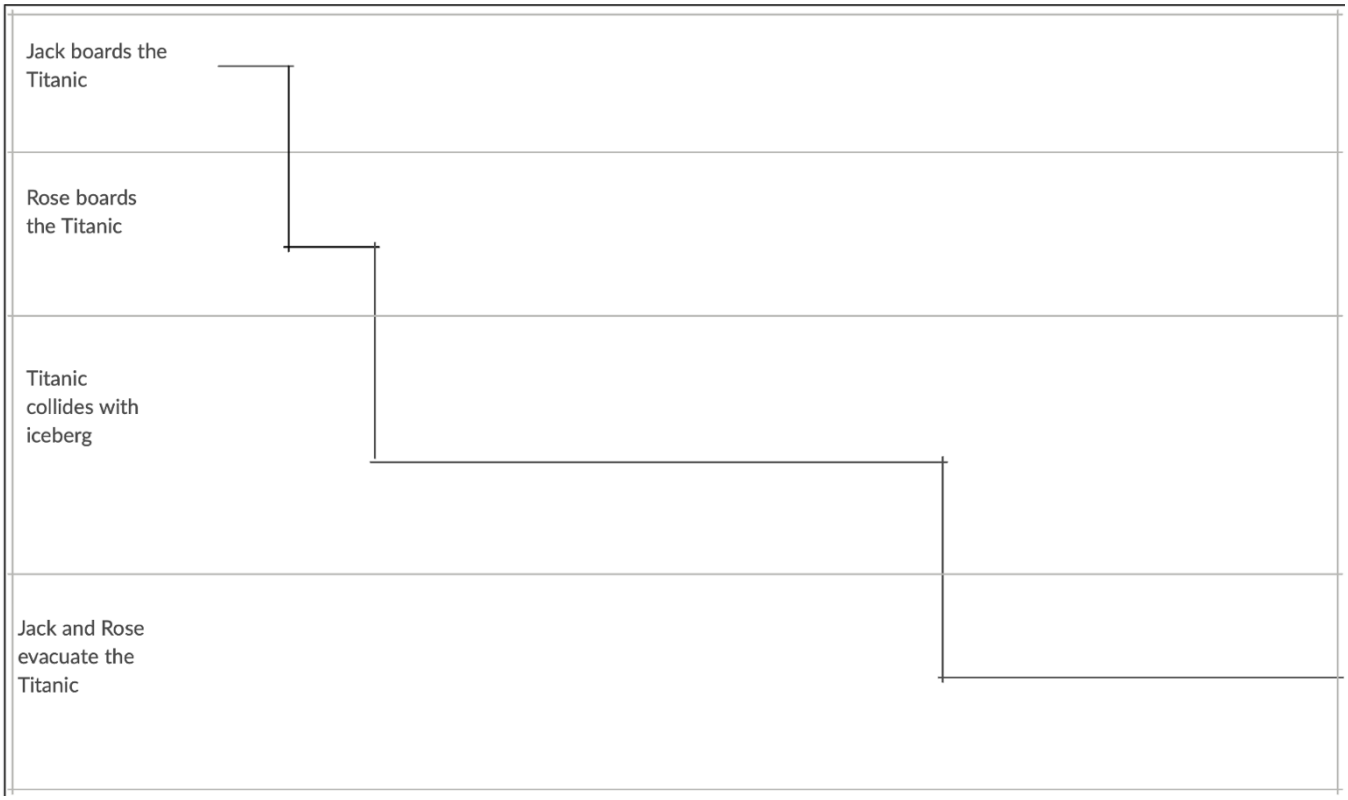
Objects:

- Jack: Representing the main male character in the movie.
- Rose: Representing the main female character in the movie.
- Titanic Ship: Representing the Titanic itself.
- Ocean: Representing the ocean environment where the Titanic sinks.

Interactions:

- Jack boards the Titanic: Representing the event where Jack boards the Titanic at the port.
- Rose boards the Titanic: Representing the event where Rose boards the Titanic at the port.
- Iceberg floats in the ocean
- Titanic collides with iceberg: Representing the event where the Titanic collides with the iceberg.
- Jack and Rose evacuate the Titanic: Representing the event where Jack and Rose evacuate the Titanic.
- Rose and Jack end up overboard in the ocean.

Timing diagram



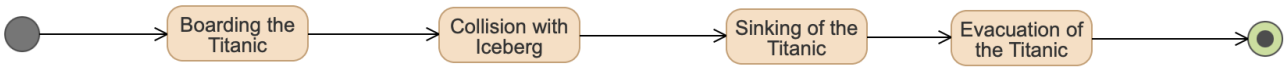
Objects:

- Jack: Representing the main male character in the movie.
- Rose: Representing the main female character in the movie.
- Titanic Ship: Representing the Titanic itself.
- Ocean: Representing the ocean environment where the Titanic sinks.

Interactions:

- Jack boards the Titanic
- Rose boards the Titanic
- Titanic collides with iceberg
- Jack and Rose evacuate the Titanic

Activity diagram



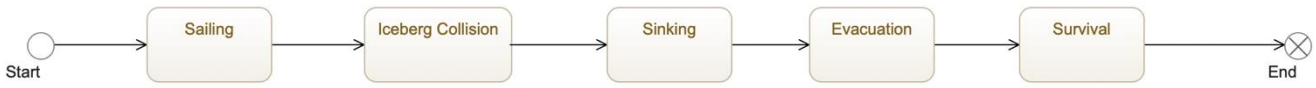
Activities:

- Boarding the Titanic: Representing the event where Jack and Rose board the Titanic at the port.
- Collision with Iceberg: Representing the event where the Titanic collides with the iceberg.
- Sinking of the Titanic: Representing the event where the Titanic begins to sink.
- Evacuation of the Titanic: Representing the event where Jack and Rose evacuate the Titanic.

Transitions:

- Boarding the Titanic -> Collision with Iceberg: Representing the sequence of events from Jack and Rose boarding the Titanic to the collision with the iceberg.
- Collision with Iceberg -> Sinking of the Titanic: Representing the sequence of events from the collision with the iceberg to the sinking of the Titanic.
- Sinking of the Titanic -> Evacuation of the Titanic: Representing the sequence of events from the sinking of the Titanic to Jack and Rose's evacuation.

State diagram



States:

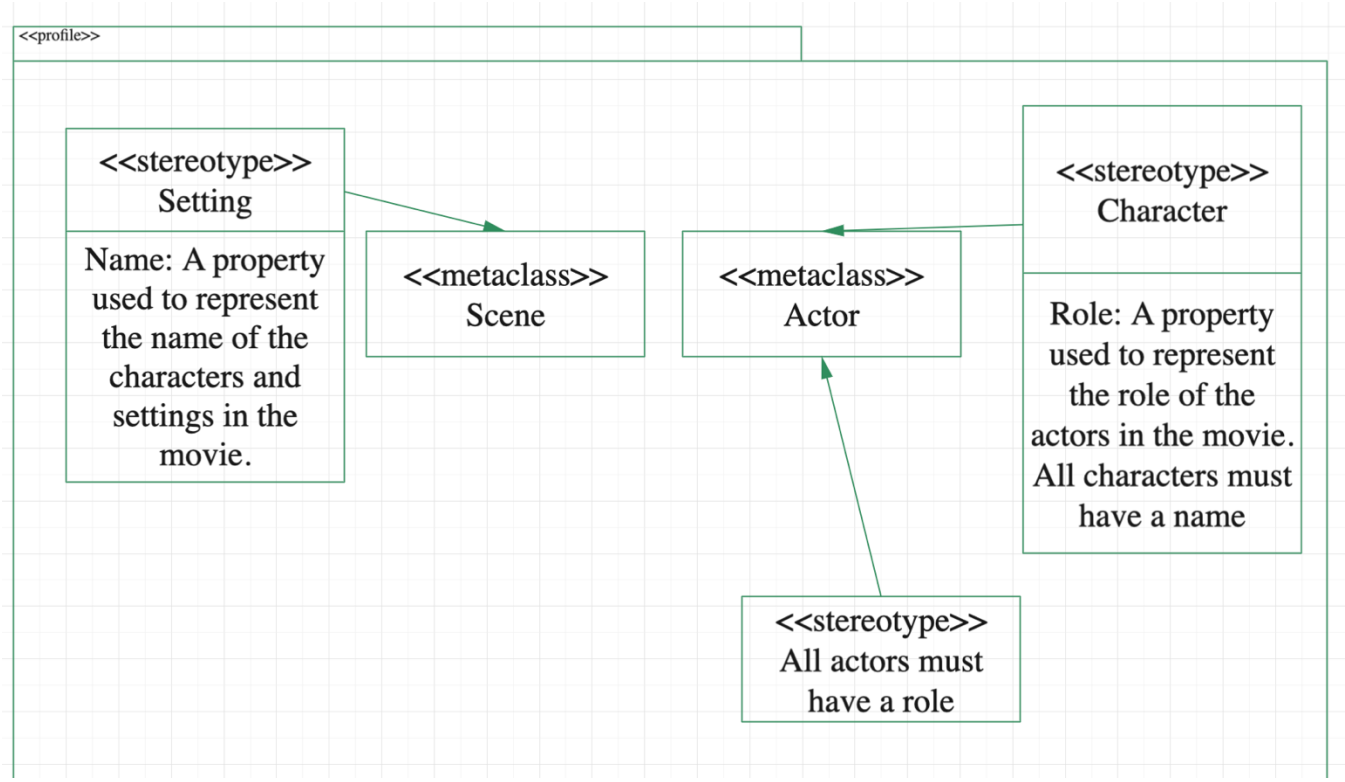
- Sailing: Representing the state of the Titanic and its characters before the collision with the iceberg.
- Iceberg Collision: Representing the state of the Titanic and its characters after the collision with the iceberg.
- Sinking: Representing the state of the Titanic and its characters as the ship is sinking.
- Evacuation: Representing the state of the Titanic and its characters as they are evacuating the ship.

- Survival: Representing the state of the Titanic and its characters who have survived the sinking.

Transitions:

- Sailing -> Iceberg Collision: Representing the transition from the Titanic sailing to the collision with the iceberg.
- Iceberg Collision -> Sinking: Representing the transition from the collision with the iceberg to the sinking of the Titanic.
- Sinking -> Evacuation: Representing the transition from the sinking of the Titanic to the evacuation of the ship.
- Evacuation -> Survival: Representing the transition from the evacuation of the Titanic to the survival of the characters.

Profile diagram



Stereotypes:

- Character: A custom stereotype used to represent the characters in the movie.
- Setting: A custom stereotype used to represent the settings in the movie.

Metaclasses:

- Actor: A custom metaclass used to represent the actors who portray the characters in the movie.
- Scene: A custom metaclass used to represent the scenes in the movie.

Properties:

- Name: A property used to represent the name of the characters and settings in the movie.
- Role: A property used to represent the role of the actors in the movie.

Constraints:

- All characters must have a name: A constraint used to ensure that all characters in the movie have a name.

- All actors must have a role: A constraint used to ensure that all actors in the movie have a role.