COMP 361 D1: Software Engineering Project
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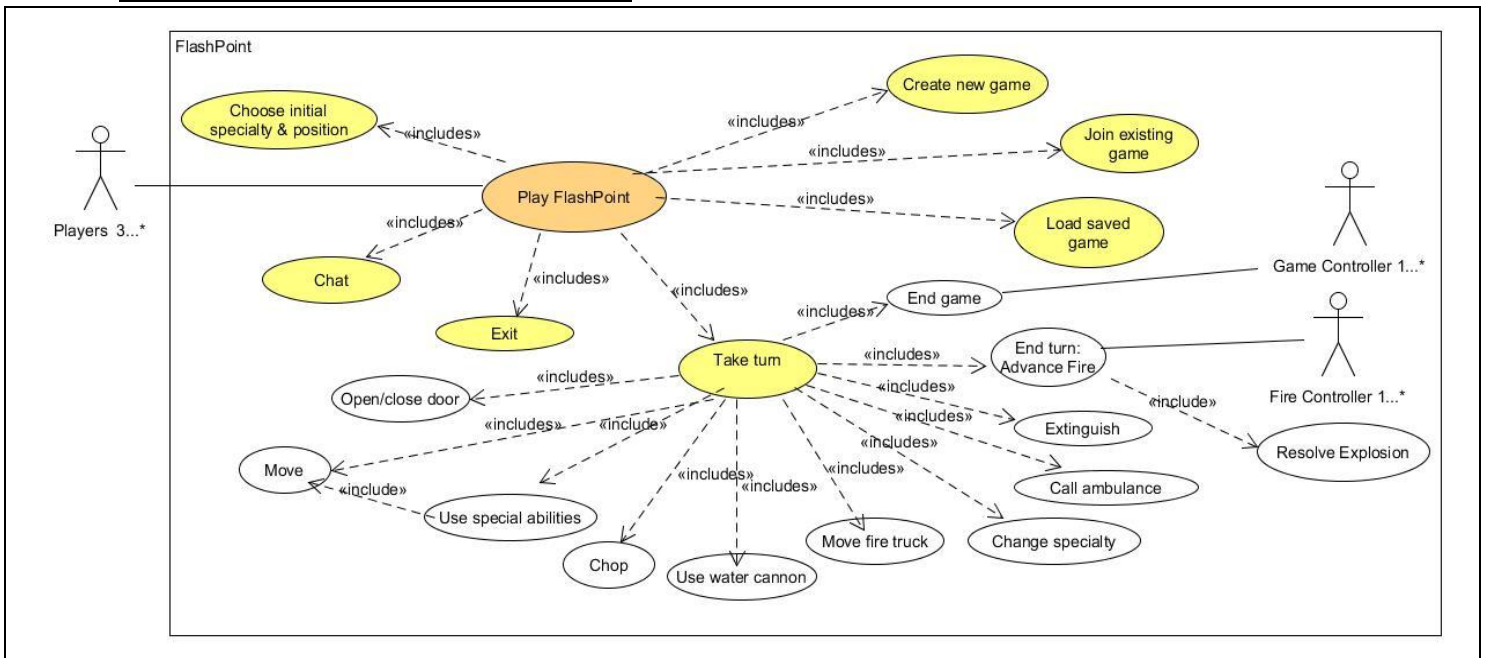
MILESTONE 2:

REQUIREMENT ELICITATION: USE CASE MODEL

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FlashPoint: Use Case Diagram

FlashPoint use cases start on next page.

FlashPoint: Use Cases

Play FlashPoint

Use Case: Play FlashPoint
Scope: Flash Point
Level: User Goal
Intention in Context: The intention of the Player is to play a game of FlashPoint in collaboration with other players.
Multiplicity: Multiple Players can play FlashPoint concurrently. A given player is not allowed to play multiple games simultaneously, there is a minimum of 3 players and max of 6 players per flashpoint game.
Primary Actor: Player, Game controller
Main Success Scenario:
1. Player inputs his username and password for the System to sign up or login
2. System presents to Player the list of available games.
3. Player informs the system of his choice to either: join existing game, load saved game or create new game.
Step 4 is executed once enough players have joined the game.
4. System displays initial state of the board after solving the initial explosions (*Experienced Game* mode).
5. Player choose initial specialty card and position on the board.
Step 6 is repeated until the Game controller detects that the building has collapsed, 7 victims have been rescued, or 4+ victims have been lost.
6. Players take turn.
6a Player can check cheat sheet, check stats, chat with other players, or exit while it is other players turns or his/her own turn.
7. System informs player that game has ended.
Extensions:
2a System determines username and password are invalid, go back to step 1
3a. Player was not able to create, join or load an existing game. Use case goes back to step 2.

Create New Game

Use Case: Create a new Game
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to create a game with specific settings
Multiplicity: Multiple Players can create game sets concurrently. A given player is not allowed to play create multiple games simultaneously.
Primary Actor: Player
Main Success Scenario:
1. Player chooses the game settings:
   - Game Name
   - Game mode: Family or Experienced
   - Number of Players
   - Difficulty
   - Type of Map
   - Number of hazmat and explosions
2. Player validates his settings
3. System creates a game-file and adds it to the list of games to join
4. System redirects player to the Waiting Room
Extensions:
2a Player informs system he/she no longer wants to create the game, case ends in failure.

Join Existing Game

Use Case: Join existing Game
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player join a game
Multiplicity: Multiple Players can join Game sets concurrently. A given player is not allowed to join multiple games simultaneously.
Primary Actor: Player
Secondary Actors: Other Players
Main Success Scenario:
1. Player informs system of the game he wishes to join
2. System displays the waiting room
3. Player indicates that he is ready to start the game
Extensions:
3a Player tells system he wishes to no longer join, case ends in failure

Load Saved Game

Use Case: Load Saved Game
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player load saved game-file
Multiplicity: Multiple players can load different Game Sets but not the same game. A given player is not allowed to load multiple games simultaneously.
Primary Actor: Player
Main Success Scenario:
1. Player chooses a saved game listed by name
2. System validates his choice by retrieving the game-file
3. System redirects player to the Waiting Room (chat room)
Extensions:
3a. Game file is not valid, the system alerts the player, case ends in failure

Choose initial specialty and position

Use Case: Choose specialty card and initial position on the board
Scope: FlashPoint
Level: subfunction
Intention in Context: The intention of the Players is to choose a specialty card (only in *Experienced Game mode*) and initial board position.
Primary Actors: Player
Multiplicity: One player in the same game can perform this use case at a time
Main Success Scenario:
System determines seating order of players. Steps 1 to 5 are repeated in sequence for each player in seating order.
1. System asks Player to choose a specialty card from the given list of available specialties (Paramedic, Fire captain, Imaging technician, CAFS firefighter, Hazmat technician, Generalist, Rescue Specialist, Driver).
2. Player informs System about which specialty card he wishes to have.
3. System removes speciality from the list
4. System informs Player that he has to place his firefighter on the board spaces outside of the building.
5. Player informs System about where he wishes to place his firefighter.
6. System updates the player position on the board.
Extensions
1-5a Player informs system he no longer wants to play the game
1-5a.1 System displays main lobby, case ends in failure

Chat

Use Case: Play FlashPoint
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to chat with the other players
Multiplicity: Player can chat with individual players or with the whole team.
Primary Actor: Player
Secondary Actors: Other Players
Multiplicity: Multiple players can chat at the same time
Main Success Scenario:
1. Player chooses the receiver of the message: can be a specific player or the whole team.
2. System displays the window with all the past conversations with whom the player chooses to chat again.
3. Player writes a message to the System and informs it to send the message (by pressing the "Send" button).
4. System displays Player's message to one other Player
4a. System displays Player's message to all other Players

Exit

Use Case: Exit
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to exit the game
Primary Actor: Player
Secondary actors: other players
Multiplicity: Multiple players can exit at the same time
Main Success Scenario:
1. Player asks the system to exit the game
2. System informs other players that one of them left the game
3. System brings the player back to the main lobby
Extension
2a. System informs other players that there is not enough player to carry on playing
2a.1 System brings back all other player to the main lobby

Take turn

Use Case: Take Turn
Scope: Flash Point
Level: Sub Function
Intention in Context: The intention of the Player is to make some number of actions and then end his/her turn
Multiplicity : Only one player may take a turn at a time in a single game.
Primary Actor: Player
Facilitating Actor: Game Controller
Main Success Scenario:
1. System informs player that it's his turn
2. System adds 4 action points to player's action point (action points cannot exceed 8)
Step 3 can be repeated as long as the player wants to make a move and it is possible to do so.
3. Player performs one of the following actions:

- Open/Close door
- Move firefighter on the game board
- Chop a wall
- Change specialty
- Use water cannon
- Move fire truck
- Use special abilities
- Extinguish fire
- Call an ambulance
- Save game (state)

Save Game: When player informs the system about her desire to save the state of the game, the system will save all data up to the player's current move.
4. Player informs the system to End Turn: Advance fire.
Extensions:
3a. Winning End Game occurs.
4a. Losing End Game occurs.

End turn: Advance fire

Use Case: End Turn: advance fire
Scope: Flash Point
Level: SubFunction
Intention in Context: The intention of the Fire Controller is to spread fire at the end of the player's turn.
Multiplicity : The fire only spreads once at the end of every turn (one fire controller).
Primary Actor: Fire Controller
Main Success Scenario:
1. Fire hits on an empty tile: Fire controller places smoke on the tile
2. Fire Controller informs players about the effect of advancing fire to the tiles space. (victim died, point of interest died, player died, new point of interest)
3. System informs the player that his turn is over
Extensions:
1a Fire hits at a tile with smoke: Fire Controller places fire on the tile.
1a.1 Adjacent tiles to the hit tile contains smoke: Fire controller places fire on those tiles.
1b. Fire hits a tile with a hazmat: Fire Controller resolves Explosion
1b.1 Fire controller takes out the hazmat.
1c. Fire hits at a tile with fire: Fire Controller resolves Explosion.
2a. System informs player that the game ended (due to too many victims died, building collapsed).
2b. The target space is a HOT SPOT: Fire Controller advances fire another time.
2b1. New target tiles does not contain hotspot: Fire Controller adds a hotspot to that tile.

Resolve Explosion

Use Case: Resolve Explosion
Level: SubFunction
Scope: Flash Point
Intention in Context: The intention of the Fire Controller is to propagate fire after an explosion has occurred
Multiplicity : When an explosion is triggered, there is only one explosion at one time.
Primary Actor: Fire Controller (actor that is part of the System)
Main Success Scenario:
1.Fire Controller spreads fire in all 4 directions (up, down, left, right) from where the explosion started.
2. Fire controller changes any tiles adjacent to fire tiles with smoke to tiles with fire
Extensions:
1a Tile is an open (empty) space: Fire Controller put a fire over it.
1b Tile is a wall: Fire Controller adds a damage marker to the wall.
1b.1. The wall already has 1 damage marker: Fire Controller destroys the wall
1c Tile is a closed door: Fire Controller removes the door marker from the board.
1d. Tile contains smoke: Fire Controller changes the smoke to fire.
1e. Tile contains fire: Fire Controller goes back to step 1 and continues spreading fire in the direction it was propagated.
1g. The target space/spread space is a tile with a hazmat: Fire Controller goes back to step 1 and take out the hazmat.

End game

Use Case: End game
Scope: FlashPoint
Level: subfunction
Intention in Context: The intention of the Game Controller is to inform the system that the game has ended if one the 3 conditions for ending the game has been met.
Primary Actors: Game Controller
Secondary Actors: Players
Multiplicity: Multiple games can end at the same time
Secondary Actors: players
Main Success Scenario:
1. Game Controller informs the system that the game has ended (24 damage marker use, 4+ victims died, 7 victims have been rescued).
2. System displays the appropriate end game message to the players
3. Players informs system that they have seen the message
4. System displays the main lobby page to all players

Open/Close door

Use Case: Open/close door
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to open/close the door
Multiplicity: that action can be performed by only one player during his turn in the same game
Primary Actor: Player
Secondary Actor: Allies (Other players)
Main Success Scenario:
1. Player clicks on the door he wants to interact with
2. System informs player of his new action point number.
3 System displays the new door condition to allies and player
Extensions:
2a Player does not have enough action points, system informs the player, case ends in failure
2b System informs player it cannot interact with any door, case ends in failure

Move

Use Case: Move
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to move himself on a new tile
Primary Actor: Player
Secondary Actor: Allies (Other players)
Multiplicity: that action can be performed by only one player during his turn in the same game
Main Success Scenario:
1. Player clicks on the square he wants to move to
2. System informs player of his new action point number.
3. System display the player at his new location to player and allies
Extensions:
1a Player is in the same location than a victim/hazmat, system asks the player if it wants to move the victim/hazmat
1a.1 Player informs the system of his intention regarding the victim/hazmat
1b Player cannot move to the location (square not reachable), system informs player it cannot move to the location: case ends in failure.
2a Player does not have enough action points, system informs the player case ends in failure
3a System display the player at his new location with the victim to player and allies
3b The new location has a point of interest
3b.1 System flips the point of interest either a victim or a false alarm
3c. The new location is the same as the ambulance and the player carried a victim
3c.1 System updates the victim status to saved
3c.2 System removes victim from the board
3c.3 System inform player and allies of a new point interest point on the board

Chop wall

Use Case: Chop wall
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to chop a wall
Primary Actor: Player
Secondary Actor: Allies (Other players)
Multiplicity: that action can be performed by only one player during his turn in the same game
Main Success Scenario:
1. Player clicks on the wall it wants to chop
2. System informs player of his new action point number.
3. System displays the new damage markers of the wall to player and allies.
Extensions:
1a Player cannot interact with the wall, system displays appropriate message, case ends in failure.
2a Player does not have enough action points, system informs the player case ends in failure.
3a. Wall is destroyed: System removes the wall from the board and displays the new state to player and allies.

Change of specialty

Use Case: Change of specialty
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to change his speciality
Primary Actor: Player
Multiplicity: that action can be performed by only one player during his turn in the same game
Main Success Scenario:
1. System displays the specialties available
2. Player selects the specialty
3. System informs player of his new action point number.
4. System updates player specialty
Extensions:
1a Player and truck are not at the same location: System displays appropriate message, use case ends in failure.
2a Player informs system he no longer wants to change specialty: use case ends in failure
3a Player does not have enough action point: System displays appropriate message, use case ends in failure

Use the water cannon

Use Case: Use the water cannon
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to extinguish the fire using the water cannon
Primary Actor: Player
Secondary Actor: Allies (Other players)
Multiplicity: that action can be performed by only one player during his turn in the same game
Main Success Scenario:
1. System informs player of his new action point number.
2. System informs player of where the water hits and the affected adjacent tiles
3. System removes smoke/fire from the tile where the cannon hits as well as any smoke or fire on adjacent tiles
Extensions:
1a. Player and truck are not at the same location: System informs player of the problem, case ends in failure.
1b. Player does not have enough action point: System display appropriate message, case ends in failure
3a. Player is a Driver/Operator specialist
3a.1 Player informs system he wishes to change the hit location
3a.2 System asks player which axes he wishes to keep or if player wants to try with both axes again.
3a.3 Player informs system of his choice
3a.4 System informs player of new hit location
3a.5 System removes smoke/fire from the tile where the cannon hit as well as any smoke or fire on adjacent tiles

Move fire truck

Use Case: Move fire truck
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to move the fire truck to a new location
Multiplicity: This action can be performed by only one player during his turn in the same game
Primary Actor: Current player
Secondary actors: Other players
Main Success Scenario:
1. Current player informs system of the zone to which the fire truck shall move
2. System informs current player of his new action point number.
3. System moves fire truck with the player to the new location.
Extensions:
1a Player and truck are not at the same location: System displays error message to player, case ends in failure.
1b Truck cannot move to the designated location: System informs current player case ends in failure.
2a Player does not have enough action point: System informs player case ends in failure
3a System informs other players at the truck location where the truck will move
3a.1 System asks other players if they wish to stay in the truck or remain at their current location
3a.2 Other players inform system of their choices.
3a.3 System updates fire truck location

Extinguish fire

Use Case: Extinguish fire
Scope: Flash Point
Level: Subfunction
Intention in Context: The intention of the Player is to remove fire or smoke from an area next to it
Primary Actor: Player
Multiplicity: This action can be performed by only one player during his turn in the same game
Main Success Scenario:
1. Player informs system of the zone to extinguish
2. System informs player of his new action point number
3. System removes smoke from the tile
3a System turns fire to smoke on the tile
Extensions:
1a System informs player it cannot interact with the tile, case ends in failure.
2a Player does not have enough action points, system informs player, case ends in failure

Call ambulance

Use Case: Call ambulance
Scope: Flash Point
Level: Subfunction
Multiplicity: This action can be performed by only one player during his turn in the same game
Intention in Context: The intention of the Player is to move the ambulance to a new location
Primary Actor: Current player
Secondary actor: Other players
Main Success Scenario:
1. Current player informs system of the zone to which the ambulance shall move
2. System informs player of his new action point number.
3. System moves the ambulance to the new location.
Extensions:
2a Player does not have enough action points: System displays the appropriate message, case ends in failure.
3a System informs other players at the ambulance location of where the ambulance will move
3a.1 System asks other players if they wish to stay in the ambulance or remain at their current location
3a.2 Other players inform system of their choices.
3a.3 System moves the ambulance with the other players
3b The new location contains a victim
3b.1 System changes victim status to saved
3b.2 System informs players that a victim was saved and removes him/her from the board
3b.3 System informs players where the new point of interest is located

Use Special abilities

Use Case: Use special abilities
Scope: Flash Point
Level: Subfunction
Multiplicity: That action can be performed by only one player during his turn in the same game
Intention in Context: The intention of the Player is to use the special ability provided by his card
Primary Actor: Current player
Secondary Actor: Remotely called player
Main Success Scenario:
1. Current player informs system he wishes to use his special ability
2. System informs player of his new action point amount.
3. System displays the new board game state
Extensions:
2a Player does not have enough action points, system displays the appropriate message, case ends in failure
3a (Imaging technicians), System asks current player which point of interest to flip over
3a.1 Current player tells system which point of interest it flips over
3a.2 System flips over the point of interest
3b (Paramedic), Current player tells system which victim to treat
3b.1 System puts a heal marker on victim
3c (Fire Captain) System asks player which remotely called player he wishes to move
3c.1 Current player tells system which remotely called player he wishes to move
3c.2 System informs remotely called player that the captain wants to move it
3c.3 Remotely called player tells system he agrees
3c.3a Remotely called player tells system he disagrees, case ends in failure
3c.4 Current player performs <u>move</u> on remotely called player with only 2 action points at maximum
3c.5 System updates current player's special action points
3d Current player informs system he no longer wants to use his special ability, case ends in failure