DD1363 Mvk07
Design Document

Strategic Web Based Management Game

Group 12

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5.1 CSC cards

Class Process	
Responsibilities	**Collaborators**
Verifies sent variables from the HTML forms and process them.	Alliance Text Message Ship Canon Missile battery Missile decoy Teleportation

Class Game Round	
Responsibilities	**Collaborators**
Create new map Create map objects Place map objects Create new high score list Knows all alliances Create Alliance End game round	Highscore Player Map Alliance

Class Highscore	
Responsibilities	**Collaborators**
Create escape point list Create close-to list	Player

Class Alliance	
Responsibilities	**Collaborators**
Represent name of alliance Represent all players of the alliance Add player to alliance Remove player from alliance	Player

Class Map	
Responsibilities	**Collaborators**
Draw map objects Create map object Validates if a square is stackable. Represent everything on the map. Perform add incoming missiles. Perform add incoming shells.	Wormhole Ship Resource square

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Class Research	
Responsibilities	**Collaborators**
Toogle engine research Toogle Cannon research Toogle research for each module	Engine Cannon Missile decoy Missile battery Powerplant Repair Teleportation Storage

Class Ship	
Responsibilities	**Collaborators**
Represent amount of main resource Represent amount of secondary resource Knows condition status Perform update main resource Perform update secondary resource Perform get coordinates. Perform change coordinates.	Modules Research Wormhole Resource square

Class Resource square	
Responsibilities	**Collaborators**
Represent amount of resource Subtract resource from square	

Class Wormhole	
Responsibilities	**Collaborators**
Notify the system about a winner	GameRound

Class MapObjectInterface	
Responsibilities	**Collaborators**
Represent map location Represent square-location Toogle stackable	Wormhole Ship Resource square

Class Player	
Responsibilities	**Collaborators**
Calculate Escape Points Knows when the player has been closet to the wormhole Know the highest escape point gain by player Knows which alliance the player belongs to (if any)	Ship

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Class Module	
Responsibilities	**Collaborators**
Perform ship movement. Perform cannon attack. Perform missile attack. Perform build shells. Perform build missile decoys. Perform build missile. Perform toggle auto repair. Perform teleportation. Perform update resources. Perform build module. Perform gather resource. Perform calculation of all storages. Represent all modules. Perform validate enough resources. Perform get amount of power plants.	Engine Cannon Missile Decoy Missile Battery Power Plant Repair Teleportation Storage main Storage secondary Player Ship

Class Module Interface	
Responsibilities	**Collaborators**
Perform upgrade module. Perform erase module. Perform get module level. Perform get research level. Represent level of module. Represent level of research. Represent cost of module to build Represent upgrade cost Upgrade module	Engine Cannon Missile Decoy Missile Battery Power Plant Repair Teleportation Storage main Storage secondary

Class Missile Battery	
Responsibilities	**Collaborators**
Perform change number of missiles. Perform change maximum amount of missiles. Represent amount of missiles. Represent maximum amount of missiles.	

Class Storage Main	
Responsibilities	**Collaborators**
Represent maximum amount of main resource.	

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Class Storage Secondary	
Responsibilities	**Collaborators**
Represent maximum amount of secondary resource.	

Class Engine	
Responsibilities	**Collaborators**

Class Teleportation	
Responsibilities	**Collaborators**

Class Repair	
Responsibilities	**Collaborators**
Knows if auto repair is on or off.	

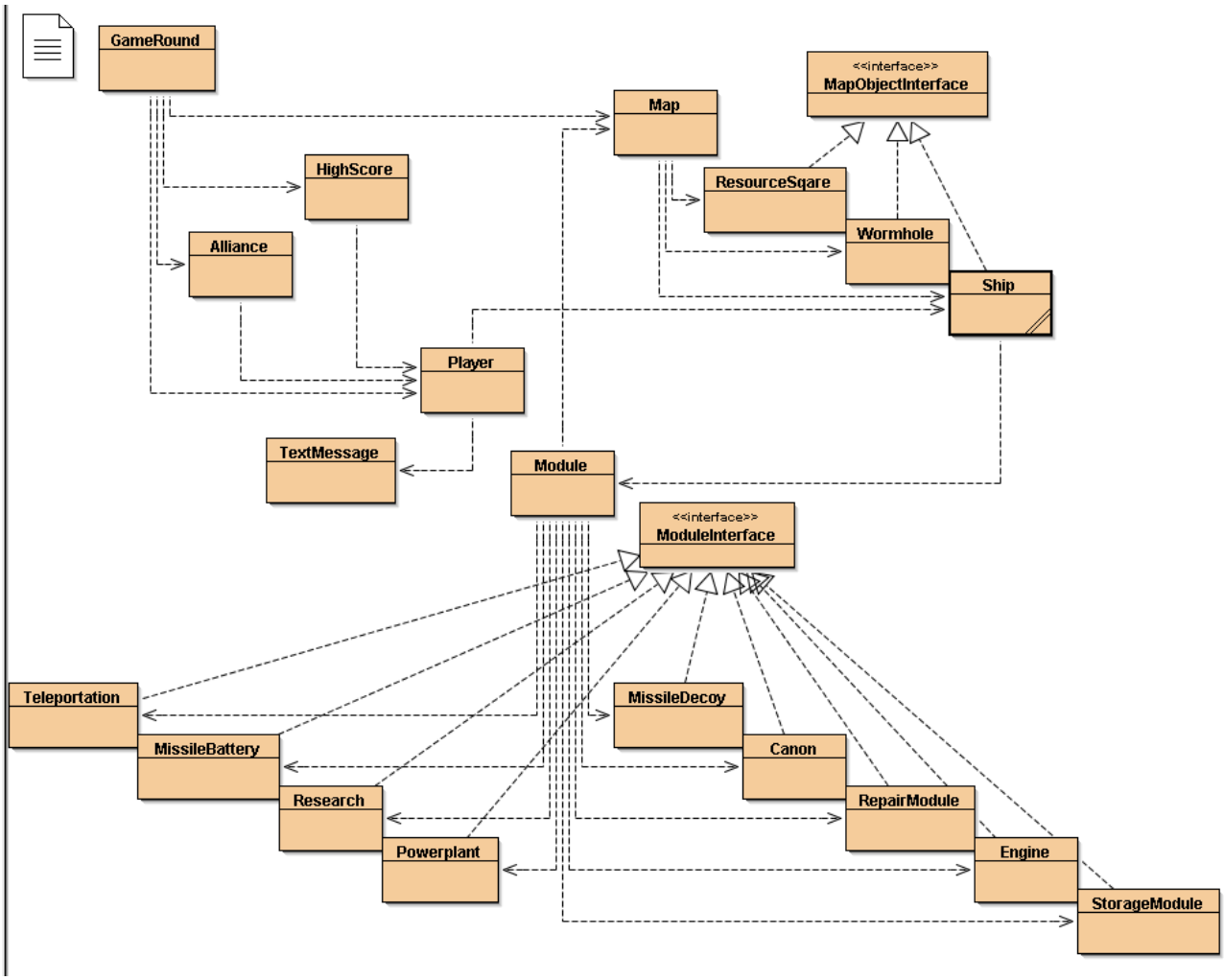
Class Power Plant.	
Responsibilities	**Collaborators**

Class Missile Decoy	
Responsibilities	**Collaborators**
Represent amount of decoys. Represent maximum amount of decoys. Perform change number of decoys. Perform change maximum number of decoys.	

Class Cannon	
Responsibilities	**Collaborators**
Represent amount of shells. Represent maximum amount of shells. Perform change number of shells. Perform change maximum number of shells.	

Class Text Message	
Responsibilities	**Collaborators**
Perform get all messages for a player. Perform send message. Perform remove message.	Player

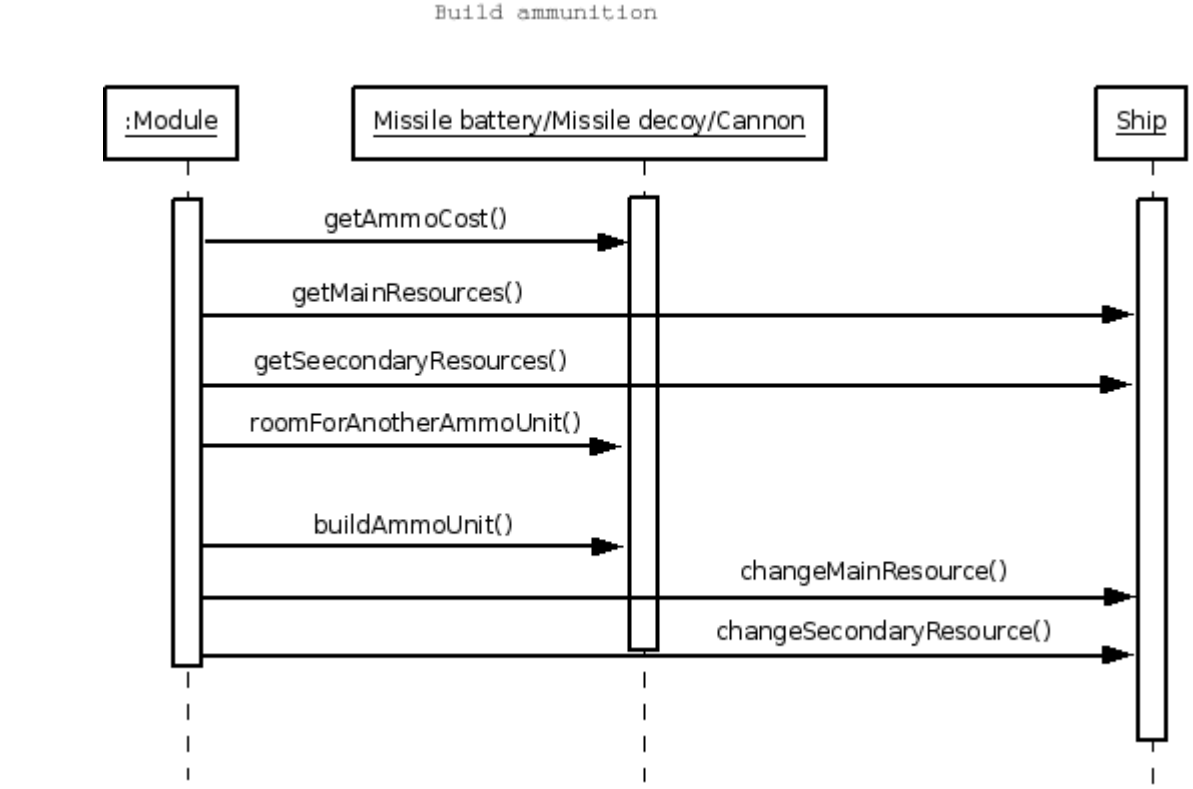
5.2 Class Diagram

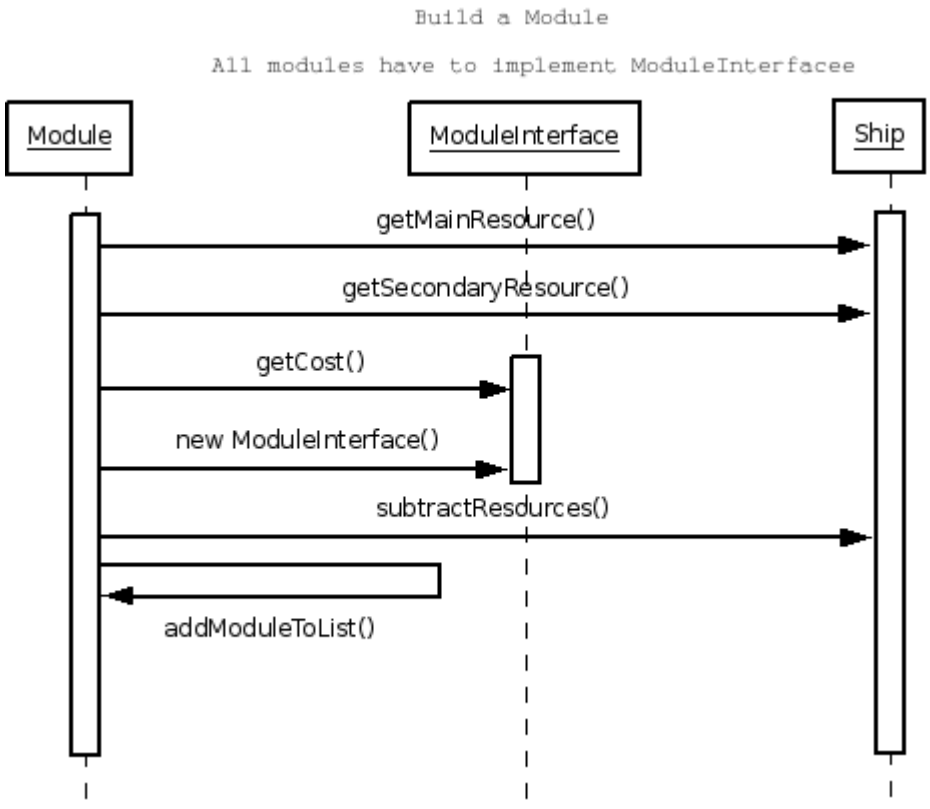


5.3 State Charts

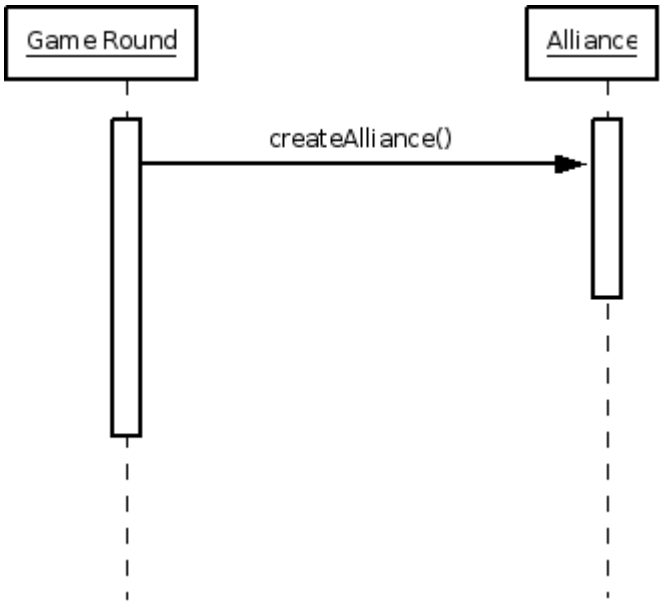
We didn't feel that there were any states of the system that could be plotted as state charts. The states that we could find (such as the login process and the process of a game round) felt too plain to be included, resulting in charts with next to none states.

5.4 Interaction Diagrams

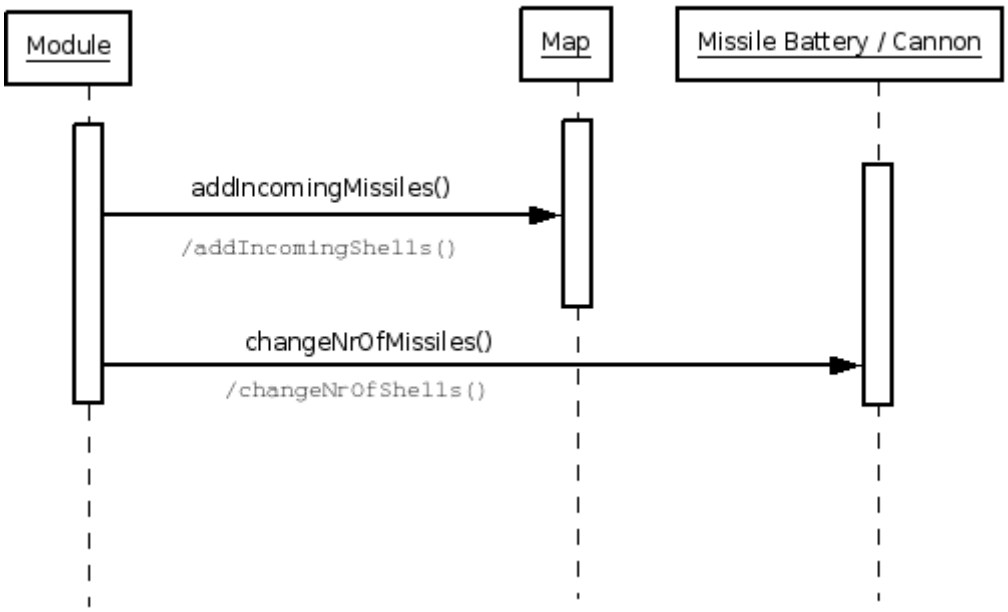




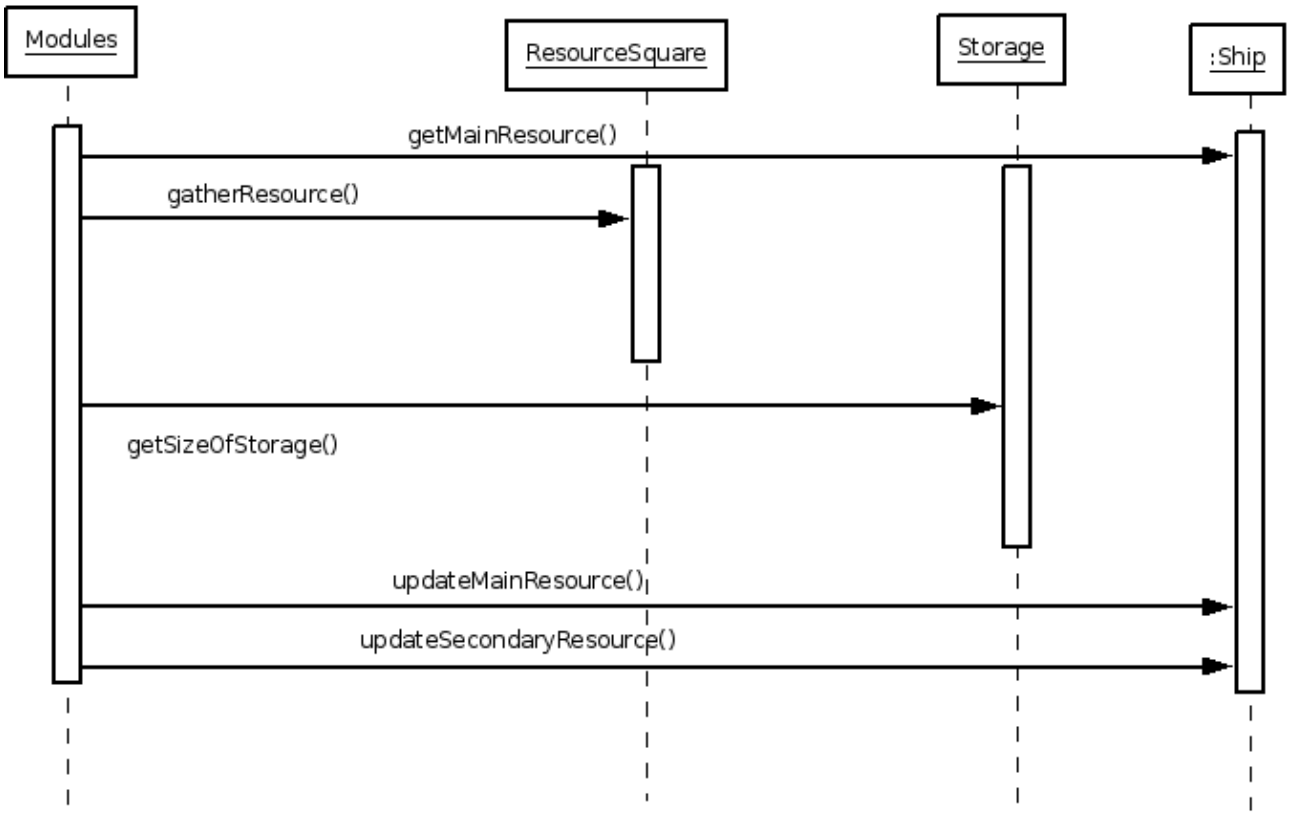
Create Alliance



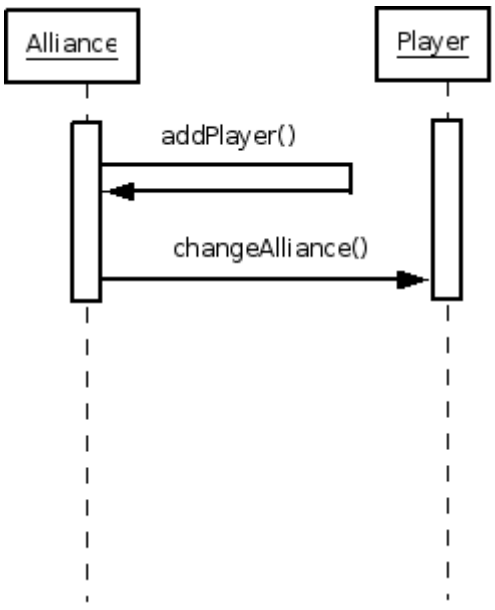
Fire missile/shell

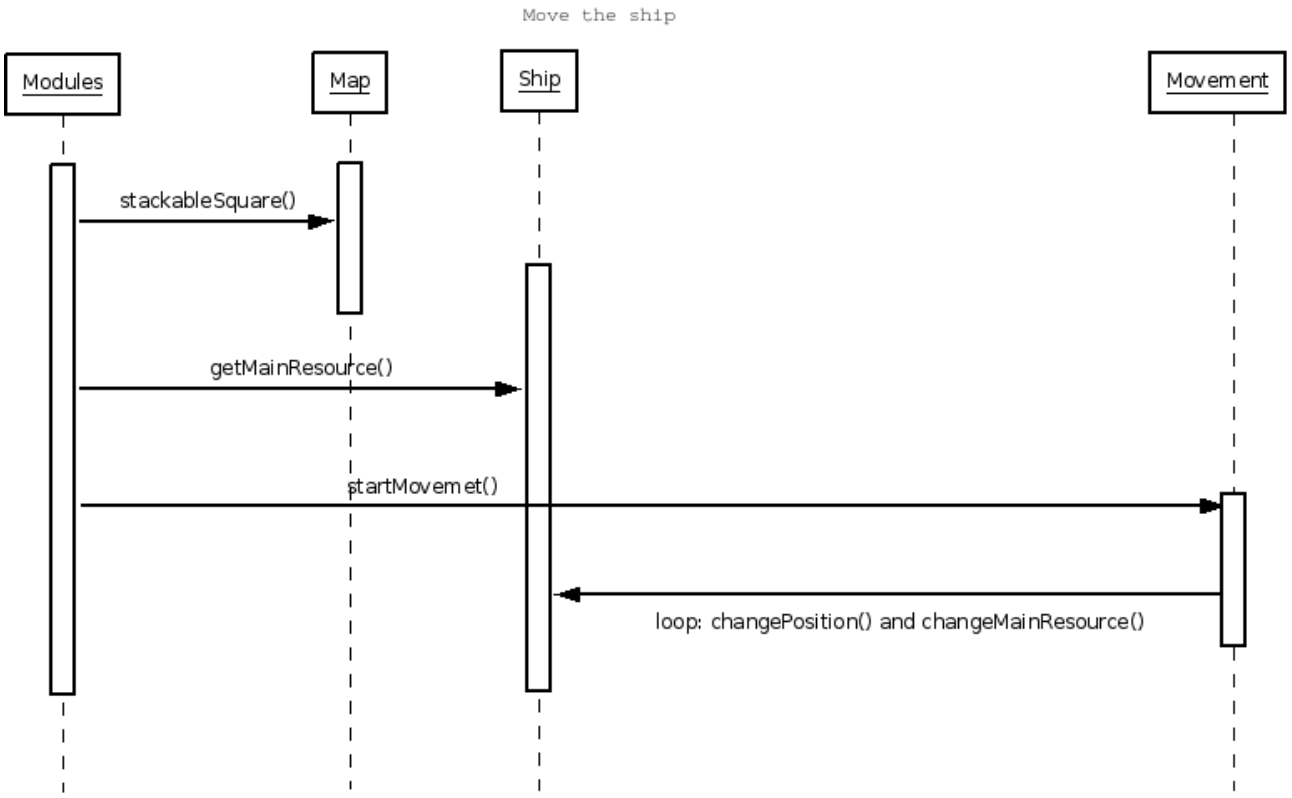


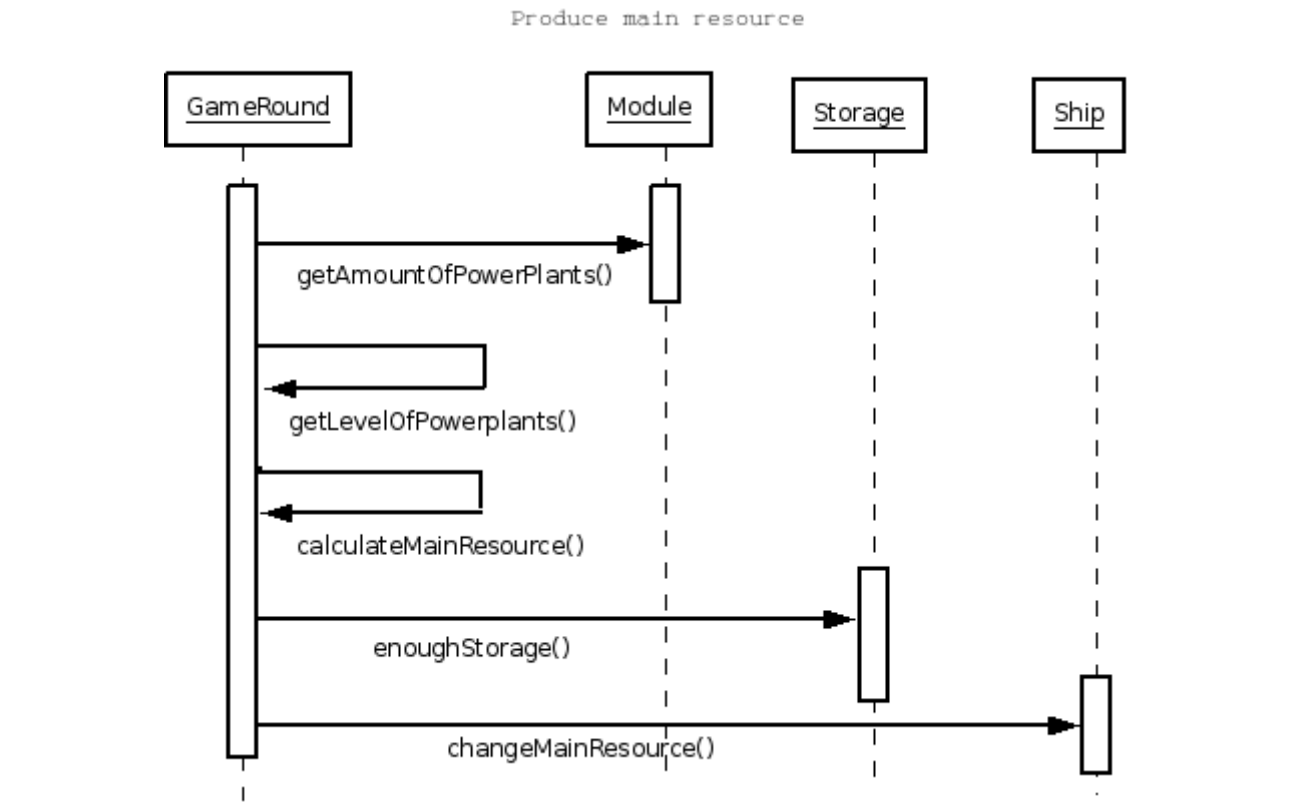
Gather resources



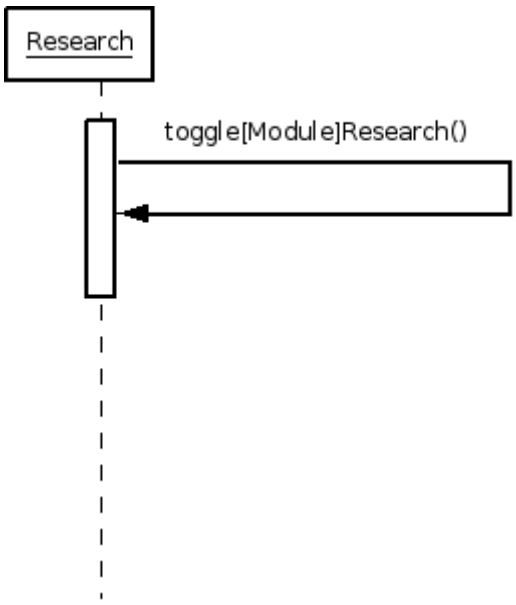
Join an Alliance



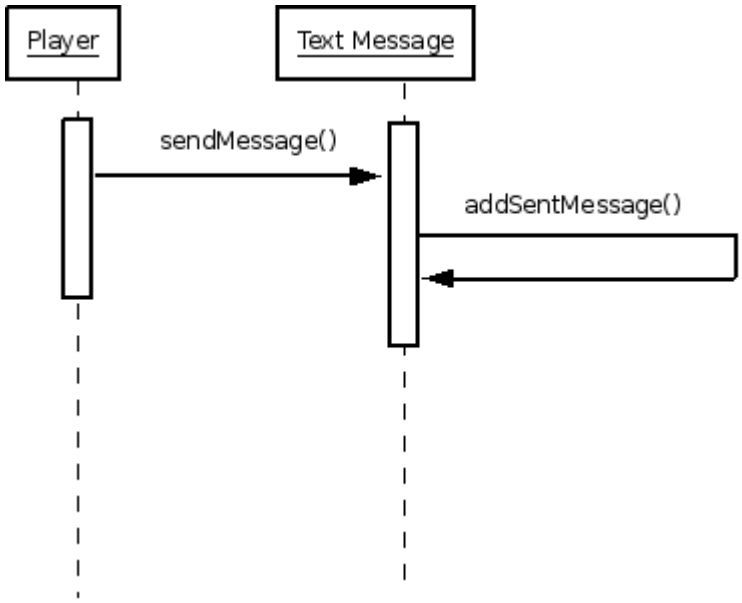

Move the ship
Modules
Map
Ship
Movement
stackableSquare()
getMainResource()
startMovemet()
loop: changePosition() and changeMainResource()

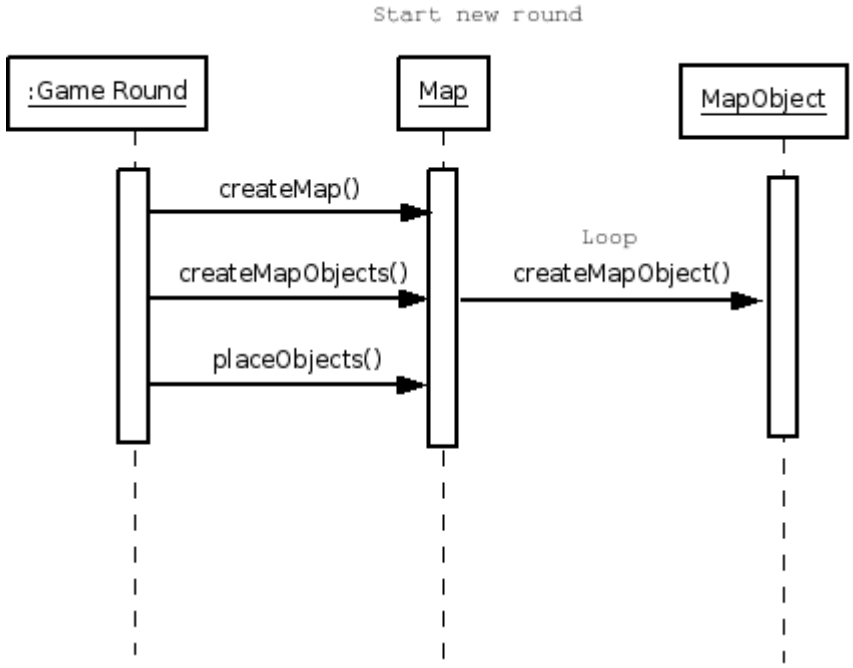

Produce main resource
GameRound
Module
Storage
Ship
getAmountOfPowerPlants()
getLevelOfPowerplants()
calculateMainResource()
enoughStorage()
changeMainResource()

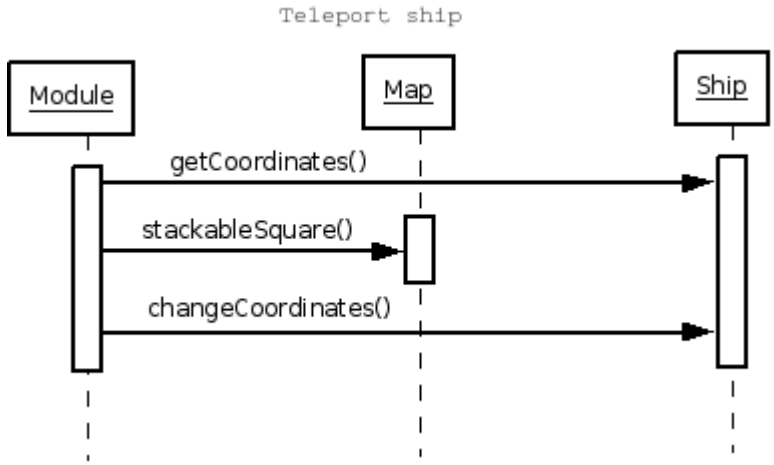
Research Field

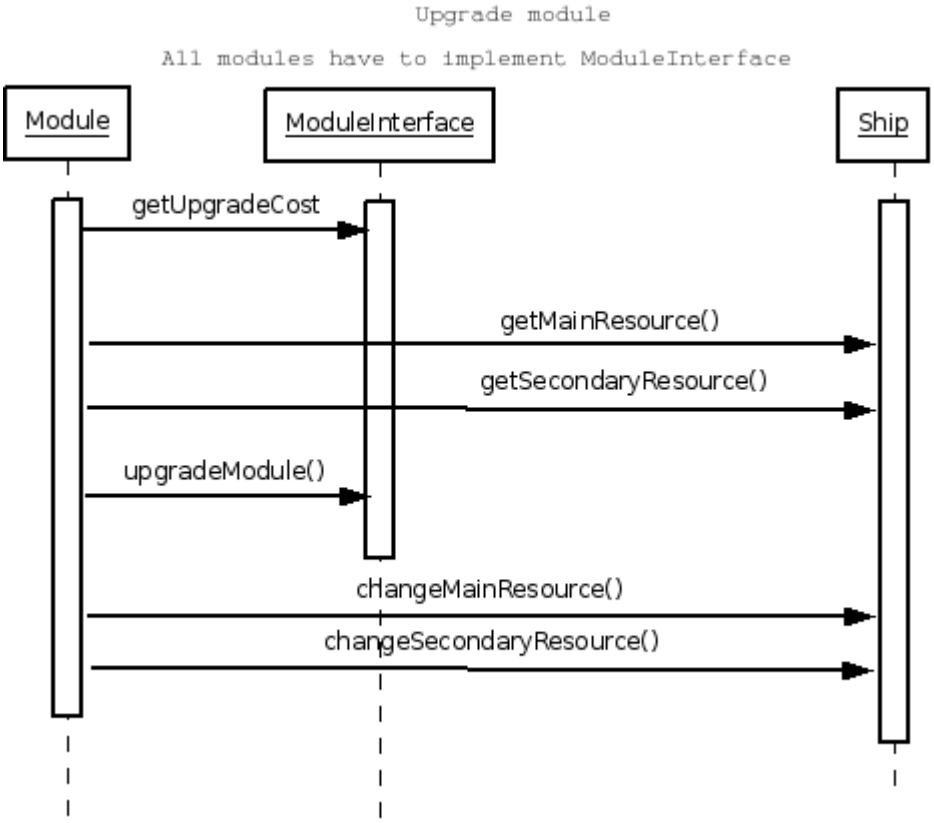


Send Text Message




Start new round
:Game Round
Map
MapObject
createMap()
Loop
createMapObjects()
createMapObject()
placeObjects()


Teleport ship
Module
Map
Ship
getCoordinates()
stackableSquare()
changeCoordinates()


Upgrade module
All modules have to implement ModuleInterface
Module
ModuleInterface
Ship
getUpgradeCost
getMainResource()
getSecondaryResource()
upgradeModule()
changeMainResource()
changeSecondaryResource()