

KRISH GAME USING GREENFOOT AND KINECT



SAN JOSÉ STATE UNIVERSITY

TEAM 21

SPRING 2015

CMPE 202- PROJECT REPORT

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1. USER STORIES:

Krrish Game estimation as screen shots:

User Story 1

- As a player I want a startup screen with Menu and Help so that I can start the game.



User Story 2

- As a player I want a terrain with Objects so that I can play Krrish Game.



User Story 3

- As a player I want to move krrish in all directions so that I can collect objects on the terrain.



User Story 4

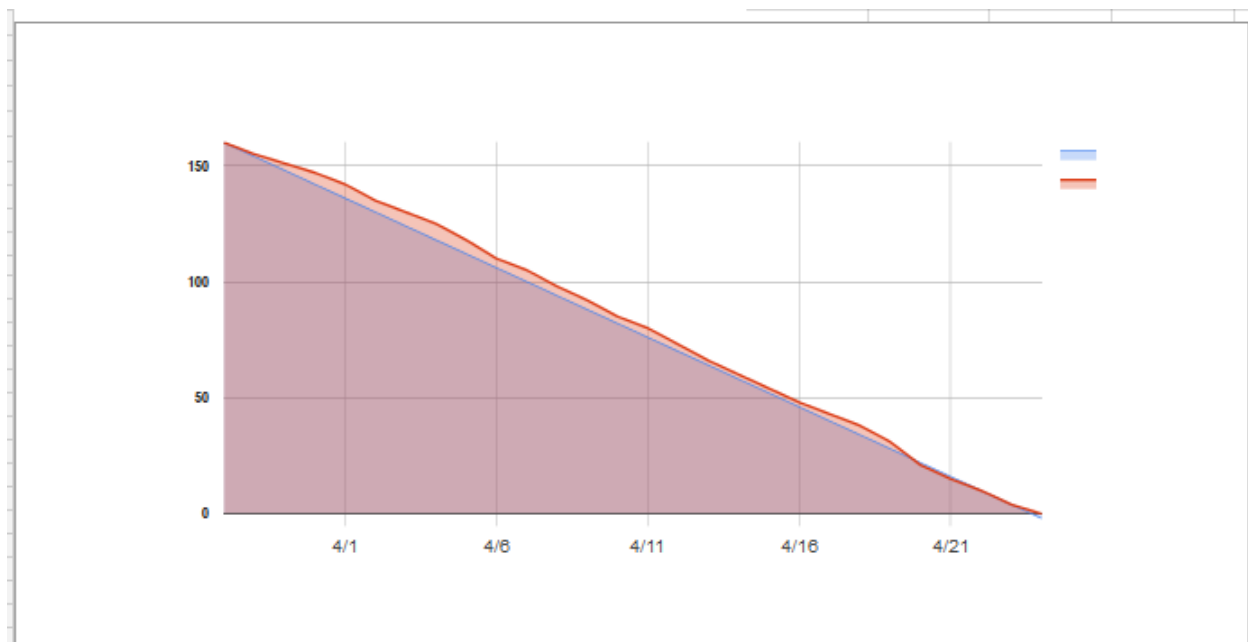
- As a player I want to view the health, score and ammunition so that I will know the progress of my game.



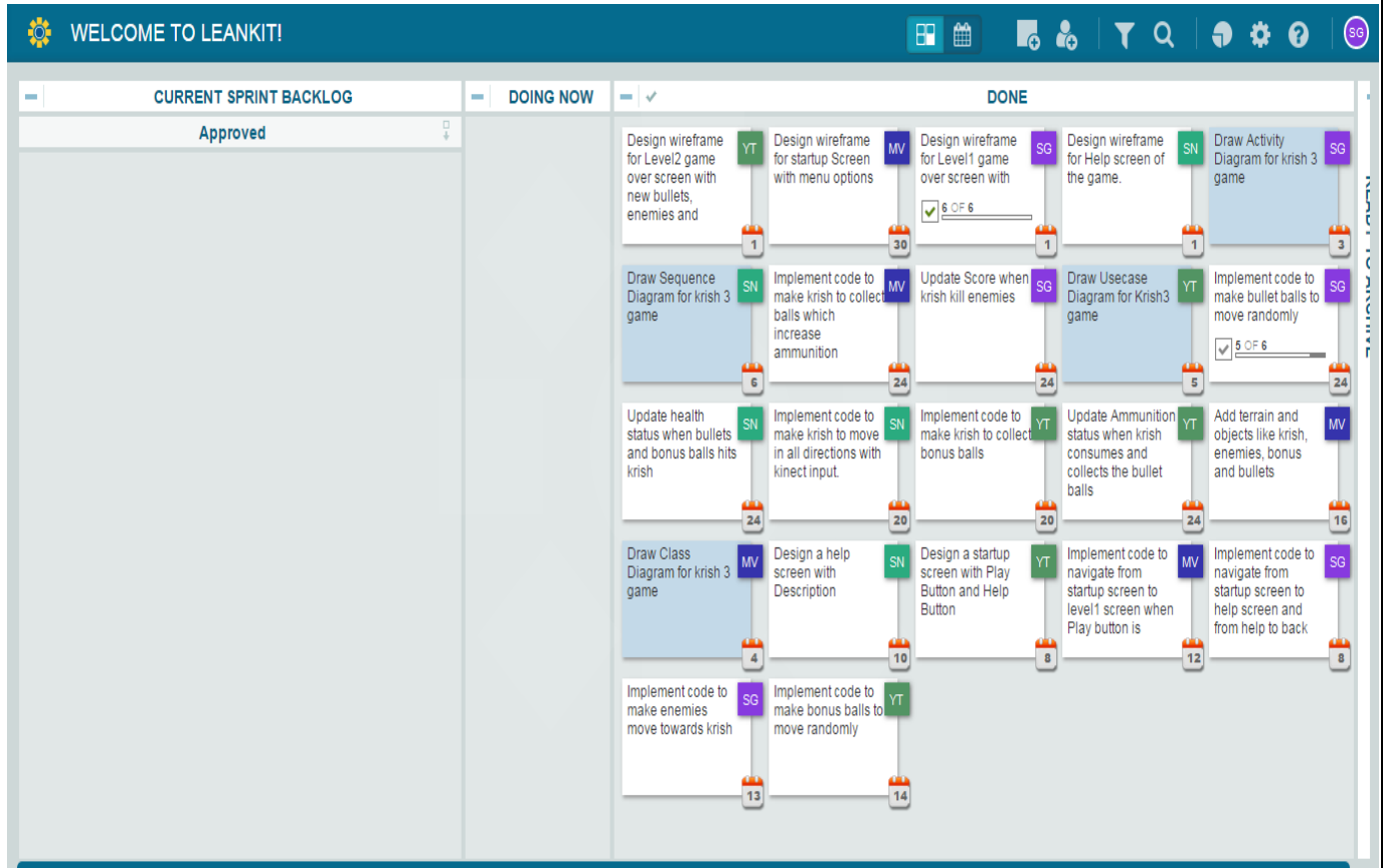
2. TEAM TASK BOARD

Backlog Item	Task	Task Owner	Initial Estimate (Total Sprint Hours = 40 X 4)	Week #1 (10 hrs / week)														Week #2 (10 hrs / week)														Week #3 (10 hrs / week)														Week #4 (10 hrs / week)													
				D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27	D28																												
				3/29	3/29	3/30	3/31	4/1	4/2	4/3	4/4	4/5	4/6	4/7	4/8	4/9	4/10	4/11	4/12	4/13	4/14	4/15	4/16	4/17	4/18	4/19	4/20	4/21	4/22	4/23	4/24																												
			160	160	155	151	147	142	135	130	124	118	112	105	98	92	85	80	73	66	60	54	48	43	38	31	21	15	10	4	1																												
UI Wireframes	Design wireframe for startup Screen with menu options	Mandheep	5	5	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Design wireframe for Level1 game over screen with different enemy objects,bullet objects, krish object and terrain	Gravani	5	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Design wireframe for level2 game over screen with new bullets, enemies and terrain	Yashaswi	5	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
Class Diagrams	Design Wireframe for Help Screen of the game	Sairam	5	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Draw Usecase Diagram for Krish 3 game	Yashaswi	5	5	5	5	5	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Draw Activity Diagram for krish 3 game	Gravani	5	5	5	5	5	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Draw Class Diagram for krish 3 game	Mandheep	5	5	5	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Draw Sequence Diagram for krish 3 game	Sairam	7	7	7	7	7	6	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
As a player i want a startup screen with Menu and Help so that i can start the game	Design a startup screen with Play Button and Help Button	Yashaswi	5	5	5	5	5	5	5	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Design a help screen with Description	Sairam	5	5	5	5	5	5	5	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Implement code to navigate from startup screen to level1 screen when Play button is clicked	Mandheep	10	10	10	10	10	10	10	10	10	9	7	5	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Implement code to navigate from startup screen to help screen and from help to back screen	Gravani	5	5	5	5	5	5	5	5	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																												
	Add terrain and objects like krish, enemies, bonus and bullets	Mandheep	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	3	2	1	0	0	0	0	0	0	0	0	0																												
As a player i want a tentian with Objects so that i can play Krish Game	Implement code to make enemies move towards krish	Gravani	10	10	10	10	10	10	10	10	10	10	10	10	10	9	7	5	4	2	0	0	0	0	0	0	0	0	0	0	0																												
	Implement code to make bonus balls to move randomly	Yashaswi	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	7	5	4	2	1	0	0	0	0	0	0	0	0	0																												
	Implement code to make bullet balls to move randomly	sravani	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8	6	5	4	3	2	1	0	0	0	0																												
	Implement code to make krish to move in all directions with kiined input	Sairam	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	13	12	11	10	8	6	5	4	2	0	0	0	0	0																												
As a player i want to move krish in all directions so that i can collect objects on the terrain	Implement code to make krish to collect bonus balls	Yashaswi	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	7	6	5	4	2	0	0	0	0	0																												
	Implement code to make krish to collect balls which increase ammunition	Mandheep	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	12	10	8	6	4	3	1	0	0	0																												
	Update health status when bullets and bonus balls hits krish	Sairam	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7	6	4	2																												
As a player i want to view the health, score and ammunition so that i will know the progress of my game	Update Score when krish kill enemies	Gravani	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	2	1	0	0																												
	Update Ammunition status when krish consumes and collects the bullet balls	Yashaswi	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	3	2	1	0																												

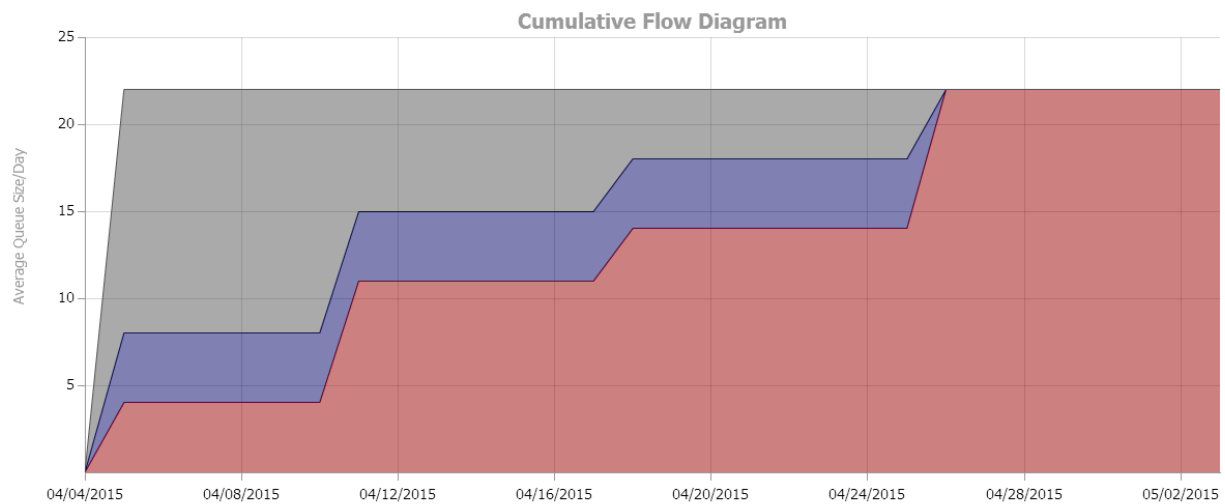
3. BURN DOWN CHART



4. KANBAN BOARD

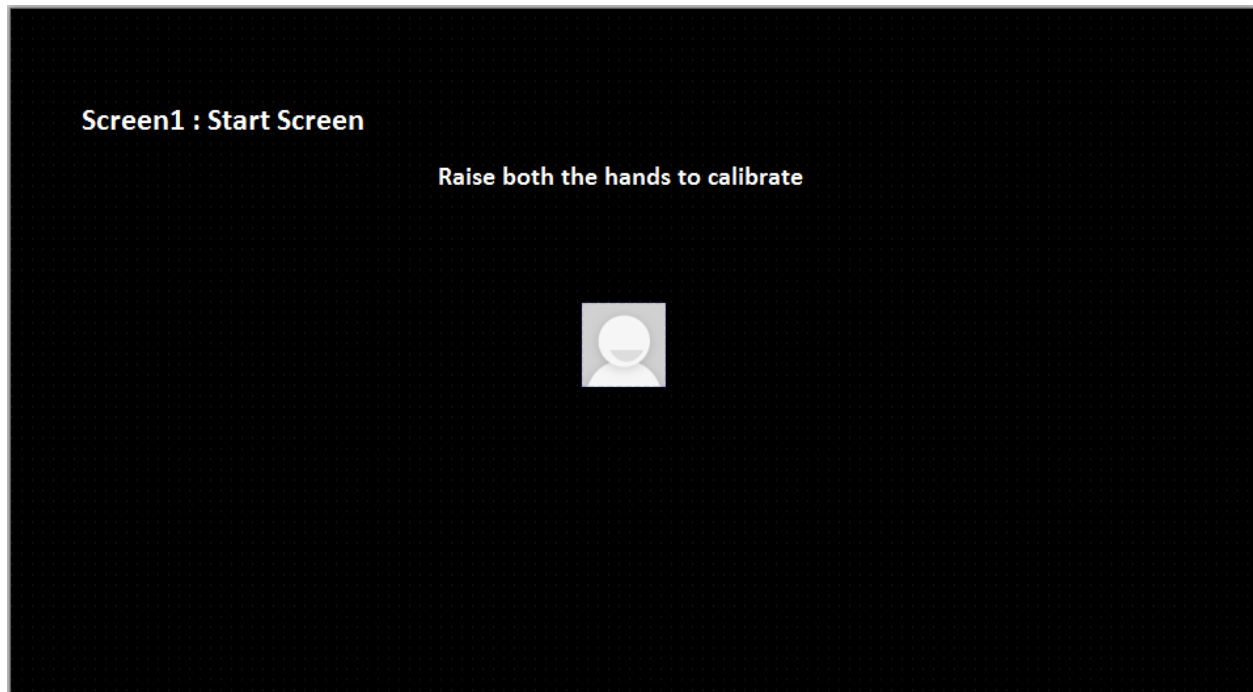


5. CUMULATIVE WORKFLOW



6. UI WIREFRAMES

Screen 1:



Screen 2:

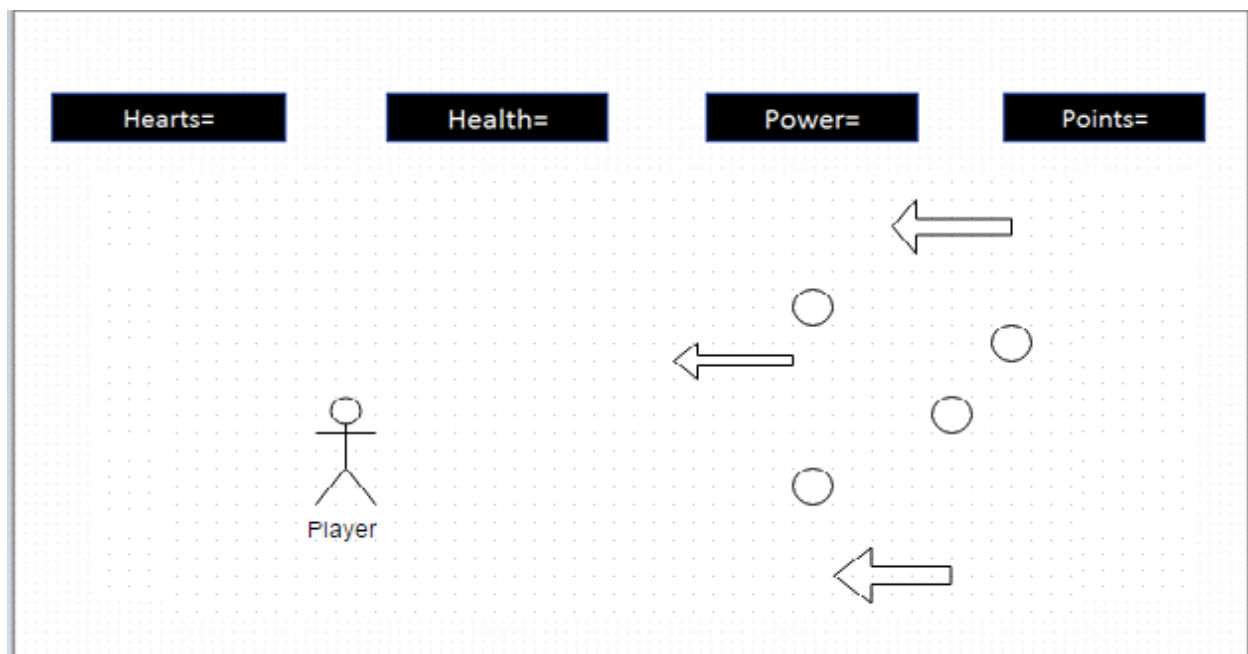


Screen 3:

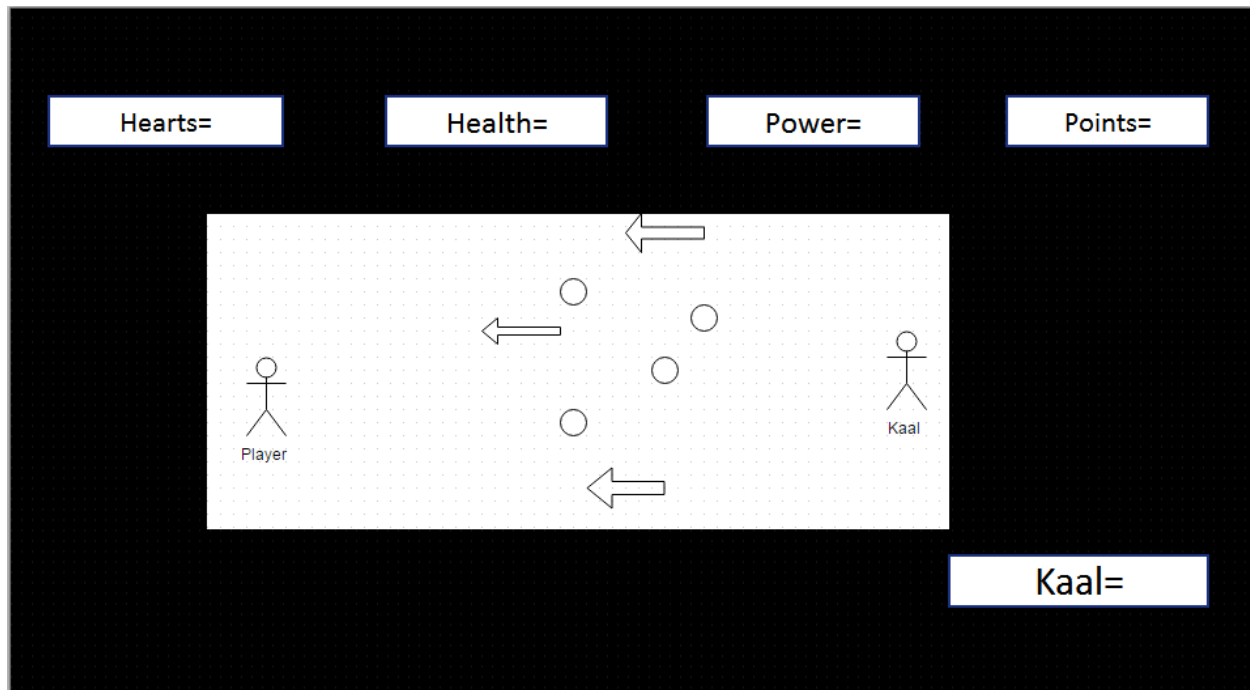


Screen 4:

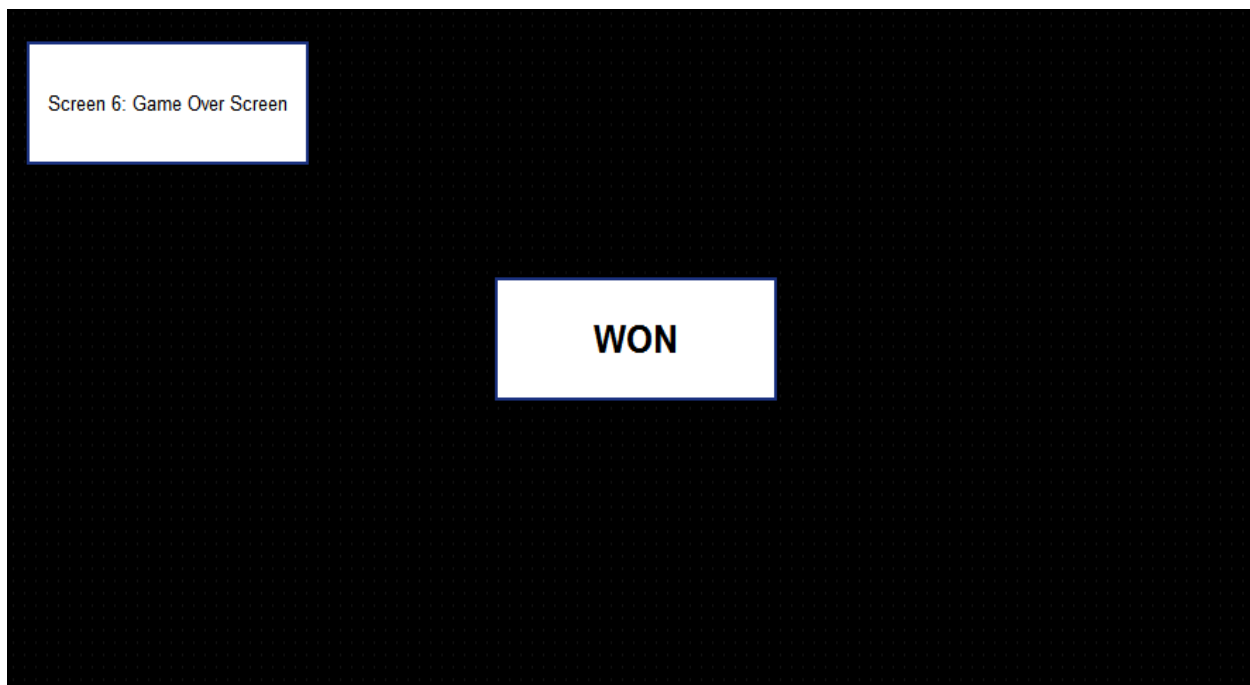
Main Screen for Level 1 and Level 2



Screen 5:
Main Screen for Level 3

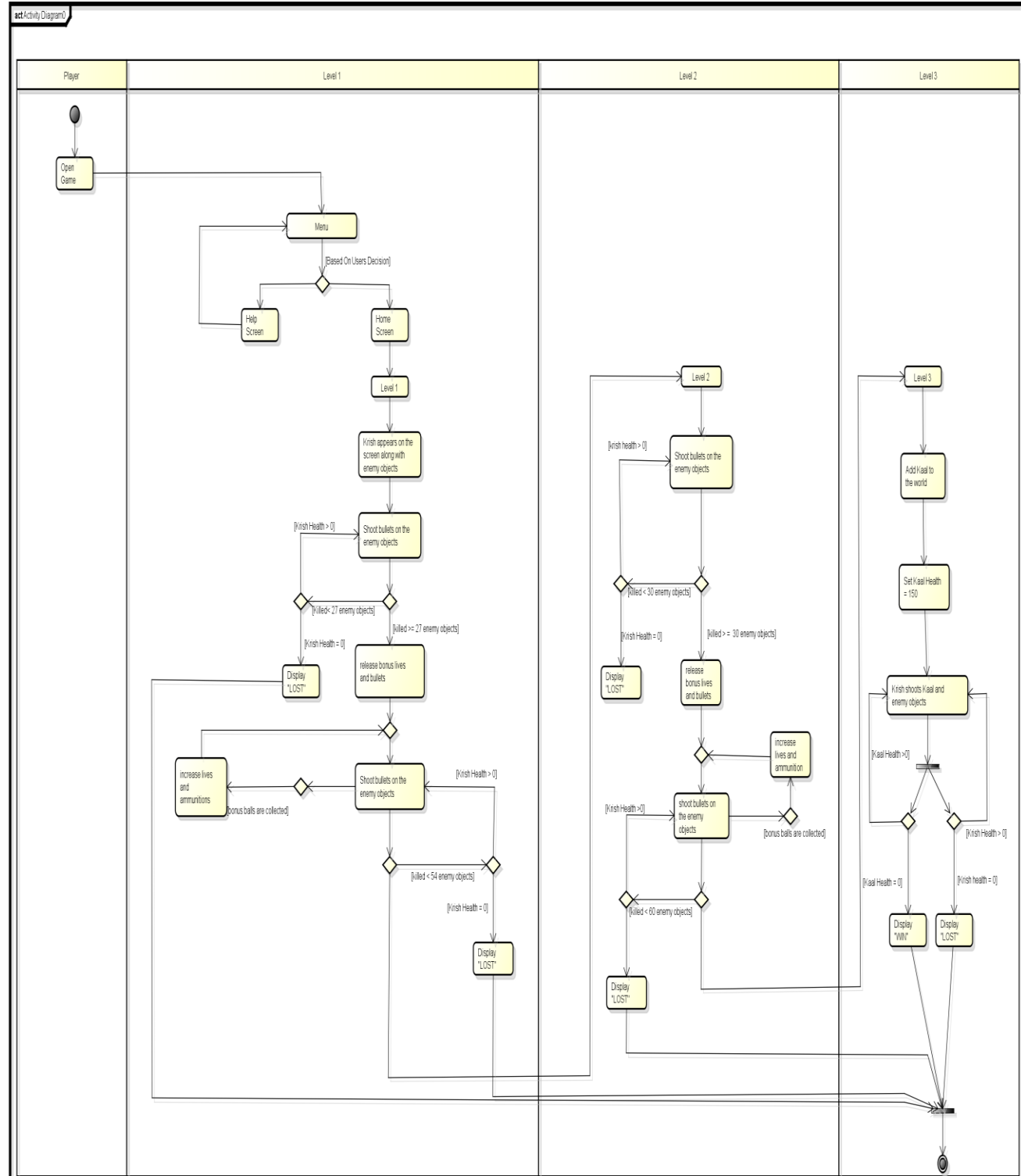


Screen 6:
Game over screen

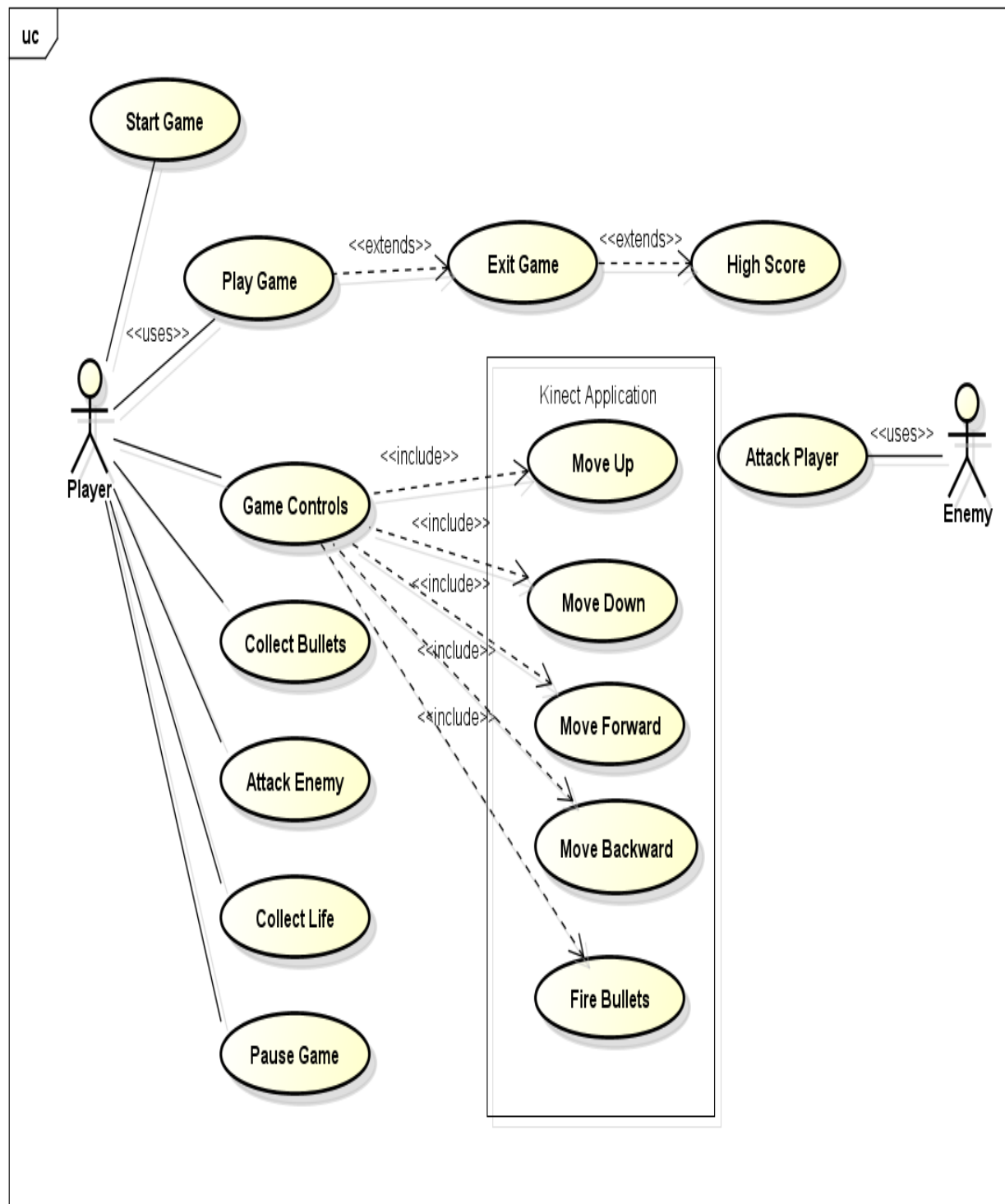


7. UML ANALYSIS MODELS

7.1 Activity Diagram



7.2 Use Case Overview Diagram

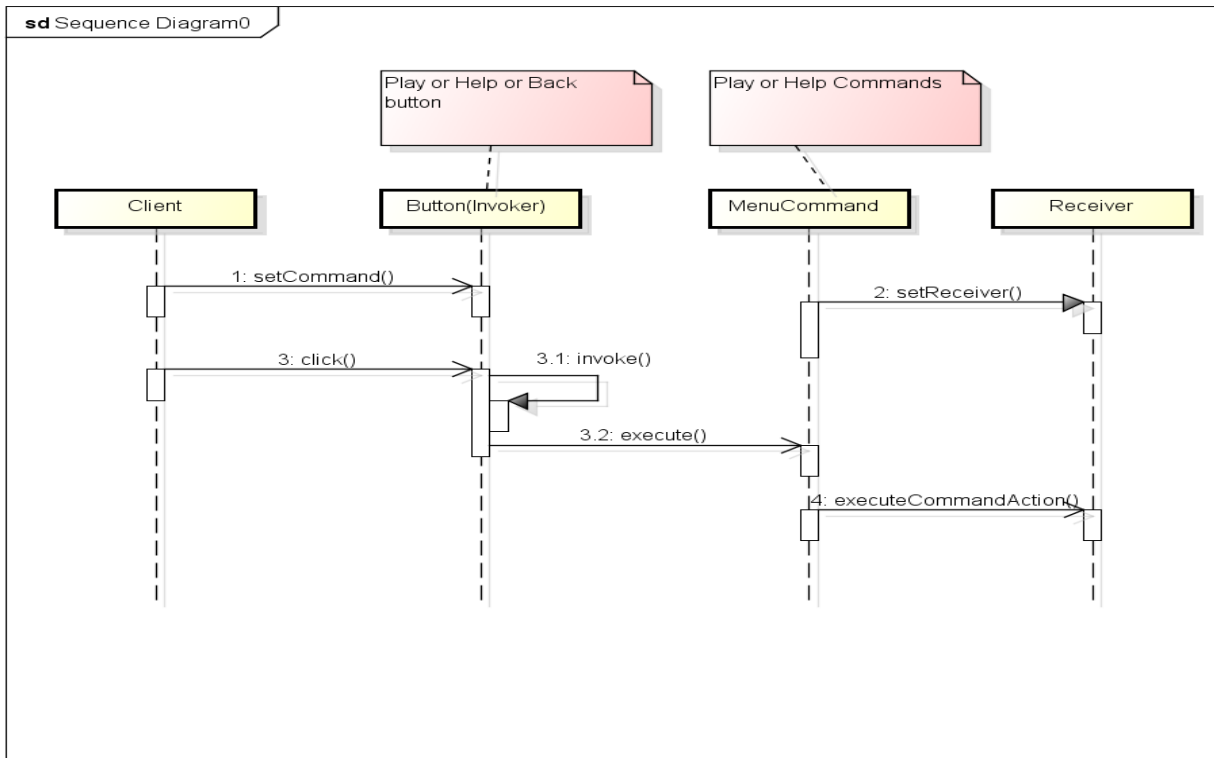


7.3 Use Case Specification

7.3.1 Use case Specification – Play Game

Use case name	Play Game	
Related Requirements	-	
Goal In Context	A player starts the game in order to move further in the game.	
Preconditions	After the player is calibrated with the kinect, the player moves his hands for the object to move on the terrain	
Successful End Condition	The Krish object on the terrain should move successfully and shoot the enemy objects.	
Failed End Condition	The object doesn't move on the terrain.	
Primary Actors	Player	
Secondary Actors	Kinect	
Triggers	The player moves his hands for the object to move.	
Main Flow	Step	Action
	1	The player is calibrated with kinect device
	2	The Krish object on the terrain moves as the player moves his hands
	3	The Krish object can kill the enemy objects.
	4	The state or lives of Krish depends on how well he kills the enemy objects.
Extensions	Step	Branching Action

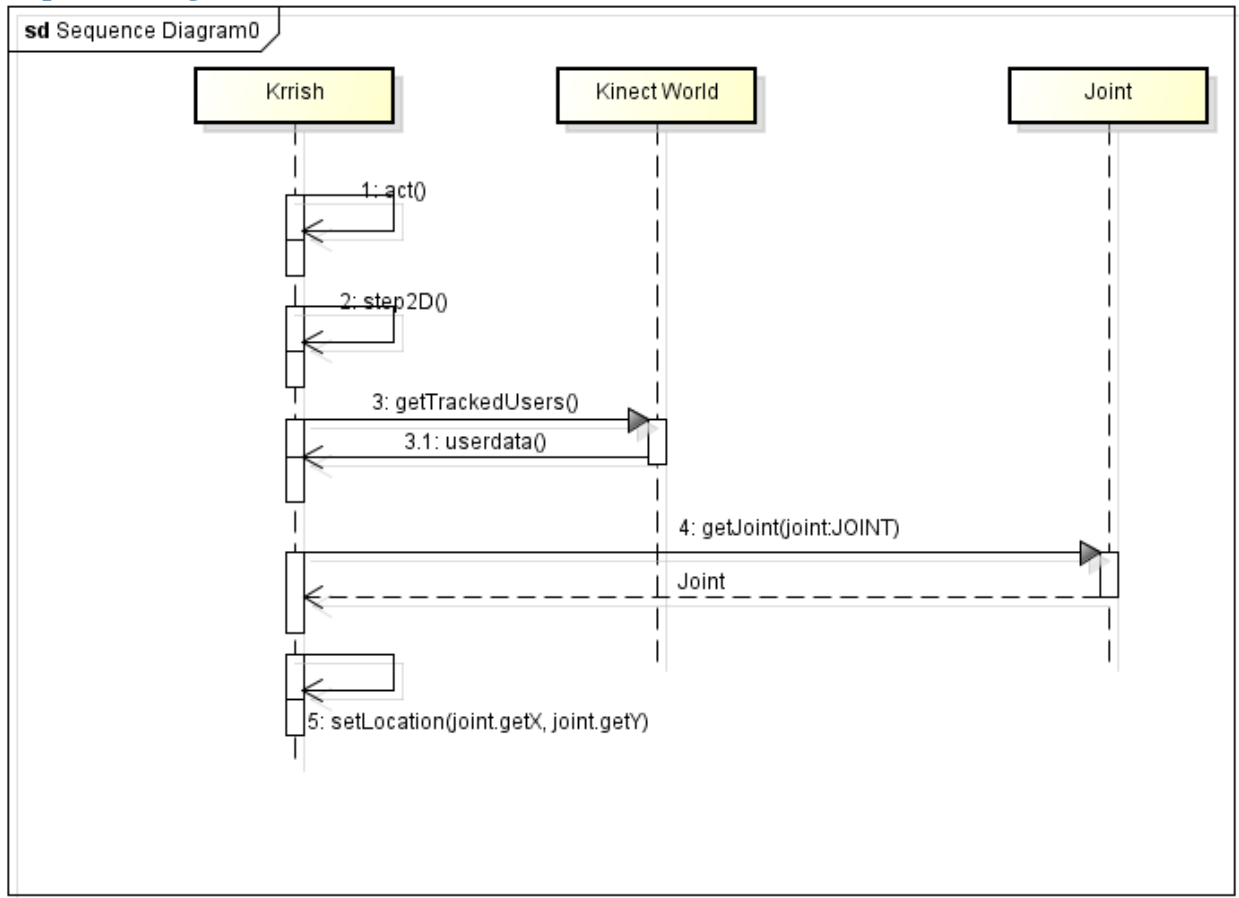
Sequence Diagram



7.3.2 Use case Specification – Game Controls

Use case name	Game Controls	
Related Requirements	-	
Goal In Context	The Krish object on the terrain should be able to move successfully all around.	
Preconditions	The player should start the game and get calibrated in order to move.	
Successful End Condition	The Krish object should be able to move in all directions, that is, left, right, top or bottom depending on the movements of the user.	
Failed End Condition	The object doesn't move on the terrain.	
Primary Actors	Player	
Secondary Actors	Kinect	
Triggers	The player moves his hands for the object to move.	
Main Flow	Step	Action
	1	The player is calibrated with kinect device
	2	The Krish object on the terrain moves as the player moves his hands
	3	The Krish object moves left, right, top or bottom as the player needs.
Extensions	Step	Branching Action

Sequence Diagram



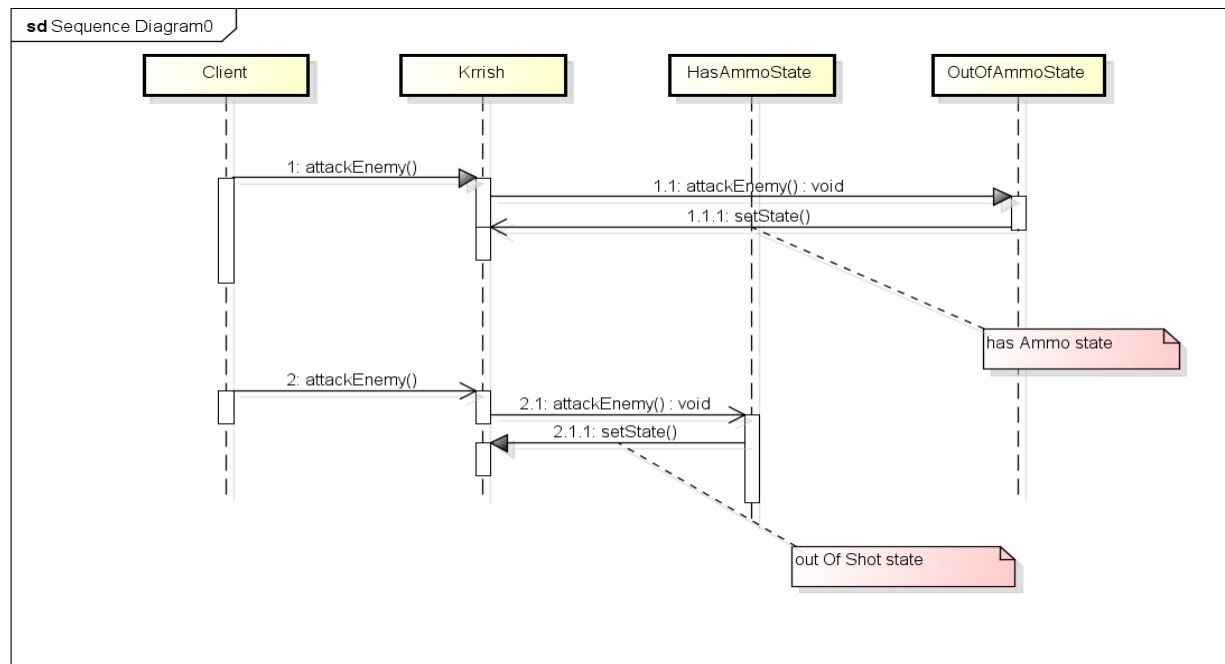
7.3.3 Use Case Specification – Collect Bullets

Use case name	Collect Bullets	
Related Requirements	-	
Goal In Context	The Krish object will loose all his bullets as he kills the enemy objects. So he can collect the bullets randomly when he touches a bullet ball.	
Preconditions	The player should be able to move the Krish object on the terrain in all directions and to collect the extra bullet balls the object should kill minimum 27 enemy objects in the first case.	
Successful End Condition	The Krish object should be able to collect the bullet objects and gain the extra bullets to kill the enemy objects.	
Failed End Condition	The Krish objects misses to touch the bullet balls while moving around the terrain.	
Primary Actors	Player	
Secondary Actors	Kinect	
Triggers	The player moves his hands for the Krish object to collect the bullet balls.	
Main Flow	Step	Action
	1	The player is calibrated with kinect device
	2	The Krish object on the terrain moves as the player moves his hands
	3	The Krish object moves left, right, top or bottom as the player needs.
		The Krish object collects the bullet balls when ever he is
Extensions	Step	Branching Action

7.3.5 Use Case Specification – Collect Life

Use case name	Collect Life	
Related Requirements	-	
Goal In Context	The Krish object on the terrain should be able collect the extra bonus lives appearing on the terrain	
Preconditions	The player should kill minimum 27 enemy objects in order for the extra bonus lives to appear on the screen.	
Successful End Condition	The Krish object succesfully collects the bonus lives and increases his health	
Failed End Condition	The Krish objects misses to collect the bonus life balls.	
Primary Actors	Player	
Secondary Actors	Kinect	
Triggers	The player moves his right hand to move the Krish object to collect the bonus lives.	
Main Flow	Step	Action
	1	The player is calibrated with kinect device
	2	The Krish object should be able to move around the terrain.
	3	When the players sees the bonus life balls on the terrain, he tries to touch them so that he can gain extra lives.
Extensions	Step	Branching Action

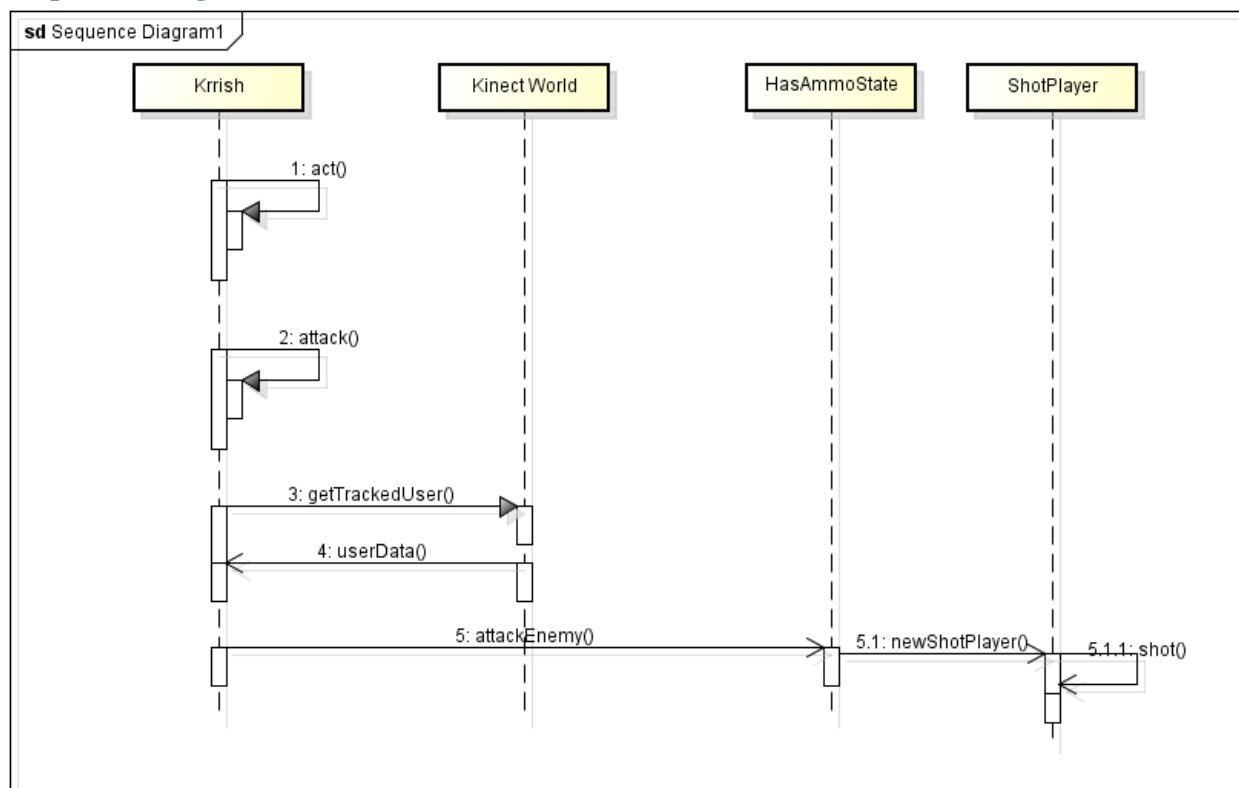
Sequence Diagram for collecting bullets and collecting life:



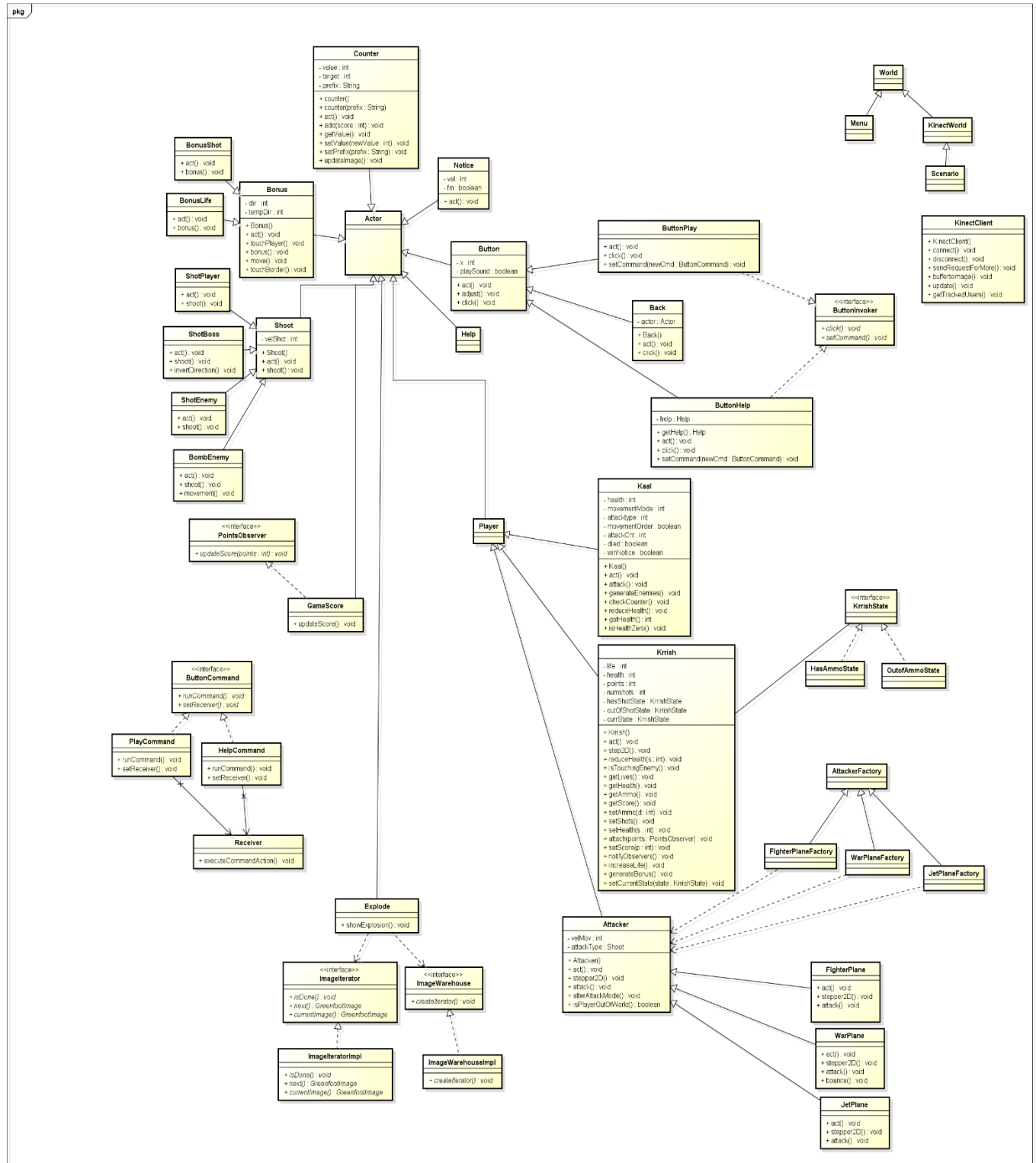
7.3.4 Use Case Specification – Attack Enemy

Use case name	Attack Enemy	
Related Requirements	-	
Goal In Context	The Krish object on the terrain should be able kill the enemy objects which are on his path.	
Preconditions	The player should start the game and be able to shoot the enemy objects with his movement of left hand.	
Successful End Condition	The Krish object should be able to kill the enemy objects.	
Failed End Condition	Bullets should not be generated when the player moves his left hand.	
Primary Actors	Player	
Secondary Actors	Kinect	
Triggers	The player moves his left hand to release the bullets.	
Main Flow	Step	Action
	1	The player is calibrated with kinect device
	2	The Krish object should be able to release the bullets when player moves his left hand above his head.
	3	When the bullets are released they should directly hit the enemy object for it to be exploded.
Extensions	Step	Branching Action

Sequence Diagram

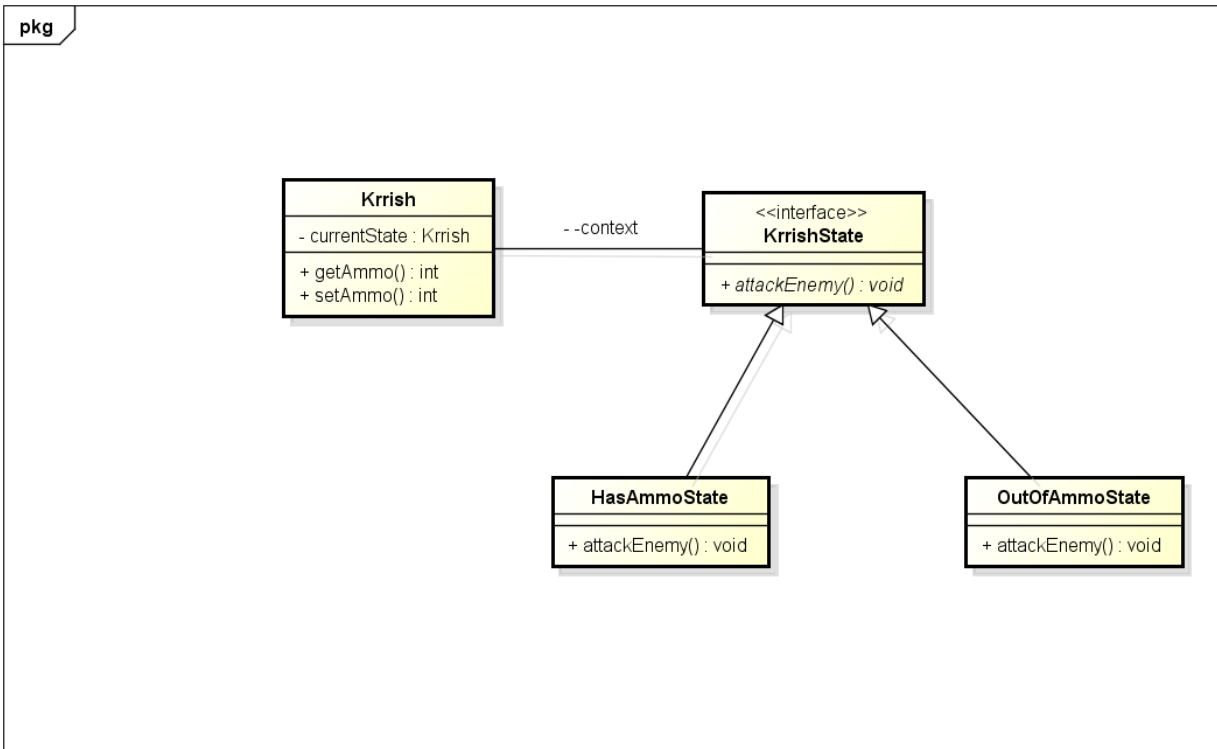


8. UML CLASS DIAGRAM

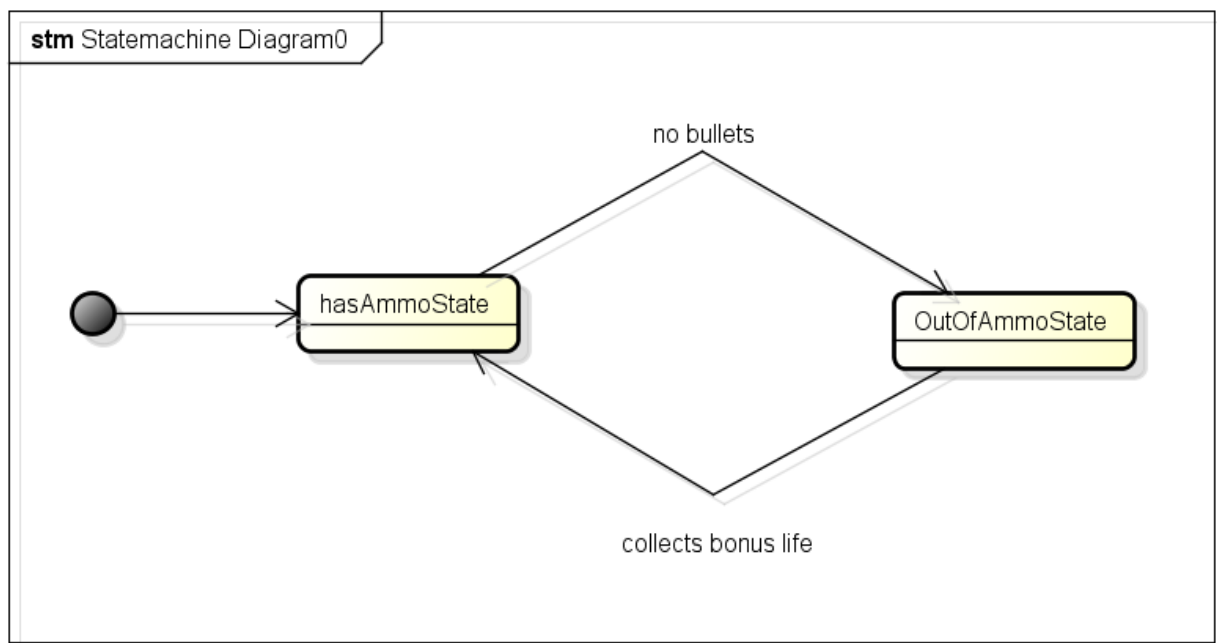


State Design Diagram

Class Diagram:

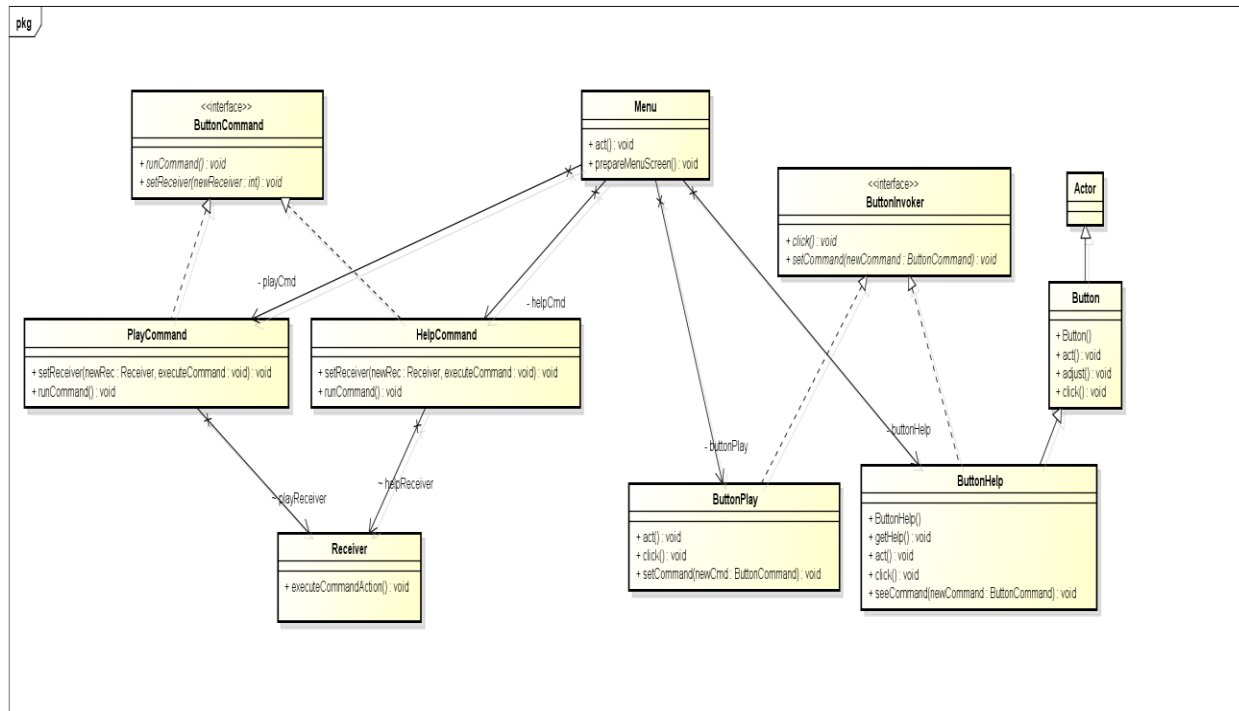


State Diagram:



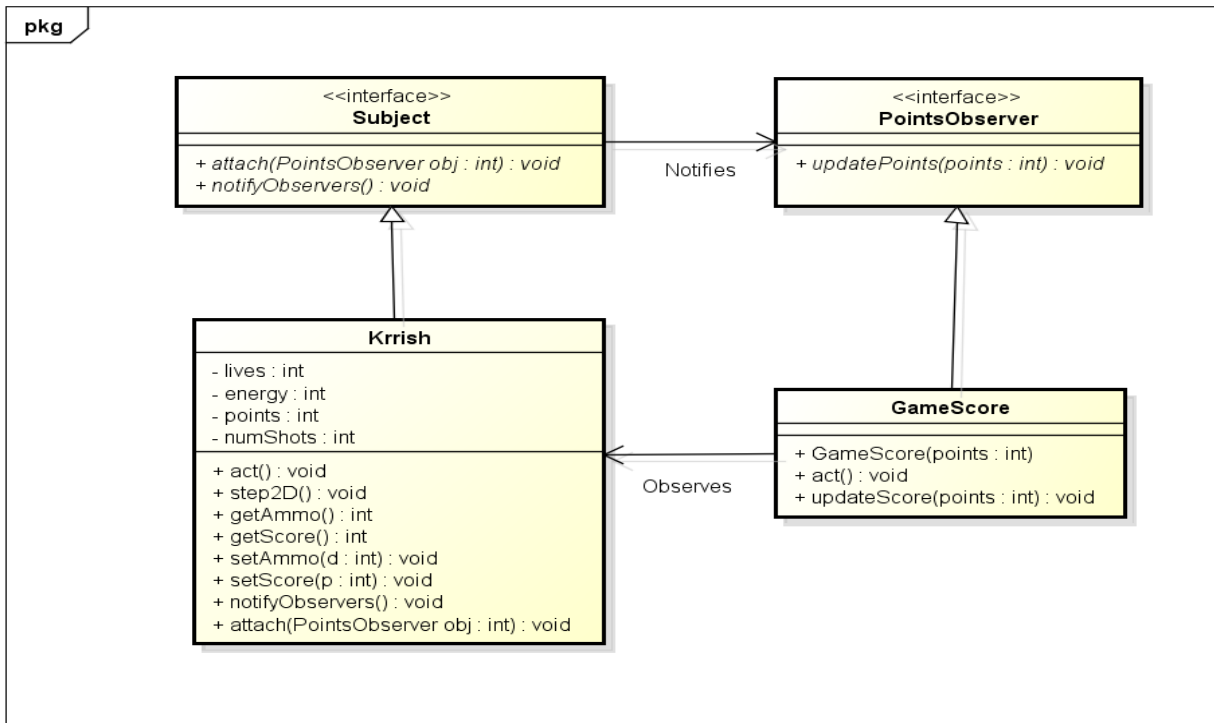
Command Design Diagram

Class Diagram:

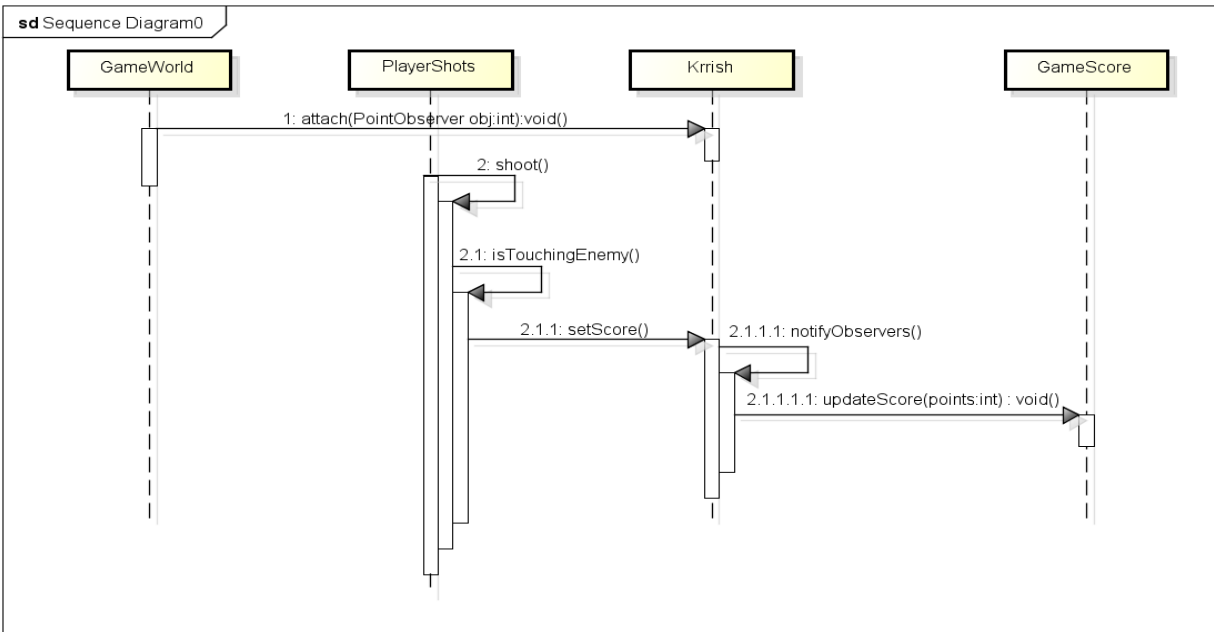


Observer Design Diagram

Class Diagram:

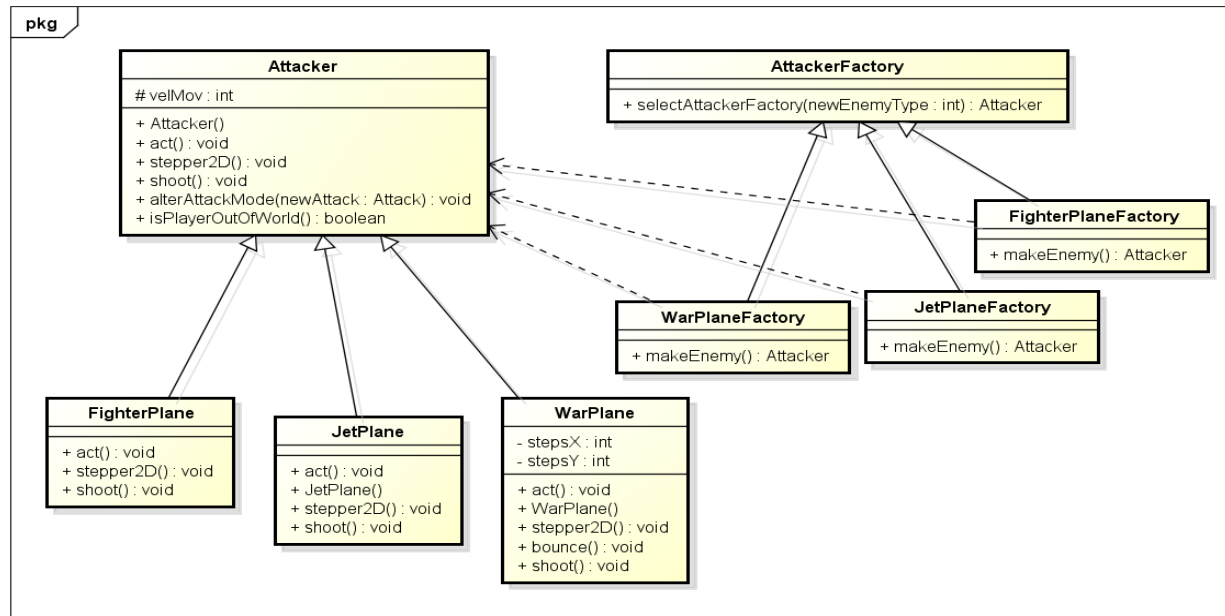


Sequence Diagram:

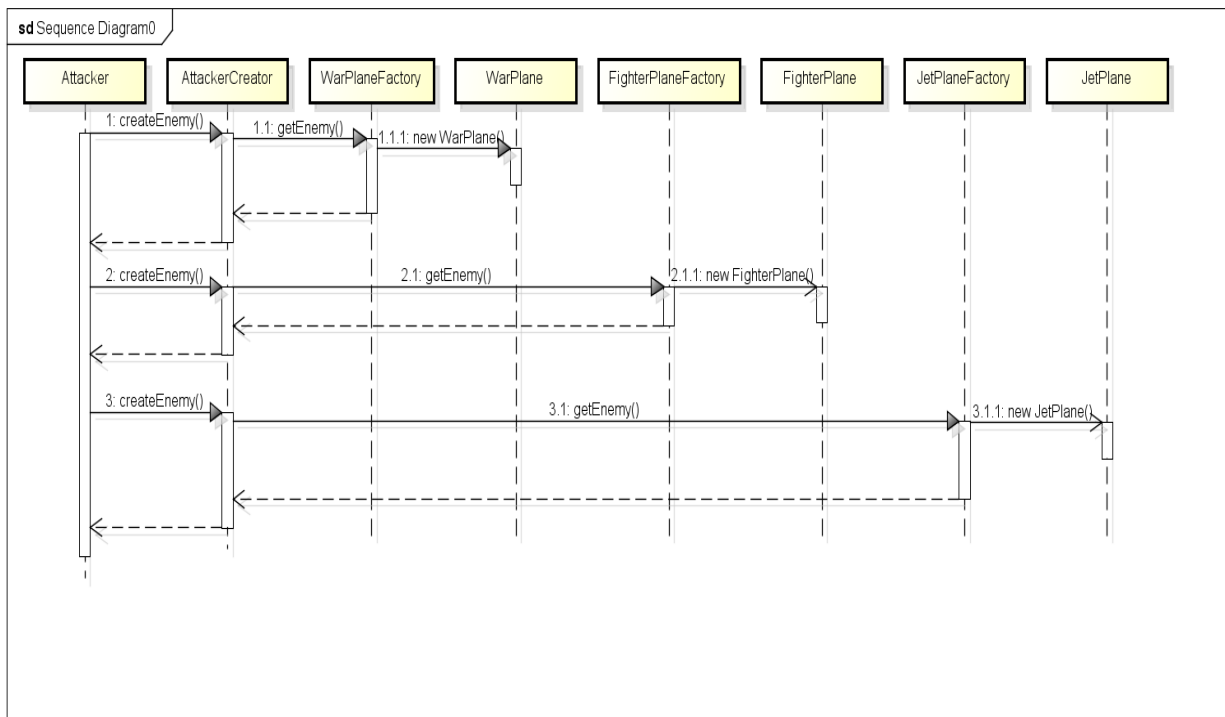


Factory Design Diagram

Class Diagram:

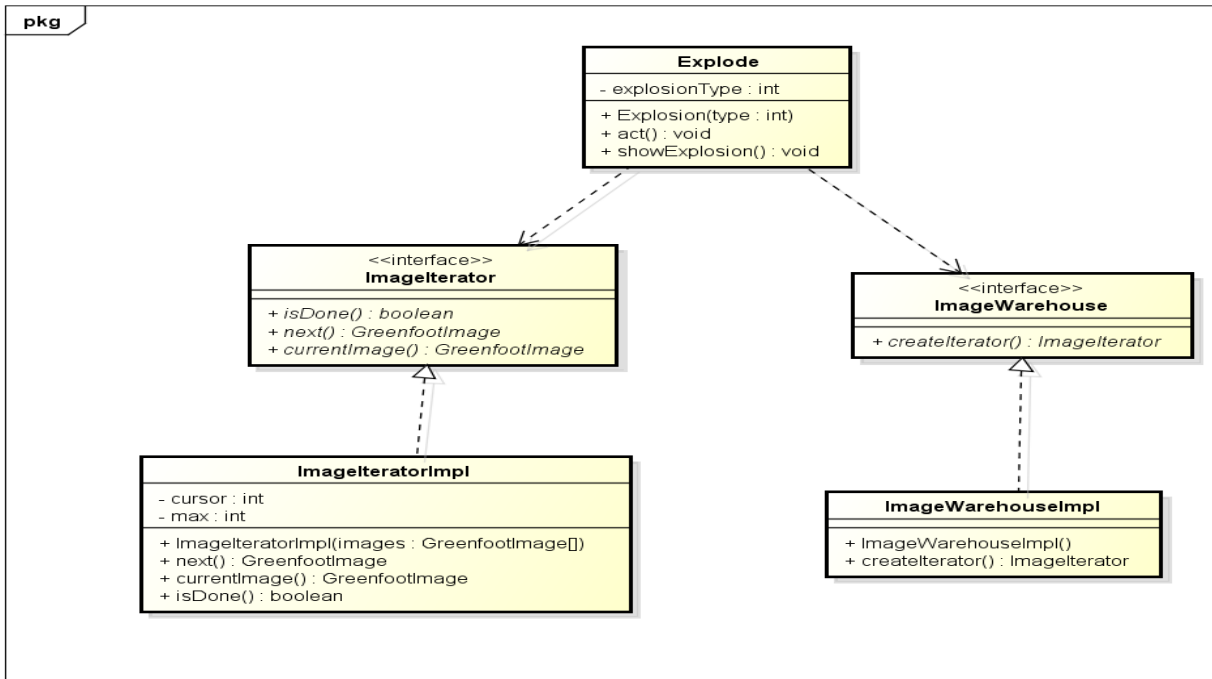


Sequence Diagram:

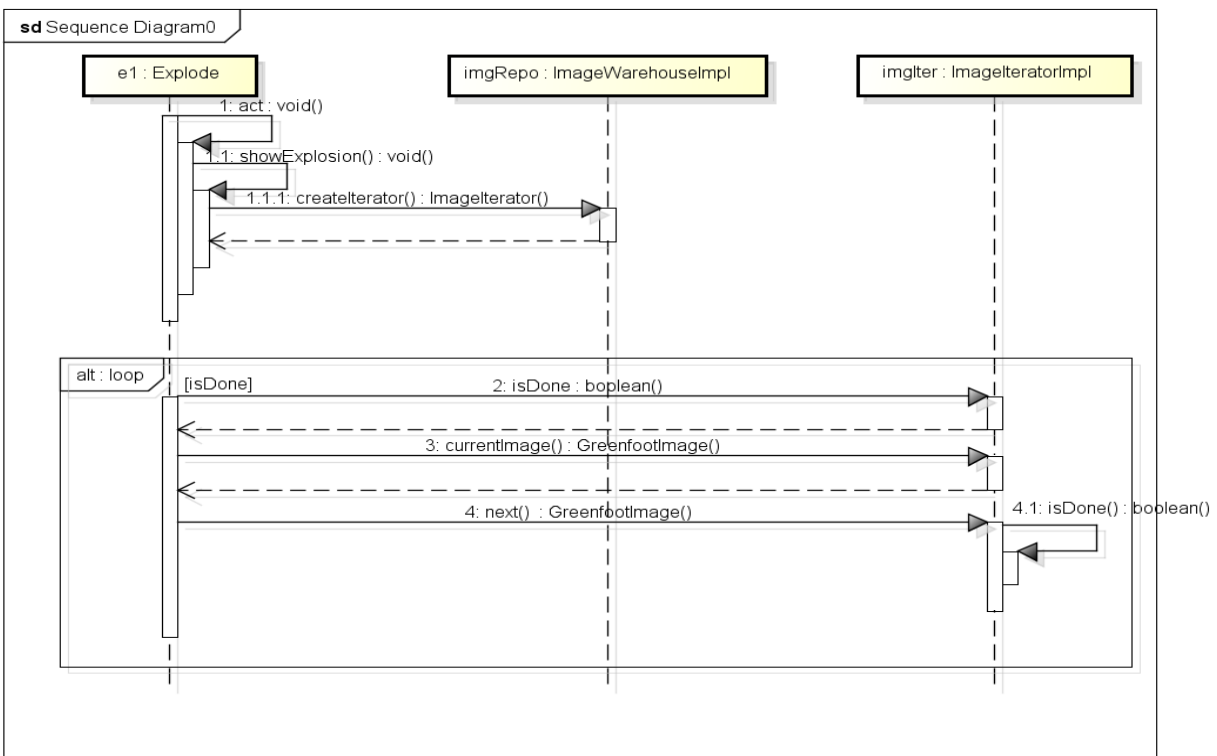


Iterator Design Pattern

Class Diagram:



Sequence Diagram:



9. You Tube Video URL

<http://youtu.be/MUhl-gNW1U0>