

Project Design Document

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Project Concept

1

Player Control

You control a

Spaceship

in this

top Down

game

where

Arrow keys

makes the player

Move in its bottom part of the screen in all directions

Power keys

Use power Ups and power Downs collected

Shoot key

Shoot forward in the player's direction

2

Basic Gameplay

During the game,

Enemies' spaceships and obstacles

appear

from

Center of the screen (for both player)

Shoot

Its position, toward player's spaceship

Opponent's spaceship

Move

Its top part of the screen

Shoot

Its position, forward direction

points objects, power ups and downs

Appear

Center of the screen (for both player)

and the goal of the game is to

Destroy opponent's spaceship or collect more points than the opponent player at the end of the timer of the game.

3

Sound & Effects

There will be sound effects

When players or enemies' spaceships shoot

When player's spaceship is hit by a shot

when enemies' spaceships are destroyed

When points objects are collected

When power ups or downs are collected

and particle effects

When enemies' spaceships or obstacles are destroyed

When player's spaceship is destroyed

When a point object is destroyed

[optional] There will also be

- particle effect on spaceships engines*
- Background sound during the game*
- a scrolling background of the space*
- sound during the collection of some points object*

4

Gameplay Mechanics

As the game progresses,

Enemies' spaceships move toward a predefined position of the screen

Obstacles move vertically from the center of the screen to the top/bottom side

Points objects move vertically from the center of the screen to the top/bottom side

Power ups and downs are used

making it

The position from where they start to shoot

The player could avoid or destroy them

The player could collect them or not

Add different behavior to the player's spaceship or to the opponent's spaceship

[optional] There will also be

A maximum number of enemies' spaceship in the screen
Obstacle (meteor) rotates during their movement

5

User Interface

| The | will | whenever |
|-------|----------|---|
| Score | Increase | points objects are collected by the player |
| Score | Increase | Enemies or obstacles are destroyed |
| Score | Decrease | points objects are destroyed |
| Lives | Increase | Special points object collected |
| Lives | Decrease | Enemies' or opponent's spaceship shots hit the player's spaceship |
| Lives | Decrease | Obstacle hits the player's spaceship |
| Lives | Decrease | Obstacle touch the top/bottom of the screen |
| Lives | Decrease | Enemies' spaceships touch the player's spaceship (by damage points) |
| Timer | Decrease | Every second is passed |

At the start of the game, the title

| | |
|---|-------------|
| Get the space title with Input controller for 2 players | will appear |
|---|-------------|

and the game will end when

| |
|--|
| Player spaceship runs out of lives or timer ends |
|--|

6

Other Features

- A cooldown bar that Increases Its value when player shoots continuously
- when a player run out of lives the opponent must keep play until the timer ends, If It runs out of lives the computer wins and the 2 players lose.

Project Timeline

| Milestone | Description | Due |
|-----------|--|------|
| #1 | <ul style="list-style-type: none"> - Player1 movement In Its side of the screen - Player2 movement In Its side of the screen - player1 shoots - player2 shoots | 4/14 |
| #2 | <ul style="list-style-type: none"> - Creation of enemies' spaceship and move them to the predefined position (for both players): spelled with 1 and 2 to understand which player side they are referred | 4/19 |

- enemies' spaceship1 shoot toward player1
- enemies' spaceship2 shoot toward player2
- destroy enemy1's spaceship when hit by player1 shot
- score1 Increase after previous point
- show score1 In the UI
- destroy enemy2's spaceship when hit by player2 shot
- score2 Increase after previous point
- show score2 In the UI
- destroy enemy1's bullet and enemy2's bullet when they hit the player

#3

- creation of obstacles and move them vertically to the top/bottom side (for both players): spelled with 1 and 2 to understand which player side they are referred
- destroy obstacles1 when hit by player1's shot
- score1 Increase after previous point
- destroy obstacles2 when hit by player2's shot
- score2 Increase after previous point
- set maxEnemies' spaceships In the game, no more enemies are created
- show lives1 In the UI
- show lives2 In the UI
- Decrease lives when:
 - A player is hit by a shot
 - A player is hit by an obstacle
 - An obstacle reach the top/bottom of the screen
 - A player hit a enemy's spaceship
- show timer in the UI
- decrease timer
- end game when timer is over
- end game when a player is out of lives

4/26

#4

- Creation of points objects and move them vertically to the top/bottom side (for both players): spelled with 1 and 2 to understand which player side they are referred
- Destroy points objects1 collected on collision with player1
- score1 Increase after previous point
- destroy points objects2 collected on collision with player2
- score2 Increase after previous point
- destroy points objects1 when hit by player1's shot
- score1 decrease after previous point
- destroy points objects2 when hit by player2's shot
- score2 decrease after previous point
- Particle effects on enemies' spaceship destruction
- particle effect on obstacles destruction
- particle effect on player's spaceship destruction
- particle effect on points objects destruction

5/3

#5

- creation of power ups and downs and move them vertically to the

5/10

top/bottom side (for both players): spelled with 1 and 2 to understand which player side they are referred

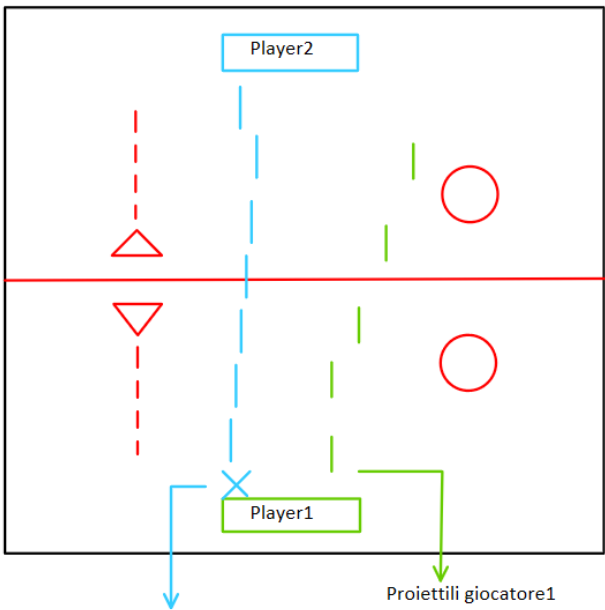
- *destroy power ups and downs1 collected on collision with player1*
- *show collected power ups and downs names in the UI1*
- *destroy power ups and downs2 collected on collision with player2*
- *show collected power ups and downs names in the UI2*
- *manage power ups and downs behavior*
- *using power ups and downs1 collected with all different behavior*
- *using power ups and downs2 collected with all different behavior*
- *UI with title of the game and input controller for the two players and a button to start to play*

Backlog

- *Rotation of the obstacles during their movement*
- *Sound on enemies' spaceship destruction*
- *Sound on enemies' shots*
- *Sound on players' shots*
- *Sound on players' spaceship hit by a shot*
- *Sound on points object collected by a player*
- *Sound on power ups and downs collected by a player*
- *Manage maximum power ups and down collected*
- *Create a better UI for power ups and downs collected*
- *lives Increase when special points object are collected*
- *when a player runs out of lives the opponent must keep play until the timer is over, If it loses the computer will win the game*
- *a cooldown bar that increases its value when player shoots continuously*
- *particle effect on spaceships engines*
- *background sound during the game*
- *a scrolling background of the space*
- *a sound during the collection of some points objects*
- *Feature on backlog - not a part of the minimum viable product*

Project Sketch

2 MAPPA DI GIOCO



Divisore centrale dello schermo:
Gli oggetti di gioco appaiono per
entrambi i giocatori nella stessa
posizione

Colpito giocatore 1 con proiettili del giocatore2

Interfaccia utente della parte di schermo di 1 giocatore
Interfaccia utente della parte di schermo di 1 giocatore

