



LULEÅ UNIVERSITY OF TECHNOLOGY (LTU)

---

## **Cube Run**

Document version: *1.01*

Student Contact: *Benjamin Vesterlund - 076-8233923*

---

Course: *S0005E Introduction to Computer Game Development*

Date of publishing: *June 4, 2020*

# Contents

<b>1 Document History</b>	<b>3</b>
<b>2 Game goals</b>	<b>3</b>
2.1 High concept . . . . .	3
2.2 Who, What, How? . . . . .	3
2.3 Specifics . . . . .	3
<b>3 Story overview</b>	<b>4</b>
<b>4 Game controls</b>	<b>4</b>
<b>5 Technological requirements</b>	<b>4</b>
<b>6 Title/start screen</b>	<b>5</b>
<b>7 Game flowchart</b>	<b>5</b>
<b>8 loading screen</b>	<b>5</b>
<b>9 HUD system</b>	<b>6</b>
<b>10 Power-ups/state modifiers</b>	<b>6</b>
<b>11 Health</b>	<b>6</b>
<b>12 Scoring</b>	<b>6</b>
<b>13 rewards and economy</b>	<b>6</b>
<b>14 World overview/level select/navigation screen</b>	<b>7</b>
<b>15 Game levels</b>	<b>7</b>
<b>16 Music and SFX</b>	<b>7</b>
<b>17 Time planing</b>	<b>8</b>

# 1 Document History

Revision	Date	Name	Comment
0.01	15.04.20	start	First draft.
0.02	16.04.20	time planing	added a time plan, maybe not the best plan but something to hold myself to.
0.03	04.05.20	time planing expanding	adding more tasks to be done.
1.01	04.06.20	Final touches	Trying to finish the GDD

## 2 Game goals

- Quick and Fun
- Simple
- Procedural track generation
- Highscore
- Timesink

### 2.1 High concept

Cube run is a mix of "the impossible game" and "subway surfer".

A fast and simple game about running along a track trying to get as many points as possible and a highscore to match.

### 2.2 Who, What, How?

- Who - competitive people, highscore chasers.
- What - surviving ever faster movement. (Ended up not implemented but could be patched in with `Time.timeScale()` increase as time goes on.)
- How - the simplicity of the game will make it great (I will make it work(I did..)).

### 2.3 Specifics

- Platform(s): starting out for PC but could be moved over to mobile and consoles with time.
- Gameplay: Simple, run through a map trying not to die.
- Goals: Only one goal, survive (Highscore rules).

### 3 Story overview

going from the start screen puts the player right in the action with a short countdown to allow for settling in. then running through blocks of the map trying to survive as long as possible. (story?)

### 4 Game controls

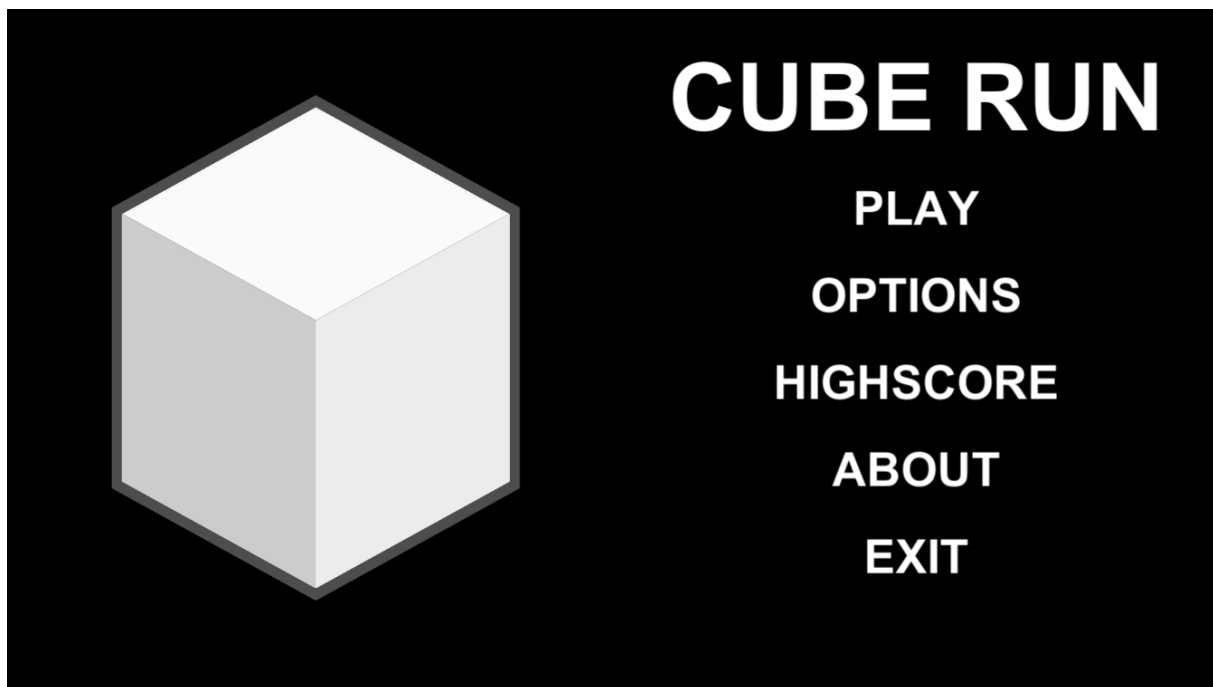
A and D keys for movement, space to jump, a long press will give a long jump and a short press will give a short jump.



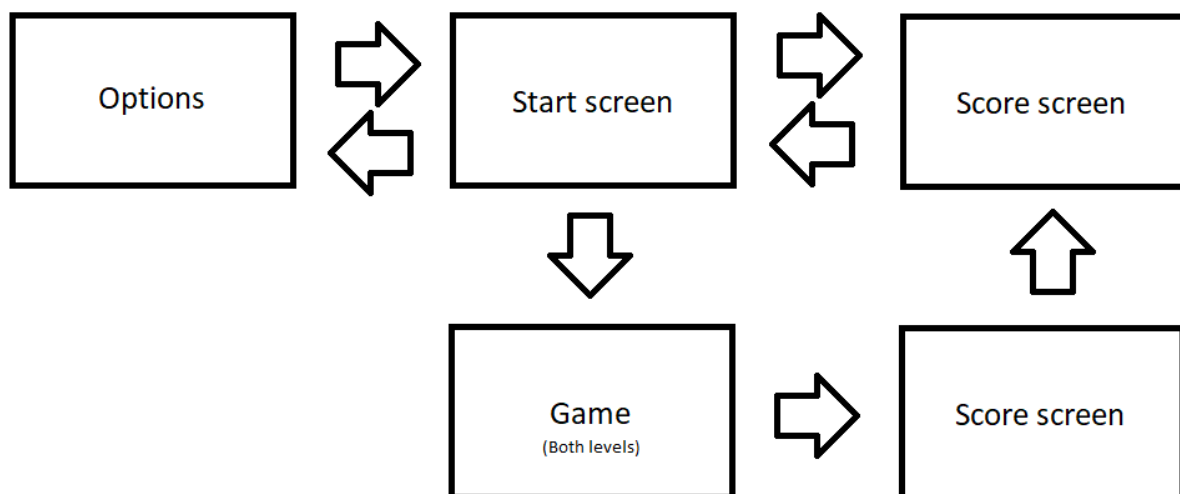
### 5 Technological requirements

- Development tool - Unity
- Implementation of:
  - Camera - third person smooth follow camera
  - Physics - the small amount of physics will use Unity's internal system together with Unity's character controller.
- Design tool - none, the game will have extremely simple graphics from Unity.
- Cheats - None implemented, a testing map was the solution to the testing that needed to be done.
- System requirement - tested on this machine:
  - Processor: Intel Core i7-4790K 4.00GHz
  - Ram: 16GB
  - GPU: NVIDIA GeForce GTX 1080

## 6 Title/start screen



## 7 Game flowchart



## 8 loading screen

No loading screen is done since the game don't really need one.. (a simple one could easily be made with the same image as the Menu screen.)

## 9 HUD system

the HUD will be simple with only relevant information such as current score. if speed is a factor then speedometer will also be added.

## 10 Power-ups/state modifiers

- Time slow - slow down the speed of which the track pass.(since speed was never introduced this was never implemented either. patch might fix.)
- Immortality - become immortal for a short time (did not see a use for imortality.. one would still fall off.)
- (Left this part in so that I can implement it if I get a feeling for it)

## 11 Health

The cube will have no health, one hit and you are out. (if to hard then I will add a 3 heart system and a small reset system. (Was not to hard.))

## 12 Scoring

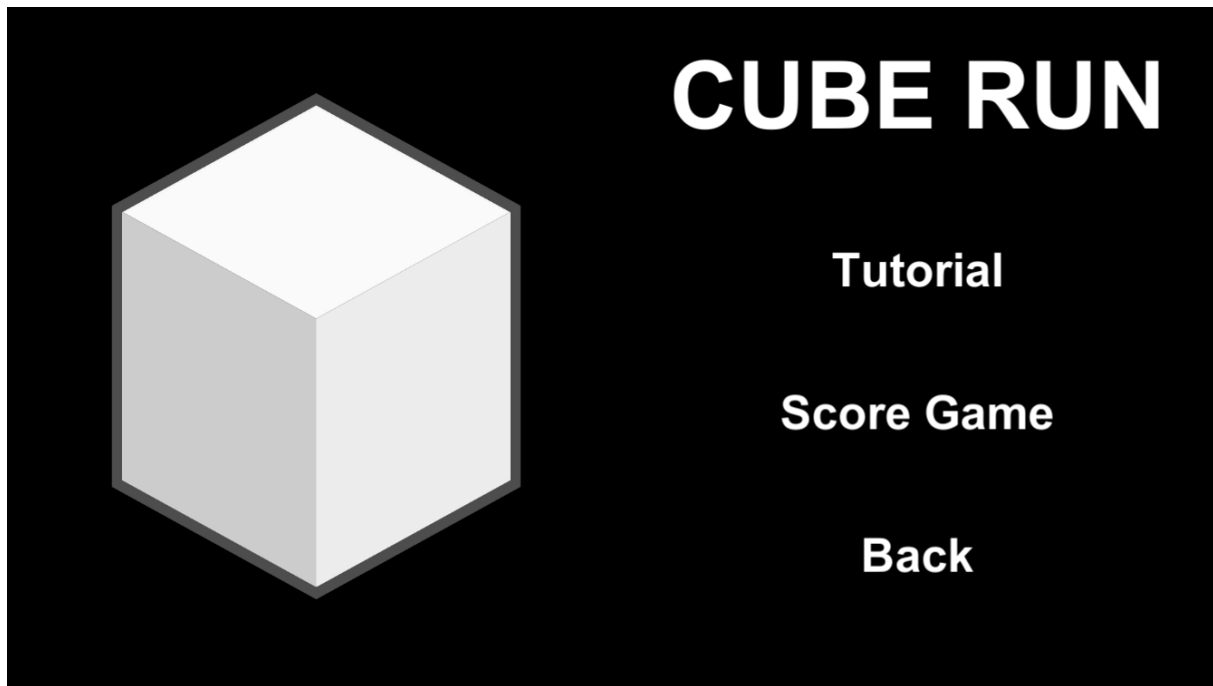
Points will be awarded based on distance traveled and if you manage to pick up coins.

- Highscore will be local to start.
- Achievements would be fun, but not in the plans right now.

## 13 rewards and economy

small section because no plan on having any but maybe earning coins based on score and then be able to buy different skins for the cube (colors and materials). (Save for future patches..)

## 14 World overview/level select/navigation screen



## 15 Game levels

- A training level that is hand built.
- A "Score Game" level with procedural track generation.

## 16 Music and SFX

Free Techno track from [freesound.org](https://freesound.org) and a jumping sound is implemented with separate sliders for music, sfx and master volume.

## 17 Time planing

Week	Big project
17	1. Character movement 2. Start work on level design
18	1. Character/level interaction 2. Trap and spikes 3. Start work on procedural generation
19	1. Menu navigation 2. Score calculator 3. Start on HUD restart
20	1. Add options 2. Add local highscore 3. Integrate options to work within game
21	1. Add Sounds 2. Add pause screen 3. Add hold screen at start of level
22	1. Make final touches 2. Fix bugs 3. Start working for the summer
23	1. anything left (documentation)