Decisions made and why

# Platform

There are many appropriate platforms I could have chosen, this game is intended to be fun but educational, I could have done it through a website such as the example game Lunar Lander but I don’t like that it needs internet connection to work as the game does not have any multiplayer functionality it has no need to be web based. I could have downloadable software to be put on a computer but when I thought about when people would actually use my game I think it is more appropriate as a mobile game so that users could just open it up whenever and have a play. It is perfect for mobile because each landing will only take a few minutes and they can just open it up and see if they can beat their personal best.

# 3D methods

I ruled out using game engines such as Unity or Unreal Engine because this is a software development project and I would not receive the same level of experience and knowledge using these tools.

Next it was a matter of deciding what programming language I would use, Androids official languages are Kotlin and Java:  
Reasons to use Kotlin:  
<https://medium.com/@magnus.chatt/why-you-should-totally-switch-to-kotlin-c7bbde9e10d5>

<https://clearbridgemobile.com/java-vs-kotlin-which-is-the-better-option-for-android-app-development/>

From research into Kotlin, in recent years it appears as though Kotlin is increasing in popularity and from the looks of it maybe it will overtake java. I believe it is in my interest to learn Kotlin but it is still in “early” stages of its life and has only recently become stable enough for companies to switch over to using it (companies such as Uber and Antlassian : <https://kotlinlang.org/> ) I have no prior knowledge of Kotlin whereas I have used Java every year since joining university (including Industrial year) for this reason I will use Java on android studio, as it is the language I feel comfortable programming in and the advantages of Kotlin won’t make a massive impact on this project.

Then my Decision is how to use java to make a 3D game: I need a library to help me talk to my graphics card from general knowledge the most popular ones are OpenGL, Vulcan and DirectX:

<https://www.reddit.com/r/vulkan/comments/77j2sz/when_to_use_vulkan_vs_opengl/>

Vulkan is very low level compared to Assembly in link above and so this seems like a very difficult option.

<https://j3l7h.de/lectures/0405ws/IntroToCompGrphcs/LectureNotes/2004-01-20/OpenGL_basics_compared_to_DirectX.pdf>

^ A good paper comparing OpenGL and Direct3D, basically says that OpenGL is easier to understand and is better to use cross platform. After further research it seems that DirectX isn’t supported by android and so I am Left with OpenGL being my best option because of reasons above and because I have some (very basic) experience with it.