Design Document For The Final Project

In my final project, I am going to modify my existing game project “Mario Rush” that is made when I was in college. First of all, I’d like to briefly introduce this game, this game idea comes from a mobile game “Temple Run”. The game is pretty simple. The player only have to use keyboard to dodge the barriers(bricks, tubes…) and try to catch coins to get points. Also, I take the idea from “Super Mario Bros”, in addition to the barriers, I add other objects, such as mushrooms(get extra one life), flower(Mario can get the power to fire fireballs). In my implementation, my game has 2 stages. The stage 2 is harder than stage 1, and in stage 2, the speed is faster, and the barrier is different from the stage 1. In my game, there is the end apart from “Temple Run”, which is a endless runner game.

At that time, we don’t have any concept about “Gameplay Programming Patterns”, so we just try to make it work. Thus, the code is pretty messy. And after this course, I hope to rewrite it to be a more flexible and clear code. The following are the techniques that I’d like to apply:

1. I’d like to reimplement Mario’s lifetime and the part when the Mario getting different power by eating starts or flower using “Components”, because in my original version I use a lot of flag to set and access the current mode of the Mario which makes my code messy. With the technique of Components, each power(such as ability to fire fireballs, a short period of flashing when the player hits a barrier…) can be simply added and removed as a component.
2. I’d like to reimplement the scoring and life display system and load different scenes using “Events”. Because I’d like to separate the UI system and code, so that it will make my code easier to read.
3. I’d like to reimplement the barrier generating system using “Manager”, because in my original version, I write different scripts on different stages to control different generated patterns. Actually, I do a lot of redundant works in different stages, but if I apply Manager technique here, I think I can reduce the redundancy.

In addition to apply these techniques to my game, I’d like to make my game into a “endless 3D runner game”, and also rewrite all the scripts into neat code and try to minimize the redundancy.