

### The Game:

For this assignment, we can assume we have two ways to launch. The first one is with the launcher and the second one is with the game exe file. Like we can launch visual studio with the Visual Studio exe file or exe shortcut icon. Or with the Visual Studio Installer. When we open Visual studio, it opens directly but when we open VS Installer, we can see how many VS has been installed on our computer and we also get the options to Launch, modify, update and many more. From that updater when we started to update VS then the other options got locked. We cannot do anything while updating even opening the VS. If an update is available, we get a notification in VS and we get the option of 'Close on Update'. And we can also update the VS installer. Observing the behaviors of VS Installer update. Only while downloading the update does the VS Installer keep itself open while installing the update. But while installing the update of VS Installer it closes itself and starts installing. So here we can see that we cannot modify or change any file while updating any applications. Because the file gets locked. Sometimes we need administrator permission to install a new update. Because while installing the DLL file and exe files get replaced by the new updated files. This is the reason for locking the software files. That is why many games and applications use two applications one is the launcher and another is the application itself. When it updates the launcher downloads the files from the server. It happens when we open any application or run the application one update service always runs in the background. The app or game communicates with the server to give notifications. Maybe there are 2 types of games or apps (design pattern) we can see some of them let us use them while we are offline and others cannot be played/run without the internet. Like we cannot play online shooting games like PUBG without the internet on the other hand games like GTA V we can play offline and online we don't need any internet connection to play GTA V. But we can update the game using the launcher or the provider like steam, origin etc. Now I am drawing a flowchart of that design pattern.