

FIV Project Proposal

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Abstract:

This project aims to make a program that can accept up to 5 dimensions data and display in 3D scene, the user can adjust the way of data display in 3D Scatter plot or 3D Histogram in our first target, maybe more kind of charts, if we have time.

The program should have this function:

1. Accept data and generate 3D charts, the user can adjust which dimension represents which data.
2. The user can see the data in a different view since the charts are a plot in the 3D scene, the user can move the camera the see the data by mouse and keyboard control.
3. The user can select some of the data in the scene and make a change of it.
4. The program should have a UI that user can use the UI to adjust the scene.

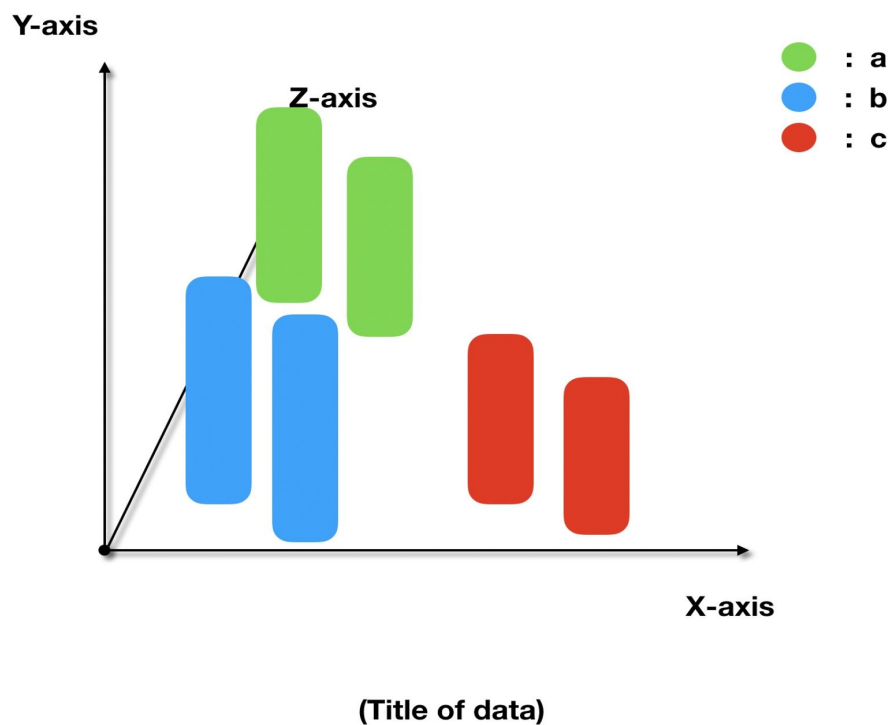
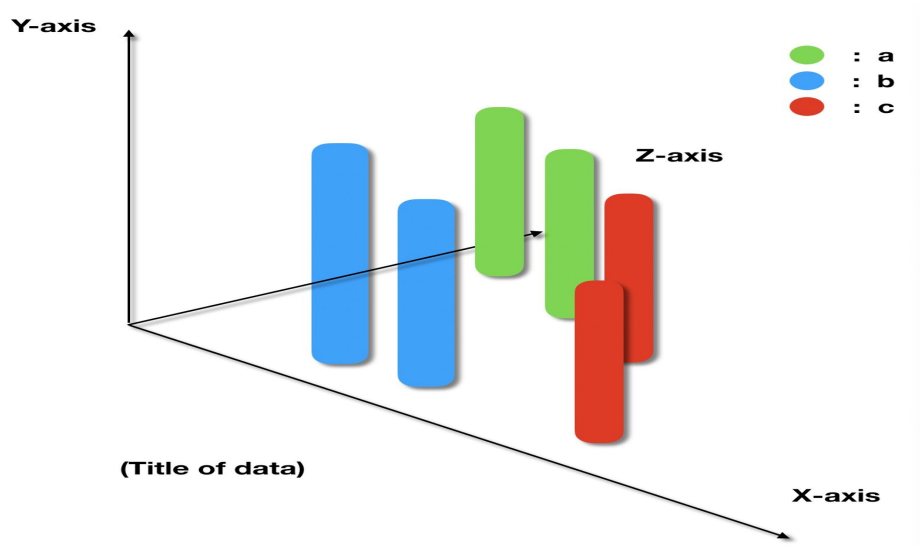
The project means to be an adaptable system that can accept a different kind of data, but by 3D scene, it can smoothly display more dimension of data easily, and it should be more clear to view the data than the 2D way.

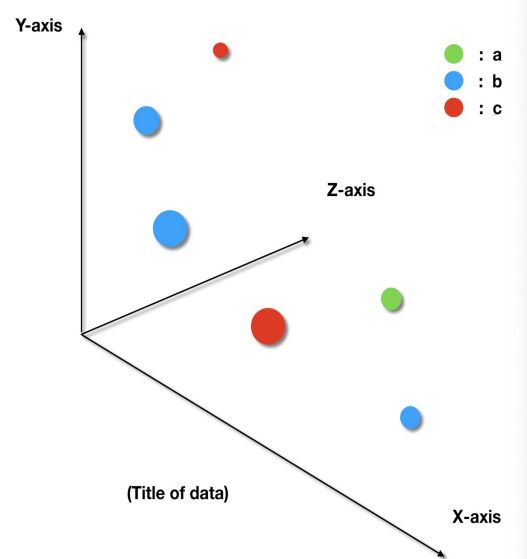
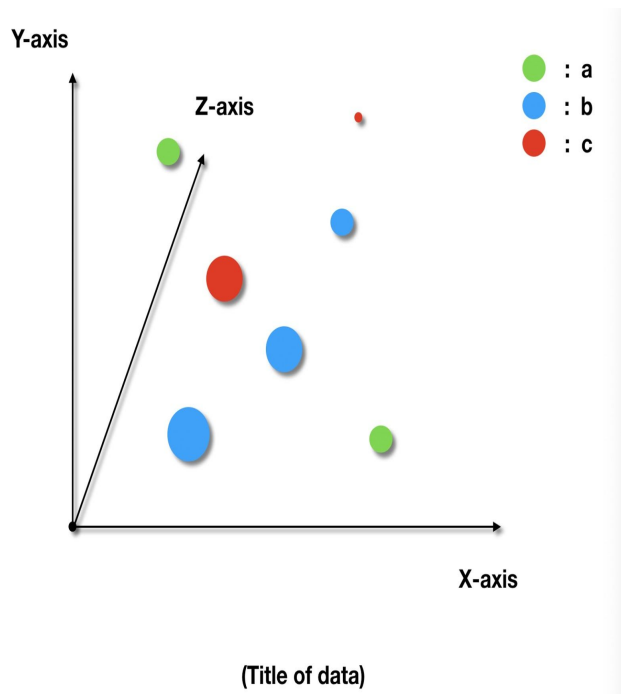
Development platform:

We use Unity3D 2017.4.23f1 as our developing platform, since it is a nice 3D game editor and it should be easy to build the scene of our program, moreover, Unity3D is using C# as scripting language which is nice and easy to use, it is an OOP language and it has many libraries to let us read the data in different format. The Unity3D is also a cross-platform editor which we can easily switch in macOS or Windows, even mobile platform, it has nice scalability, so we choose Unity3D as our development platform.

Draft diagram and UI:

There are draft of 3D Scatter plot, 3D Histogram and UI of our visualisation system. Users can change viewpoint and adjust diagram by clicking buttons in UI.



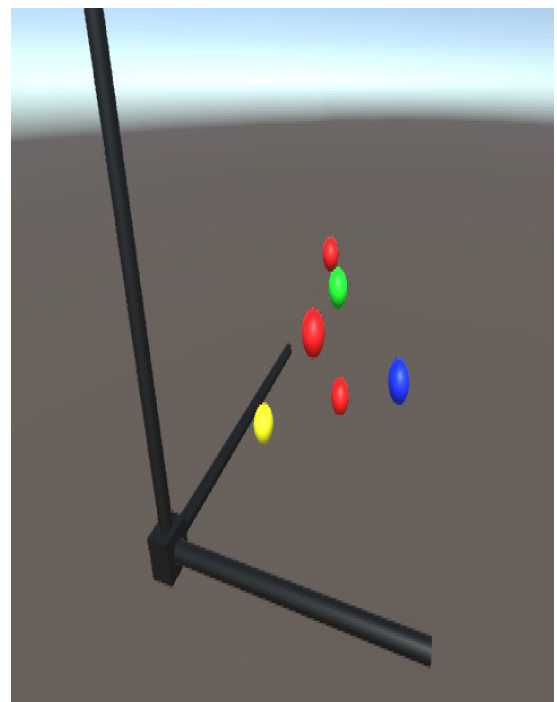


Import data

Adjust diagram

Reset

Change view point



(User Interface)

(Sample scens drawn by unity)