

Draw It or Lose It

# **CS 230 Project Software Design Template**

Version 1.0

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## [Document Revision History](#_grjogdjh5fi8)

| Version | Date | Author | Comments |
| --- | --- | --- | --- |
| 1.0 | 11/10/2021 | Shayna Combe | Design techniques of Draw It or Lose It |

**Instructions**

Fill in all bracketed information on page one (the cover page), in the Document Revision History table, and below each header. Under each header, remove the bracketed prompt and write your own paragraph response covering the indicated information.

## [Executive Summary](#_sbfa50wo7nsh)

The Gaming Room is planning on developing a web based game that can run on multiple platforms. This game is called “Draw It or Lose It”. This game is currently available only on Android. The game consists of multiple teams members going four rounds at one minute each. An image is pulled out of the library of stock drawings. One team has to guess the puzzle before the time runs out. If the puzzle is not answered then the other team gets the opportunity to guess the puzzle with a 15-second time limit. This game is very similar to the 1980’s show *Win, Lose or Draw.*

## [Design Constraints](#_2et92p0)

* One or more teams needs to be involved
* Team has to have multiple people
* Game and Team names should be unique to make sure that no one else can get the same team name as yours.
* Creating unique identifiers for game, team or player
* Only one instance of this game can exist

All of these are specific requirements for that should be followed when writing the code and software. This is only for the game point of view, another important part is the application development. This is currently just an Android app, but The Gaming Room wants this app to be launched to all devices. They need to rewrite and develop the code for Linux, Windows and Apple. This code could also be written in multiple languages because when they work together this performs a stronger code.

## [System Architecture View](#_ilbxbyevv6b6)

Please note: There is nothing required here for these projects, but this section serves as a reminder that describing the system and subsystem architecture present in the application, including physical components or tiers, may be required for other projects. A logical topology of the communication and storage aspects is also necessary to understand the overall architecture and should be provided.

## [Domain Model](#_8h2ehzxfam4o)

The Entity class forms and creates a relationship with Game, Team and Player classes. They all get their information from the Entity class. These classes all have the common references like “id” and “name”. This makes Entity a superclass with a relationship of Team and Player. The UML has an instance of one class that is referenced to all the other classes. GameService is a reference of Games, Games then is a reference of Team and Team is then a reference of Player.

**"The Gaming Room UML diagram. The top of the diagram is labeled as com dot gamingroom. Test boxes are placed in two layers. The first layer has three text boxes and the second layer has four of them. In the first layer, the 'ProgramDriver' textbox points to 'SingletonTester' textbox. The 'ProgramDriver' textbox contains the text 'asterisk main round brackets.' The 'SingletonTester' textbox contains the text 'asterisk testSingleton round brackets.' The arrow between these two text boxes are labeled 'open two angle brackets uses close two angle brackets'. In the second layer, there are 'GameService', 'Game', 'Team', and 'Player' text boxes. The 'GameService' textbox has texts arranged in two layers. The first layer contains games colon List open angle bracket Game close angle bracket, nextGamesId colon long, nextPlayer Id colon long, nextTeamId colon long, and service colon GameService. The second layer contains GameService round brackets, getinstance round brackets colon GameService, addGame open parenthesis name colon String close parenthesis colon Game, getGame open parenthesis id colon long close open parenthesis colon Game, getGame open open parenthesis name colon String close open parenthesis colon Game, getGameCount round brackets colon int, getNextPlayerID round brackets colon long, and getNextTeamId round brackets colon long. The 'GameService' box is connected with the 'Game' textbox with a line labeled 'zero dot dt dot asterisk'.  The 'Game' textbox also contains text in two layers. The first layers contains the text teams colon List open angle bracket Team close angle bracket. The second layer has Game open round bracket id colon long comma name colon String close parenthesis, addTeam open parenthesis name colon String close parenthesis Team, toString round brackets colon String. The 'Game' textbox is connected with the 'Team' textbox with a line labeled 'zero dot dt dot asterisk'. The 'Team' textbox also contains text in two layers. The first layers contains the text players colon List open angle bracket Player close angle bracket. The second layer has Team open parenthesis id colon long comma name colon String close parenthesis, addPlayer open parenthesis name colon String close parenthesis colon Player, and toString round brackets colon String. The 'Team' textbox is connected with the 'Player' textbox with a line labeled 'zero dot dt dot asterisk'. It contains the text Player open parenthesis id colon long comma name colon String close parenthesis and toString round brackets colon String. The 'Game', the 'Team, and the 'Player' boxes point to the 'Entity' textbox in first layer. The 'Entity' textbox contains text in two layers. The first layer has the text id colon long and name colon String. The second layer has Entity round brackets, Entity open parenthesis id colon long comma name colon String close parenthesis, getId round brackets colon long, getName round brackets colon String, toString round brackets colon String.**

## [Evaluation](#_2o15spng8stw)

Using your experience to evaluate the characteristics, advantages, and weaknesses of each operating platform (Linux, Mac, and Windows) as well as mobile devices, consider the requirements outlined below and articulate your findings for each. As you complete the table, keep in mind your client’s requirements and look at the situation holistically, as it all has to work together.

In each cell, remove the bracketed prompt and write your own paragraph response covering the indicated information.

| **Development Requirements** | **Mac** | **Linux** | **Windows** | **Mobile Devices** |
| --- | --- | --- | --- | --- |
| **Server Side** | Mac is the most popular server. It is easier to access and make changes to. It is an extremely easy creation of unique features. It is the easiest server compared to all the others. A very important advantage is that it is upgradeable. With every user that has an account on Mac, can host their own website which is different from the others. The disadvantages of Mac limited storage, low quality of web hosting services, fewer games, and it is expensive. | Linux has a low-cost option. Linux is designed to handle storage more intensely for larger organizations. They are ran on both physical and cloud servers. Linux is often preferred as the best option when it comes to security, consistency and flexibility. The disadvantage of Linux is their limit in market share, poor support for games and a lack of tech support. | The cost for Windows is expensive just like Mac. Windows is a group of operating systems. It has a user friendly GUI. They also have high resource requirements. The Windows Server is focused on stability, security and networking. They have more available software options compared to the others.  Some disadvantages are that it is not suitable as a multi-user system, larger user error potential and poor technical support and virus susceptibility. | They have a better cost and it is the most popular. They have better compatibility. This can vary from user to user.  The main disadvantage is poor security. |
| **Client Side** | If you are a Mac user, then It will require a lot of time. The cost is very similar to Windows. A requirement for Mac is that you have moderate expertise, accurate skills and a lot of time. | Linux data is required in this operating system. The cost for Linux very affordable. You are required to have a lot of time and maximum skills to work with this system. | The cost is similar to Mac. Minimum expertise and skills are required for Windows. It does not take a lot of time to understand how Windows works. | This provides clients, users and developers to see when an update is ready to be installed. This can be more challenging compared to the other devices. This requires a lot of time and skills to work with the device. |
| **Development Tools** | Mac can run every language. I use Eclipse on my computer. Languages consist of but it is not limited to HTML/CSS/  JavaScript. Java is the best programming language for Mac.  The example of IDE’s are JavaScript, PHP and Python. The Mac in system developments are that of Eclipse, Visual Studio and Notepad++. | Linux works well with visual studio and Eclipse. Some of the key languages but is not limited to are HTML/CSS  /JavaScript, C/C++. C is the best programming language for Linux. Linux IDE’s are Python, JavaScript, and Rudy. The development tools are the same as Mac. These include Eclipse, Visual Studio and Notepad++. | Windows works the same as Linux. Visual Studio and Eclipse are applied here as well. The key languages that are used here but not limited to are HTML/CSS/  JavaScript.. For this category C is used the most and is the best language for Windows. The IDE’s from his particular system uses JavaScript, Python, and Rudy.  Windows uses developing tools such as GitHub, Pycharm, Eclipse, and Visual Studio. | Mobile Devices are made up with Android or Apple. These languages and software can be run on just about any machine. It uses the same languages as Mac, Linux and Windows. The languages that are used but not limited to are HTML/CSS/  JavaScript, Python, and Rudy. Mobile Devises uses developing tools such as PyCharm, Eclipse, Visual Studio and GitHub. |

**Recommendations**

Analyze the characteristics of and techniques specific to various systems architectures and make a recommendation to The Gaming Room. Specifically, address the following:

1. **Operating Platform**: I would recommend that The Gaming Room start with Windows. I believe that they have more software options available and it requires a minimum expertise level. The cost for this is going to be affordable. They won’t run out of storage when it works with IDE’s. This is specifically designed to run on hardware for servers. They also support branches off the server, examples are file server, web server, database server, application server, mail server and printing server.
2. **Operating Systems Architectures**: Windows is the best platform here. Windows allows their apps to show a GUI. They also refer to web, graphics and multimedia and messaging services. These services are accessed by using server or a user account. Windows has more to offer in this category than all the others. With using Windows, it will give an opportunity for the developers to work with many different programming languages.
3. **Storage Management**: The memory of windows is pretty great. The application after download is stored directly on the device. Since the app can take a lot of storage on your phone, they have another form of storage. They offer cloud storage like Mac/ iOS products. If the cloud is being used, it will open up more storage. This is a great benefit for the developers because this offers them with plenty of storage to develop and create new things.
4. **Memory Management**: Windows has memory management options. This offer includes both virtual and physical address space. This is done by allowing 2 to 4 gigabytes of memory already included on your device. This will help fun applications efficiently without taking up more storage than what is needed.
5. **Distributed Systems and Networks**: Windows server operating system as the distributed systems and networks allow easy communication within many different processors and between many workstations. In distributed systems, the use of a network support is a perfect way to use the software in a distributed system. These systems provide a simple communication and direction amongst each other, while routing and glitches are some of the common issues.
6. **Security**: The VPN service helps protects the clients account and data by securing information so that it will be safe if an criminal activities try to occur. The Windows software has anti-spyware built in. This keeps the criminal activity down to a minimum for the sake of the client and their personal information. The user control settings controls what goes in and out of this system. The client should feel safe and positive when it comes to using Windows software.