

# Draw It or Lose It

# **CS 230 Project Software Design Template**

Version 3.0

## Table of Contents

[**CS 230 Project Software Design Template** 1](#_Toc115077317)

[**Table of Contents 2**](#_Toc115077318)

[**Document Revision History 2**](#_Toc115077319)

[**Executive Summary 3**](#_Toc115077320)

[**Requirements 3**](#_Toc115077321)

[**Design Constraints 3**](#_Toc115077322)

[**System Architecture View 3**](#_Toc115077323)

[**Domain Model 3**](#_Toc115077324)

[**Evaluation 4**](#_Toc115077325)

[**Recommendations 7**](#_Toc115077326)

## [Document Revision History](#_grjogdjh5fi8)

| Version | Date | Author | Comments |
| --- | --- | --- | --- |
| 3.0 | 10/15/2023 | Martin Granados | Update Recommendations |

**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)

Creative Technology Solutions (CTS) has a new client The Gaming Room which works with games. The Gaming Room currently has a web-based Game called Draw it or Lose It, which is similar to the 1980s television game Win, Lose or Draw, where teams compete to guess what is being drawn. They goal is to make the game available on multiple platforms, but at the moment it is only available on the web and as an android application. The goal is to generate an application this available on more platforms, such as an Apple App, to connect with more users.

## Requirements

*The Gaming Room wants an application in which one or two teams are involved while playing the game. Every team must have multiple players assigned to them. Also, the Game and Team names must be unique when users are choosing their Game and team. For this reason, the application must have a way to check whether the name is already in use. There can only be one instance of the game to exist within the memory.*

## [Design Constraints](#_2et92p0)

When writing the software code, one must follow the guidelines mentioned in the requirements. Those requirements will add more functions that need to be added within the code of the software to make sure the requirements are met. The application should work on any hardware, according to the Gaming Room. This indicates that even if it is already accessible on Android, it still needs to be included into a different mobile platform, in addition to hardware from Apple, Linux, and Windows. To do this, one will need to either decipher how to rebuild the code for Apple devices or find out how to use existing code that can operate on other devices by inheriting other languages, similar to how we mix many computer languages to make 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 Game, Team, and Player classes all inherit from the Entity Class, so they all receive some information from the Entity class. Consequently, each class will use variable like "name" and "id" together through an Entity superclass. An examination reveals that the connection between the Team class and the Player class represent aggregation. Generally, while stating that a class aggregation it indicates that they possess both an instance of one class and a reference to an instance of another class. As we can see from this diagram, there are references between GameService and Games, Games and Team, and Team and Players.

**"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** | An advantage is Mac might have integrated security so the information will be saved. It also might have a more flexible terminal than other software. A disadvantage is, it might be more costly to build an application that will work on the platform. | Linux might be more affordable and information might be more secure. However, developing the code might be more complex and difficult to support the  User requirements/  needs. | There are more resources available for Windows which could create allow for more options and more comfortability. A disadvantage is that there might be a need to implement a security within the application due to less security. | An advantage is that mobile devices might be more popular to use and it might be better to reach more users. A disadvantage is that there will be less space to use for the app and the way in which it will work, due to the small screen and limitations and poor security. |
| **Client Side** | The application needs to run on the Mac platform, which could be costly. Also, there might be less users on a Mac platform so there might be different requirements/needs. | Linux clients need reliability and security so maximum time and expertise are required. There also might be less cost required. | Probably needs the least amount of skill and work but similar in price as a Mac. | Allows users or developers to access updates from any location. less user-friendly than other devices. Might be more difficult to implement into the software. |
| **Development Tools** | Swift will the be the most popular choice to run on Macs but can support other languages. Languages supported include but are not limited to HTML, CSS, and JavaScript, Python, Java, and so on. Designing the application in swift might mean an increase in the specialization needed. | Notepad++, Visual Studio, and Eclipse provide a wealth of extra tools and languages, for Linux users.  Could be beneficial in decreasing overall costs. Languages supported include but are not limited to HTML, CSS, and JavaScript, Python, Java, and so on. | It is not as powerful as Linux, but it is simpler to use. There are several platforms available; Eclipse and Visual Studio are only two examples. Languages supported include but are not limited to HTML, CSS, and JavaScript, Python, Java, and so on. | There are many applications that can be made using Android. Languages supported include but are not limited to HTML, CSS, and JavaScript, Python, Java, and so on. However, there might be some limitation in terms of data memory. |

## 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**: It would be recommended that The Gaming Room start with Windows platform since they offer a larger assortment of apps and need less funding and training to get started. There will also be an abundance of IDEs available for use.
2. **Operating Systems Architectures**: Windows provides services that are necessary for all Windows-based applications. These services enable applications to access system resources and display a Graphical User Interface (GUI) among other things.
3. **Storage Management**: Storage Sense is a helpful feature included with Windows that lets you see and manage the files on the drive and see how much space they take up. Two other benefits are the ability to save app locations for easy finding and access. As with other dives, data preservation is another purpose for the cloud. The integrated storage system makes it easy to produce and put files for huge projects, eliminating loss or accidental deletion.
4. **Memory Management**: One will need to construct a large photo collection or database in order to create this game. It is easy to store pictures outside of the default photo folder thanks to the RAM allotment. This makes it possible to manage the whole project on a safer device in one place. This holds true for opening files from the IDE and utilizing it to create the game.
5. **Distributed Systems and Networks**: Develop is a Windows application, which enables the creation of cross-platform games. It's an IDE that works with any platform. After development is complete, exporting the game file to the web, iOS, Android, and several more cross-playing platforms is a simple process.
6. **Security**: Security software is pre-installed on Windows. To safeguard user data and information, it is advisable to utilize an alternative source. Despite the fact that Windows has built-in security, this depends on the contents of the system. This machine performs a security threat, malware, and virus scan. All of this happens in real time, and the system automatically updates to safeguard user data and the system as threats are always changing.