

Draw It Or Lose It

# **CS 230 Project Software Design Template**

Version 1.0

## 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 5**](#_Toc115077326)

## [Document Revision History](#_grjogdjh5fi8)

| Version | Date | Author | Comments |
| --- | --- | --- | --- |
| 1.0 | 07/21/2023 | Jevon Watts | Updated 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)

A web-based game for multiple platforms is being developed by The Gaming Room. The game is currently only available on Android and is called "Draw It or Lose It.". In this game, multiple teams consisting of several people play four rounds per minute. An image is pulled from an image library, and one team guesses until time runs out. In the event that an opposing team member does not answer, the opposing team gets 15 seconds to answer.

## [Design Constraints](#_2et92p0)

• Needs one or more teams involved

• Each team has multiple people

• Game and Team names must be unique to allow user to check whether name is in use or free

• Only one instance of the game can exist at any time.

• Must run on multiple platforms

In order to write the code and software, the following requirements must be followed. Even though this is only the game development aspect, we still need to look at the application development aspect. The Gaming Room would like this to be compatible with all devices. This means that it is already available on Android, but it needs to be integrated into a different mobile device. These include machines such as Windows, Linux, and Apple. For this to be accomplished, either the code needs to be rewritten in Swift for (Apple devices) or we need to find a way to utilize existing code to run on other devices by inheriting other languages. A good example of this is when we combine two or more computer languages to make a stronger program.

## [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)

A relationship between Game, Team, and Player is created Entity. In other words, they all inherit or receive information from Entity. UML allows us to illustrate this with inheritance. As a result, each class will share common references, such as "name" and "id". Establishing Entity as a superclass. In looking at their relationship, we see that Team and Player are of the type "has a". GameService has Game, while Game has a Team. UML refers to this as aggregation (HAS A). "Has a" means it is an instance of one class and has a reference to an instance of another class. As we can see from the diagram, GameService has a reference to Game, Game has a reference to Tea, and Team has a reference to 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** | Configure, access, or change the server using flexible terminal commands. | The same applies to Macs, plus they are more affordable. | Compared to other operating systems, there is more software available. | Ideally, the server should be stationary and trackable from one location. There are better specifications in other devices. |
| **Client Side** | A moderate level of expertise and time is required. Similar to windows in terms of cost. How can the application development process ensure that it is compatible with all mobile devices and web browsers? | Maximum expertise and time required. Minimum cost. What is required of the application development process to ensure the application is compatible with all web browser platforms and mobile devices? | It requires minimal expertise and time. Similar to Mac in terms of cost. For an application to be compatible with all web browser platforms and mobile devices, what must be done during the application development process? | Allows clients or even developers to see updates wherever they are. Implementation is slightly more challenging than with other devices |
| **Development Tools** | Using swift is a popular option when running languages on Macs. While incorporating nice tools such as notepad++. Macs can run all languages. Among the languages supported are HTML/CSS/JavaScript, as well as libraries supporting the front-end and general-purpose languages. Java, Python, PHP, and Ruby are examples of these languages. | Linux supports visual studio, eclipse, along with notepad++ for an easy-to-use editor. As well as many other languages and tools. In addition to HTML/CSS/JavaScript, libraries are available to support the front-end and general-purpose languages. Among these are Java, Python, PHP, and Ruby. | The operating system is easier to use than Linux, but it can run the same as it. There are many languages, such as visual studio and eclipse. Notepad++ is a user-friendly tool with multiple tools. There are several languages, including HTML/CSS/JavaScript, and libraries for front-end development and general-purpose programming. Among these are Java, Python, PHP, and Ruby. | Android and Swift can be used to create a large number of apps. All three machines can run both languages and software. Among the languages supported are HTML/CSS/JavaScript, with libraries supporting the front-end and general-purpose languages. Java, Python, PHP, and Ruby are all examples of these languages |

## 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**: If you would like to get started on the Gaming Room, I would recommend using a Windows device since it has more software available along with a minimum level of expertise and cost to get the project started. Additionally, there will be no shortage of IDEs to choose from.
2. **Operating Systems Architectures**: All Windows-based applications are provided with services that enable them to display a graphical user interface (GUI), access system resources, and much more. There are also Graphics and Multimedia applications, messaging applications, and web services included in this category. There are two ways of using these services: through a user account or through a server-specific account
3. **Storage Management**: Storage sense is a feature that is included with Windows 10. With this feature, you will be able to view and manage all the files on your hard drive, as well as how much space they occupy. As well as being able to choose where to save apps, other features include the ability to search for them more easily. It is also possible to save data on the cloud in the same manner as other dives. Files can be created and placed easily in the built-in storage system, so they will not be lost or carelessly removed.
4. **Memory Management**: The creation of this game will require the creation of a database or library containing a large number of images. As a result of the memory allocation, pictures can be stored outside of the default picture folder easily. By doing this, your entire project can be stored in a more secure location on your computer. If you are working with your IDE and opening files from it to create the game, this applies.
5. **Distributed Systems and Networks**: Due to the fact that each operating system is different, I investigated ways of publishing the game to be compatible with all systems. In my search for cross-platform game creation software, I came across Develop 4. It is a powerful IDE that can be used on a variety of devices. After the game has been created, the game file can be exported into web, iOS, Android, and many other options that will enable cross-platform play. As a result, dependencies will be easier to manage. It is essential for the company to ensure their servers are strong enough to support large player volumes as well as backup power in case of a power outage in order to avoid other problems such as outages or connectivity problems.
6. **Security**: There is a built-in security protection software included with Windows. In order to ensure the safety of user data and information, it is recommended that a different source be used. As far as what is on the machine is concerned, Windows is pre-equipped with a protection program. As part of this process, the system is scanned for malware (malicious software), viruses, and security threats. All of this occurs in real-time, and when threats change, the system automatically updates to ensure the security of the system and user information.