

Draw It or Lose It

# **CS 230 Project Software Design Template**

Version 3.0

## Table of Contents

[**CS 230 Project Software Design Template**](#_l6ti7uoag22u)1

[**Table of Contents**](#_30j0zll)2

[**Document Revision History**](#_grjogdjh5fi8)2

[**Executive Summary**](#_sbfa50wo7nsh)3

[**Design Constraints**](#_2et92p0)3

[**System Architecture View**](#_ilbxbyevv6b6)3

[**Domain Model**](#_8h2ehzxfam4o)3

[**Evaluation**](#_2o15spng8stw)3

[**Recommendations**](#_m8aleynsvzvc)5

## [Document Revision History](#_grjogdjh5fi8)

| Version | Date | Author | Comments |
| --- | --- | --- | --- |
| 3.0 | 08/15/21 | Brandon Lingenfelter | Added executive summary, design constraints, domain model, evaluation, and 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)

The Gaming Room wants to develop a web-based game that can run on multiple platforms. The game will be called “Draw It or Lose It” and is currently only available on android. The purpose of this game is multiple teams consisting of several people going four rounds at a minute each. When a picture is pulled from a library of images one team guesses till time runs out. If not answered each opposing team member gets to answer till 15 seconds runs out.

## [Design Constraints](#_2et92p0)

* Needs one or more teams involved.
* Each team has multiple people.
* Game and Team names must be unique to allow users to check whether the name is in use or free.
* Only one instance of the game can exist at any time.
* Must run on multiple platforms.

These are the requirements needed to follow while writing the code and software. While this is only the game aspect, we still need to look at application development. The Gaming Room would like this to run on all devices. This means we already have it on android but need to work it into another mobile device. Along with machines like Windows, Linux, and Apple. To do this we will need to find a way to either re-write the code in swift for (Apple devices) or come up with a way to use existing code to be run on other devices by inheriting other languages. Like when we use multiple computer languages together 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)

Entity creates a relationship between Game, Team, and Player class. This means they all inherit or get information from Entity. With UML we can show this with inheritance. So, each class will share common references like “name” and “id”. Making Entity a superclass. When we look at their relationship, we see Team and Player is a “has a” type. While Game has a Team and GameService has Games. When we use UML, we call it aggregation (HAS-A). When a user “has a” I mean it's an instance of one class and has a reference to an instance to another class. When we look at this diagram, we see GameService has a reference of Games, Games a reference of Tea, and Team a reference of Player.

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## [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** | Flexible terminal commands to configure the server, access, or make changes.  Characteristics is it is popular in web hosting.  Advantages are that It is upgradeable, it has various options for different web hosting requirements.  Disadvantages are that It is less preferred for web hosting services | The same goes for mac plus more cost friendly.  Characteristics are it is Secured and the most preferred.  Advantages are that security flaws are caught before they become an issue, it is the most preferred choice for web hosting services.  Disadvantages are that It is more difficult to find applications to support the web hosting required needs. | More software available compared to other OS.  Characteristics are that It is dominant to the other platforms. Close platform  Advantages are high resource requirements, less loading time, high comfortability.  Disadvantages are it has easy virus susceptibility, poor tech support | It is better if the server is immobile and can be tracked in a single place. Specifications are better in other devices.  Characteristics are they are more popular and have high portability.  Advantages are a wider reach, better compatibility, cost-effective.  Disadvantages are It is highly selective to various smart mobile devices Poor security |
| **Client Side** | Moderate expertise and time required. Cost is similar to windows. What is required of the application development process to ensure the application is compatible with all web browser platforms and mobile devices? | 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? | Minimum expertise and time required. Cost is similar to mac. What is required of the application development process to ensure the application is compatible with all web browser platforms and mobile devices? | Provides flexibility to clients or even developers to see updates at any place. Slightly more difficult to implement than other devices. |
| **Development Tools** | When running languages on macs we can run swift which is the more popular option. While mixing in nice tools like notepad++. Though Macs can run all languages. Languages consist of but not limited to HTML/CSS/JavaScript while supporting libraries to support the frontend and general-purpose languages. These can be Java, Python, PHP, and Ruby. | Linux can work with visual studio, eclipse, along with notepad++ for a nice and easy-to-use tool. Along with many more languages and tools. Languages consist of but not limited to HTML/CSS/JavaScript while supporting libraries to support the frontend and general-purpose languages. These can be Java, Python, PHP, and Ruby. | Easier to use than Linux but can run the same as it. So visual studio, eclipse to name a few of the many languages. With multiple tools notepad++ is a simple to use the tool. Languages consist of but not limited to HTML/CSS/JavaScript while supporting libraries to support the frontend and general-purpose languages. These can be Java, Python, PHP, and Ruby. | You can create countless apps using android and swift. Both languages and software can be run on all three machines. Languages consist of but not limited to HTML/CSS/JavaScript while supporting libraries to support the frontend and general-purpose languages. These can be Java, Python, PHP, and Ruby. |

## 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 The Gaming Room starts on windows devices as it has more software available along with minimum expertise and cost to get projects going. You also won’t run into a shortage of IDE’s to work with.
2. **Operating Systems Architectures**: Windows provides services used by all Windows-based applications that enable applications to show a Graphical User Interface (GUI) while accessing system resources and much more. These applications also refer to Graphics and Multimedia, messaging, and web services. These services can be used using a user account or a server specifically.
3. **Storage Management**: Windows 10 comes with a nice feature called storage sense. This allows you to scrutinize and manage files on your hard drive, along with how much space it takes up. Other features include being able to choose to save locations for apps making them easier to find. And just like other dives, you can also use the cloud to save data. The built-in storage system allows for easy file creation and placement for large projects, so they will not get lost or carelessly deleted.
4. **Memory Management**: While creating this game you will need to create a database or library with lots of pictures. The memory allocation allows for easy storage of pictures outside of the default picture folder. This allows you to keep your whole project together in a more secure area on your computer. This includes when you are working with your IDE and opening files from it to create the game.
5. **Distributed Systems and Networks**: Because each operating system being different I investigated ways to publish the game to run on all dives. I found Develop 4 which enables cross-platform game creation. It is an IDE that can be run on any device. Once the game is created you can simply export the game file into the web, iOS, Android, and many more options that will allow cross-play. This will help with dependencies. To prevent other problems like outages or connectivity, the company will need to make sure their servers are strong enough to support large player volumes along with backup power for power outages.
6. **Security**: Windows comes with built-in security protection software. Though to secure user data and information it would be recommended to use another source. Though if we are talking about what is on the machine windows comes pre-equipped with protection. This system scan for malware (malicious software), viruses, and security threats. This all happens in real-time, and because threats change the system updates automatically to keep the system and user information safe.