

<Name-of-Software-Application>

# **CS 230 Project Software Design Template**

Version 1.0

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## [Document Revision History](#_grjogdjh5fi8)

| Version | Date | Author | Comments |
| --- | --- | --- | --- |
| 1.0 | <mm/dd/yy> | <Your-Name> | <Brief description of changes in this revision> |

**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 create a web based game called “Draw it or Lose it “ and wants it to have the capability to run on multiple operating platforms. It is currently only available on android. The purpose of the game is for multiple teams, consisting of several people, going four rounds at a minute a piece. When a picture is pulled from the library the team has the allowed amount of time to make a correct guess. If not answered the remaining teams have 15 seconds to make a correct guess until their time runs out.

## Requirements

## [Design Constraints](#_2et92p0)

* Needs one or more teams involved.
* Each team has multiple people.
* Game and Team names need to be unique to be sure there is no duplication of names.
* Only one instance of the game can exist at one time.
* Must be able to be used on multiple platforms.

## [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 creates a relationship between the game, team, and player class. They will all inherit or get their information from the entity class. Each class will share common references, like name and id making the entity a superclass. The four classes below the superclass, in which it inheritance attributes, draw reference from each other. This creates a “has is” relationship between the four classes which is an example of aggregation. When a user “has a” it means it’s an instance of one class and then has a reference to an instance of another class. Looking at the diagram, we see Game Services has a reference to games. Games have a reference to teams and teams are 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** | Flexible terminal commands to configure the server, access or make changes.  Advantages: it is upgradable, it has varies options for different web hosting  Disadvantages: less preferred for web hosting services | Lower cost  Then mac and more secured  Advantages: security flaws are caught before becoming an issue  Disadvantages: difficult to find application to support web hosting | Software is easy to find since it’s the most popular.  Advantages: more resources found, majority user are comfortable with this platform  Disadvantage: mostly targeted for virus, high security issues | offer portability, constant connectivity, and a wide range of applications with a touch-based interface, built-in sensors, and seamless integration with cloud services. They are ideal for on-the-go tasks, communication, multimedia consumption, and casual gaming. |
| **Client Side** | Moderate expertise and time are required. Cost 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 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? | <Determine the software development considerations (cost, time, expertise) that are necessary for supporting multiple types of clients as they pertain to Mobile Devices.> |
| **Development Tools** | When running languages on macs we can run swift 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. And with multiple tools, notepad++ is a simple-to-use tool. Languages consist of but are 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. | <Identify the relevant programming languages and tools (IDEs and other tools) that are used to build this type of software for deploying on Mobile Devices.> |

## 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 won’t 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’re working with your IDE and opening files from it to create the game.>
5. **Distributed Systems and Networks**: Because each operating system is different I investigated ways to publish the game to run on all dives. I found Develop 4 which enables cross-platform game creation. It’s an IDE that can be run on any device. Once the game is created you can simply export the game file onto 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. 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 come pre-equipped with protection. This system scans 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.