

<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)

<Write a summary to introduce the software design problem and present a solution. Be sure to provide the client with any critical information they must know in order to proceed with the process you are proposing.>

## Requirements

*<* Please note: While this section is not being assessed, it will support your outline of the design constraints below. *In your summary, identify each of the client’s business and technical requirements in a clear and concise manner.>*

## [Design Constraints](#_2et92p0)

<Identify the design constraints for developing the game application in a web-based distributed environment and explain the implications of the design constraints on application development.>

## [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)

<Describe the UML class diagram provided below. Explain how the classes relate to each other. Identify any object-oriented programming principles that are demonstrated in the diagram and how they are used to fulfill the software requirements efficiently.>

**"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 must 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** | Provides users with a terminal to configure the server. Macs also run very quickly when compared to others, although they are not very cost effective and lacks software availability | Cost effective and like Mac, provides a terminal that can configure server settings with ease. Although may be difficult to use for those unfamiliar to the platform | Has more software available for server-side development, although it lacks a flexible terminal and can be difficult for those unfamiliar to the platform | Would benefit from an immobile server located in a unique location. Although its main drawback being that specs differ between users. |
| **Client Side** | Medium-Level expertise is required to do client-side development on Mac. Less time is needed than on other platforms. Although a bit pricey when compared to other OS | High-Level expertise is needed, more time is needed to develop with this OS, although it is the cheapest OS to develop on. | High-Level expertise is needed, a decent amount of time is needed to develop on Windows, and like Mac, is a bit pricey when compared to Linux | It is more difficult to develop on, but it provides gives more flexibility to developments as they can receive updates on the go. |
| **Development Tools** | Runs languages such as HTML, CSS, and JavaScript. Has Xcode as an easy-to-get IDE, although it lacks any other notable IDE’s. | Runs languages such as HTML, CSS, and JavaScript. Can work with IDEs such as Eclipse and VS. | Runs HTML, CSS, and JavaScript, and like Linux, works with Eclipse and VS. | Runs HTML, CSS, and JavaScript. Has tools that allow for app development for IOS and Android |

## 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 client to begin developing on Windows. As even though it requires a bit more expertise than Mac, it has more software for use and is not as pricey
2. **Operating Systems Architectures**: By using Windows, it will be able to provide with software and applications that can help with graphics, multimedia, messaging/communications,
3. **Storage Management**: This will allow users to manage their files on their hard drive. This allows for better storage management/accessibility by allowing users to save their files where they choose.
4. **Memory Management**: This allows users to create a library for image storage. By allowing easy and accessible storage, their projects will be kept secure.
5. **Distributed Systems and Networks**: Since each OS is different, the game should be created in a way that it can be exported to the other platforms. Getting reliable servers for the game will help prevent outages and lost connection
6. **Security**: I would recommend having an alternative security protection software, while Windows does have one built-in, it is better to safe not sorry.