

Draw It or Lose It

# **CS 230 Project Software Design Template**

Version 1.0

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## [Document Revision History](#_grjogdjh5fi8)

| Version | Date | Author | Comments |
| --- | --- | --- | --- |
| 1.0 | 11/12/2023 | Jordon Burris | Changes in the design document, executive summary, design constraints, domain model, and updates in the Java code. |

**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 company The Gaming Room would like to develop a web-based game called “Draw It or Lose It.” This is a game where teams will guess what is being drawn, rather than drawing the images, the application will render stock images from a library or stock drawings. It consists of four rounds of one minute each.

## Requirements

* A game will have the ability to have one or more teams involved.
* Each team will have multiple players assigned to it.
* Game and team names must be unique to allow users to check whether a name is in use when choosing a team name.
* Only one instance of the game can exist in memory at any given time. This can be accomplished by creating unique identifiers for each instance of a game, team, or player.

## [Design Constraints](#_2et92p0)

* Must be web-based.
* Ability to work on multiple platforms.
* Only one instance can exist at a time.
* Must be able to support multiple players on a team.
* Unique team names.

## [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, Player, and Team class all pull from the entity class, this would make Entity a superclass. And the actual game service is a branch from Game class.

**"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** | Easy to use and extremely flexible. Easy to configure and access server side information. One of the main downsides of Mac is it will be expensive to maintain. | Like Mac, both use Unix, so easy to use and access information. Does require some skill to use. The main kicker for Linux is it is free and open sourced this would mean very inexpensive development. | Very flexible and widely used but can be expensive. Very user friendly. Windows is very widely known and has a lot of different types of development like .NET and SQL would come in handy. But the windows licensing would come a higher cost. | Server side requirements can vary from user to user. Not very flexible. Very little support. |
| **Client Side** | Moderately expensive. Moderate time. And I would say moderate expertise as well. | Very affordable and open source. Moderate time, depending on skill level. Maximum expertise. | Moderately expensive. Short development time and moderate to little expertise. | More difficult to implement than other devices but could be more affordable. |
| **Development Tools** | HTML, CSS, and Javascript. Visual Studio Code, GitHub. | HTML, CSS, and Javascript. VIM EMACS, GitHub. | HTML, CSS, and Javascript. Visual Studio Code, Ecplise, GitHub. | HTML, CSS, and Javascript. Visual Studio Code, GitHub. |

## 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**: For Flexibility and cost reasons, I would choose Windows.
2. **Operating Systems Architectures**: It offers file storage and can easily compile and run software from various IDE’s and languages.
3. **Storage Management**: Windows has an easy to use file management system with a graphical user interface.
4. **Memory Management**: Windows makes memory management very easy with simple GUI interface for file systems and ability to monitor and control running programs through the task manager.
5. **Distributed Systems and Networks**: <Knowing that the client would like Draw It or Lose It to communicate between various platforms, explain how this may be accomplished with distributed software and the network that connects the devices. Consider the dependencies between the components within the distributed systems and networks (connectivity, outages, and so on).
6. **Security**: Windows has security systems built in that will give recommended system security preferences. This allows for ease of use and easy maintenance. Windows also has a lot of compatibility with outside security programs.