

# User Interface

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## Design Plan I

**Software Engineering Capstone Project Team 2**

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## 1.0 Tic Tac Toe User Interface

The main goal of the user interface design is to facilitate the usability of the website. It also aims to develop and maintain a consistent feel of the website environment .

This encompasses the effectiveness, efficiency and satisfaction of a user's handling of the website:

- the accuracy and completeness with which specified users can achieve specified goals in the game environment;
- how well the users use the resources or options available to them in order to accurately and completely achieve these goals;
- the comfort and acceptability of the game environment to the users.

## 2.0 Interface Requirements

The requirements for the user interface are derived from the project requirements. Only the relevant project requirements are used.

Here, the main requirements are stripped to the basic concepts that will be included in or required of the interface. Because the project is following an *agile approach* to develop, specific elements may be added to the interface as the project progresses. In addition, the overall UI is expected to be revised after user testing.

### 1. The game is running in a web browser, no additional plug-ins are required. Compatible web browsers that must be supported are Chrome, Safari and Firefox.

- The interface must be implemented purely in HTML, CSS and/or JavaScript - without the use of other constructs such as Flash.
- The interface must be usable across the three platforms specified.

### 2. Users can play TTT online against other users.

- **Users can create online public games.**
  - An option to create a game should be available.
  - The user can specify the name of the game.
  - The user can specify the game to be public.
- **Users see public open games, and join them.**

A list of games should be available. This should show:

  - Game name.
  - If it's closed/open.
  - If it's public/private.
  - User who created the game.
  - Whether or not that user is online.
  - Whether or not it is a bot challenge.
  - The time the game was created.
- **Users can create private games that can only be joined by players specified by the user who creates the game.**
  - The user can specify the game to be private.
  - The user can specify another user to challenge.

### 3. Users can play against the computer.

- **Users can select a computer opponent ("bot") from a list of available bots.**
  - The user can specify a bot to challenge.

**4. Games can be replayed.**

- **Users can replay games played by them before.**
  - Games played by a user before should be made available on the games list.
  - Game summary is available. This should show:
    - The game name.
    - The result.
    - The opponent.
    - Option to replay.
    - Option to hide/delete.

**5. Users can program their own bots.**

- **Users can program bots using Java.**
  - An option should be available for the to program their own bot.
- **Users can write code directly in the browser.**
  - The user can write their own bots using a template or from scratch.
- **The web based editor supports basic IDE functions like syntax highlighting.**
  - The web based editor can also suggest and provide a template for an average user who has little knowledge of Java.
- **Bots can be private or public. If a bot is public, anybody can see it and play against it. If a bot is private, only users the bot has been shared with can play against it.**
  - On the list of games, private bot games must be indicated.
- **Before bots are deployed, they are verified (i.e., checked for correctness).**
  - An option must be available for users to verify that their bot is correct.
  - Incorrectly written bots should not be accepted and users must be notified of this.

**6. Users can login using external authentication. Users are identified by email or screen name, and can use Google or Facebook accounts to log in.**

- An option to login must be available.
- Users can create a profile using a screen name or email using their Google or Facebook accounts.
- An option to logout must be available.
- Optional: Ability to post scores/invites to Facebook.

**7. A video tutorial describing how to use the software is produced and published on YouTube.**

The video tutorial must offer basic instructions on:

- How to create a game.
- How to join a game.
- How to create a bot.
- Logging in.

## 3.0 The Concept

### 3.1 Conceptual Description

The main goal of the user interface design is to facilitate the usability of the website. The user interface must ease the transition of a new user into becoming familiar with the website by showcasing the available functionalities in the most appealing, yet practical way possible. As can be seen from the Interface Requirements, the functionalities can be grouped into three main categories: Creating game, playing a game and networking. The UI will aim to connect the user to these three main areas so that they are as accessible as possible without confusing the user.

### 3.2 Preliminary Concepts

Below is a list of the Interface Requirements in the context of the three categories stated above. It also includes some new concepts which have been added below; these are mainly general networking concepts which describe how a user can interact with other users and the website.

The main functionality of the website is to create games, play games. The UI must aim to make this as simple as possible and display all the options available in the most practical way. Therefore, basic options that must be available and be displayed are:

1. Creating a new game.
  - i. Create a new game.
  - ii. Specify private/public.
  - iii. Specify opponent.
  - iv. Choose a bot.
  - v. Create bot.
  - vi. Verify bot.
  - vii. Choose a game name.
2. Playing a game.
  - i. Choose a public game.
  - ii. Accept a private challenge.
  - iii. Replay a game.
  - iv. Hide a game already played.
3. Networking.
  - i. List of available games.
  - ii. List of friends.
  - iii. Profile.
  - iv. Login/logout.
  - v. Help and support.

## 4.0 The Design

### *4.1 Skeumorphism vs Flat*

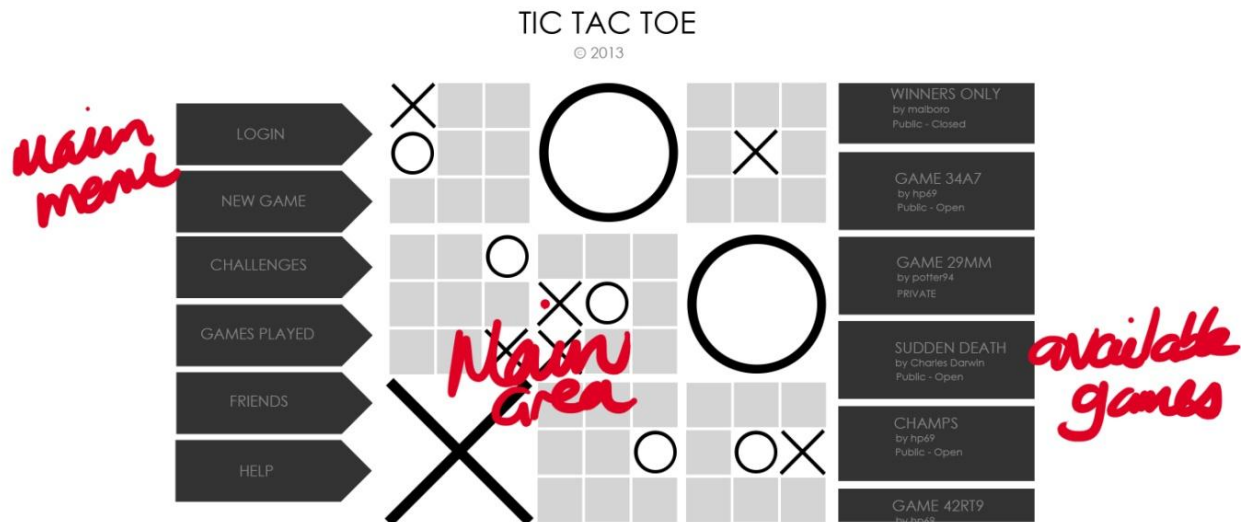
Skeumorphism designs produce elements that sound and, most importantly, look like real-life analogues that they are named after. For instance, a graphically designed bell button on a website form that sways and rings when it is clicked on.

Flat designers on the other hand, create graphical interfaces based on the principle that functionality overrules style. Shadows, reflections, gradients and bevelled edges are not used in flat designs. Flat design aims to play to the strengths of digital interfaces and relies on colours, typography and shapes to enhance visual clarity in communicating with a user.

### *4.2 Choosing a Flat Design*

Flat design has become the current design trend and for practical reasons, as well as aesthetic. Because websites and apps are now run across many different platforms, it can be difficult and time consuming to customize skeumorphic designs for these different platforms. Adopting a flat design is easier with regards to multiple screen sizes and resolutions. It also cuts down on loading time as there are less graphics to download.

### 4.3 Initial UI Design Concept



The above is an initial layout of the website. It comprises of three main areas, as seen: main menu, main area and list of available games.

- The main menu contains links to login, creating a new game, list of private games, list of games played, networking and tutorials. All of these links are visible and are able to be accessed at any time.
- The main area is the "activity hub" of website. Users will play their games in this area. All other content, to which the links in the main menu point to, will also be displayed in this main area.
- The games list displays a list of available games. Each game shows the game title, the user who created the game, if it is public or private and if it is open or closed. This list is visible at all times.

The specific elements of the UI will be revised as the project progresses.



## 5.0 The Next Phase

In the next phase, more screencasts of the Initial UI Design Concept will be made. Following this, Essential Use Cases of each user task will be drawn up. From this, final elements of the website can be created as more non UI components of the website are completed and made available.