BSC – HGP - Assignment 2

Pictionary Game

UI Design Document

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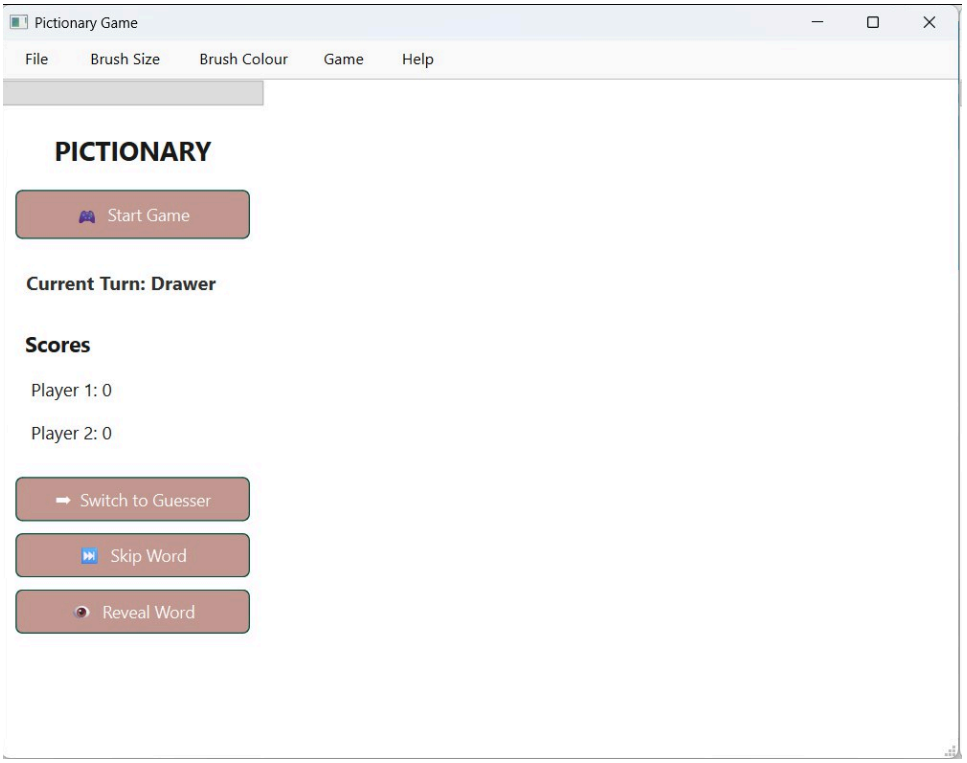
1. Introduction

The Pictionary game requires an intuitive interface that makes players focus on drawing and guessing rather than navigating through controls. According to the Nielsen Norman Group, minimal cognitive load enables quicker decision-making during time-sensitive tasks. To optimize user interaction on a shared laptop interface prioritizes large, clear interactive elements that are easily accessible and understandable. This design guarantees a collaborative gaming environment.

2. Overall Layout

2.1 Main Window Overview



Layout of menu bar, left dock and center canvas follow well-established and well known UI principles:

Location Rationale

- The canvas is placed in the center creating a strong visual accent, making sure that the main gameplay action receives most attention and has most of the available space.

- The left dock follows standard design patterns observed in interfaces where scanning starts left-to-right, making the dock first place which players check for game information. Following structure applying widely in graphic editors(eg. Photoshop, Pain)

Design Principles Used

- **Fitts Law:** Important actions, such as "Start Game" or the turn indicator, are placed on the left edge to reduce the distance the pointer must travel.
- **Gestalt Principle (Proximity):** To reduce searching time, all game-relevant controls are grouped together in the dock.
- **Responsiveness:** The canvas expands with the window to support different screen resolutions and ensure accessibility for various device sizes.

3. Menu Bar Design

3.1 Location

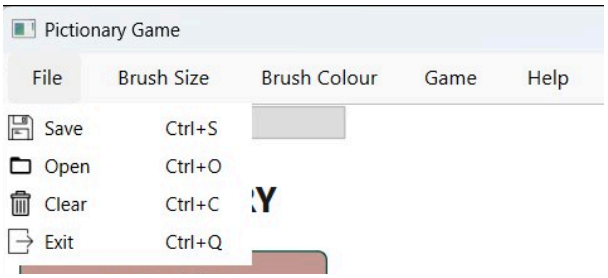
The rules for how desktop user interfaces (Windows HIG, macOS HIG) should be designed say that menus must always be placed at the top of the window. If you put the menu in this position, people will recognize it right away and won't have to make any decisions. The users don't have to learn a new layout, so it's easier for them to understand.

3.2 Style

The menu designed with:

- A light gray background used to make black text easier to read without causing eye strain.
- The normal drop-down style saves time when learning how to use it. A user will take advantage of their previous experience with similar applications like Paint or Notepad.

3.3 File Menu



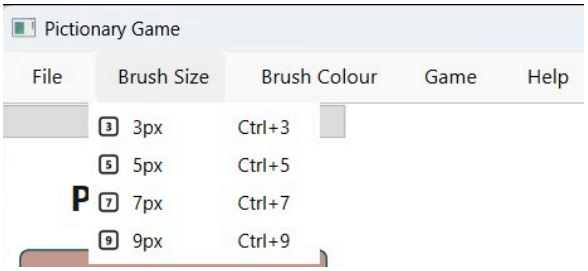
Components:

- Save (Ctrl+S)
- Open (Ctrl+O)
- Clear (Ctrl+C)
- Exit (Ctrl+Q)

Design Decisions

- Using icons makes it faster to recognize an action because icons are based on matching a pattern (recognition vs. recall principle).
- Keyboard shortcuts make the distance between movements shorter (Fitts Law), which makes them faster to use rather than searching for an action in the middle of the game.

3.4 Brush Size Menu



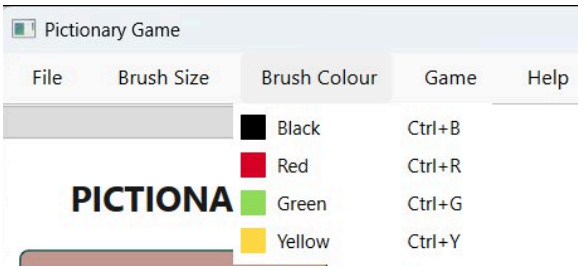
Components:

- 3 px
- 5 px
- 7 px
- 9 px

Design Decisions

- The size of the brush is selected in the menu bar instead of the dock. This keeps the "tool" actions separate from the "gameplay" actions. This follows Shneiderman's rule of striving for consistency.
- Using icons with dots helps players understand thickness before they select, which makes them choose faster (Hick's Law: fewer choices + clear representation = faster selection).

3.5 Brush Colour Menu



Components:

- Black
- Red
- Green
- Yellow

Design Decisions

- Dark colors like black, red, yellow, and green look really good on a white background.
- These colours avoid problematic combinations for the colour blindness types
- Limiting the color selection down to four available colours avoids overwhelming players with unnecessary options (Hick's Law).

3.6 Game Menu

Components:

- **Start Game (Ctrl+N)**

Design Decisions

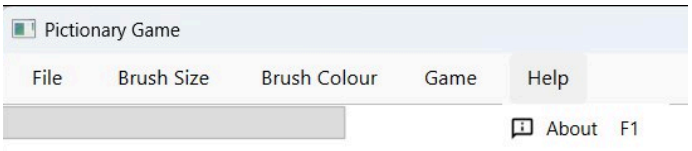
Start Game action is placed in both the Game Menu and the left dock.

- **Menu Bar:**
  It provides the traditional, application-level access point. This is based on how desktops work on Windows and macOS, so it's easy to use.

- **Dock Panel:**
  It lets you start a new round quickly and easily during gameplay. This reduces the movement of the pointer (Fitts' Law) and allows for quick interaction without opening menus.

- **Reason for duplication:**
  This is a common design approach (redundant accessibility) used in many applications where important actions are available both in menus and on-screen controls. It makes it easier to find and use, and it works well for different users.

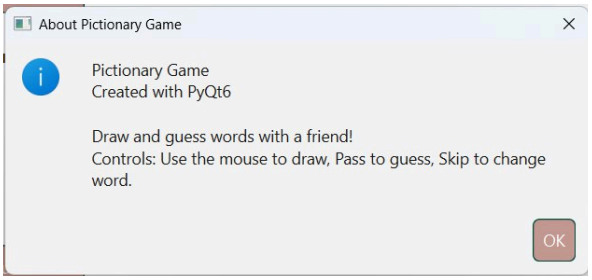
3.7 Help Menu



Components:

- **About (F1)**

The "Help" option is located at the far right, following the standard UI convention for desktop apps. This makes it easy for users to find game rules and information without having to search extensively.



4.Left Dock: Gameplay Panel

The main control zone of the game is the left dock.

It shows the game state, score of players and round state.

4.1 Location

Putting the dock on the left makes it easier for people to read from the left to the right. It also makes sure there are no things blocking the area where you're drawing.

The dock is fixed to the left side of the window.

This is similar to popular applications in which tool panels can be put on the left side, with the drawing area being free to the right.

It is sticked (not floating, not closing) so as not to interfere with the play.

4.2 Layout & Structure

The docks are lined up vertically, with plenty of empty space between each one, which makes everything look neat and organized. This follows the Gestalt principle of proximity, which helps players quickly find score, turn, information, and controls. Layout includes:

Size:

Buttons and labels are made bigger so that you can read them from far away, even if two players are sitting at different angles.

Style:

The text uses consistent fonts and spacing, following a rule of consistency.

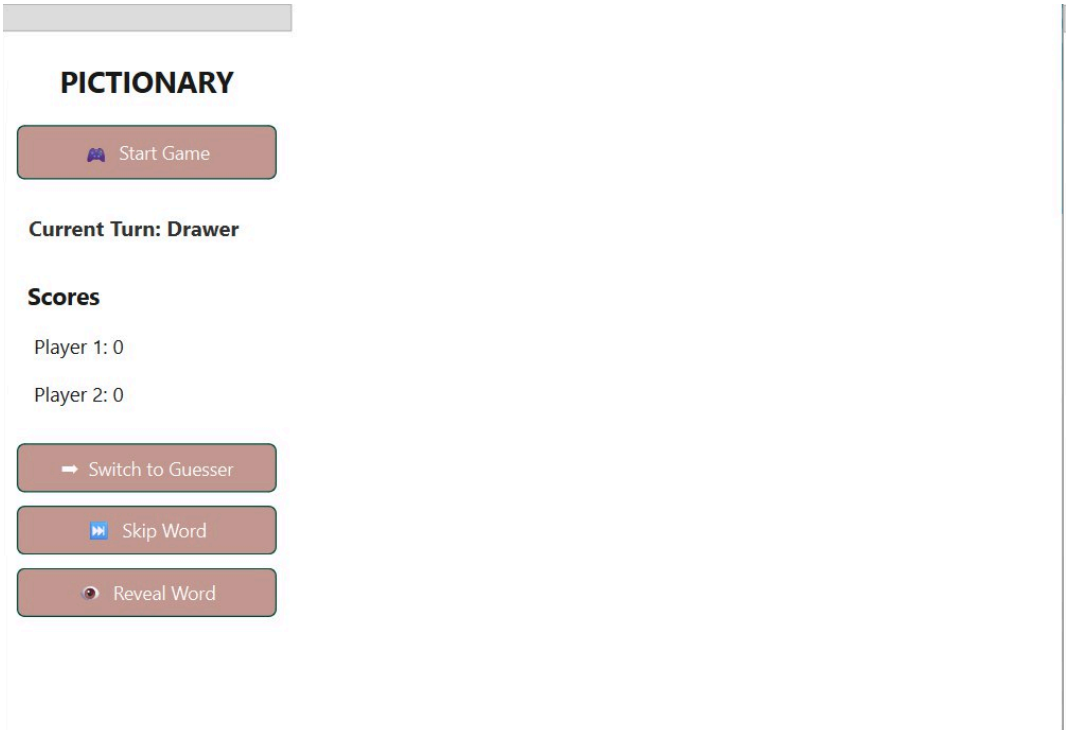
4.3 Colour & Style

The warm pastel color scheme from coolors.co is designed to be non-distracting. The rules for designing user interfaces (UI) say that you should use colors that aren't too bright for the buttons and other controls so that the user can focus on what's important. The soft pink and brown colors of the button background stand out against the white text, making it easy to read.

4.4 Button Size and Shape

- Large buttons make it easier to click (Fitts' Law).
- The rounded corners make it look friendly and modern, and they also make it look interactive. Padding increases touch targets, aligning with accessibility guidelines.

5. Drawing Canvas



Location:

It is in the center because it is the most important part. Central placement makes it easy to see everything.

Functions

Draws lines according to:

- Current brush size
- Selected colour
- Mouse path

Style

The white canvas makes it easy to see the different colors of brushes, just like traditional sketching tools.

Responsiveness

Automatically resizing the canvas shows that the design is responsive. This makes sure that users with smaller screens still have enough space to draw.

6. Status Bar

Location:

It is placed at the bottom because desktop applications traditionally use the footer to show subtle information about the application's state (Windows UI guidelines). This helps users know where to look without needing instructions.

Displays:

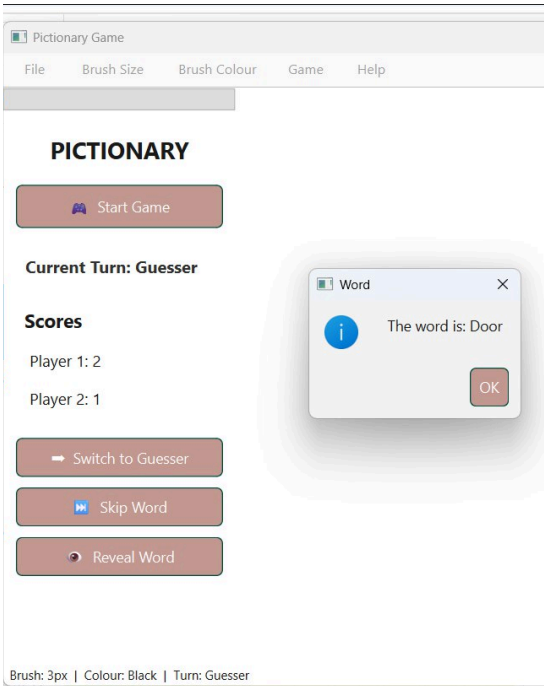
- Brush size
- Brush colour
- Current role (Drawer or Guesser)

Design Decisions

The status bar shows only a little text, so users can understand information while drawing. The game's simple style doesn't distract from the gameplay.

7. Dialog Windows

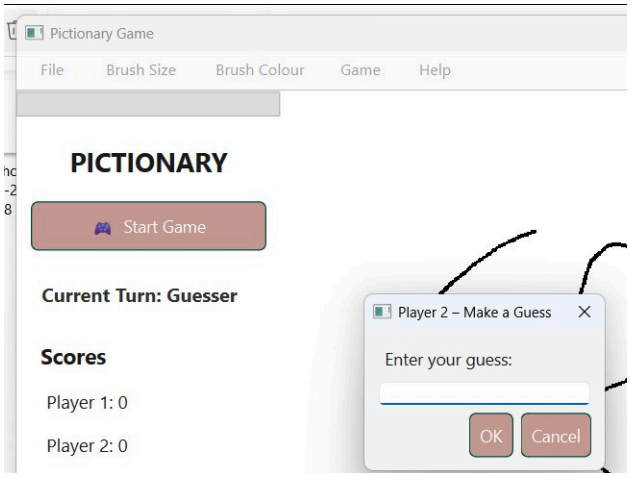
7.1 Word Reveal Dialog



Design Decisions

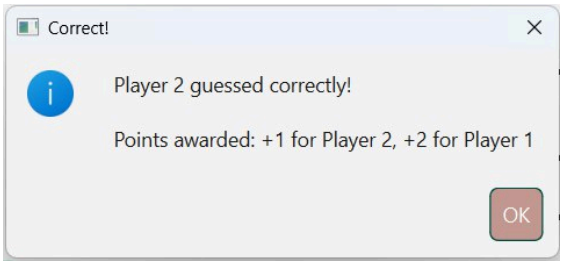
Modal dialog windows are special **windows** that appear when you need to do something important. They keep the drawer from being distracted so that it can receive the word. Modal design prevents accidental clicks elsewhere, which is important during time-based activities. Large, centered text makes it easier to read and meets accessibility guidelines for minimum text size.

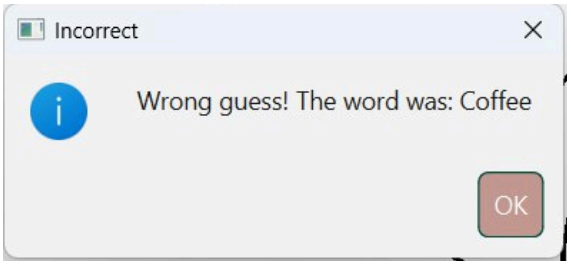
7.2 Guess Input Dialog



Design Rationale

The guess dialog has a white design that helps you focus on guessing without distractions. Positive or negative feedback happens right away. It follows UI feedback principles. These principles state that actions should always result in clear, understandable system responses.





8. Accessibility Considerations

- The colors used don't have low-contrast combinations
- Larger fonts (14–16pt) make text easier to read.
- Large clickable areas make it easier for users with motor limitations.
- The layout is consistent, which makes it easier to predict and use. This helps users with cognitive difficulties.

9. Additional Functional Features

9.1 Fixed Dock Widgets *(Visual Feature)*

If the dock can't be moved, it won't be accidentally rearranged. This is a common issue during fast gameplay, where users click rapidly. This helps make sure that the system is reliable and reduces frustration.

9.2 Status Bar Dynamic Updates

Real-time updates help each player understand the current role. This is important for guessing games where players take turns.