Hangman Game Project Report

GitHub links:
https://github.com/neva4434/HangmanGame/tree/main
https://github.com/rumeysa-cyber/HangmanGameFinalProject/tree/main

Project Description :

In our Hangmn Game project, we designed the game using JavaFX.First, players are welcomed by a login screen where they are asked to enter a username and password to register. After registration, players select a difficulty level and start the game. According to the selected level, a random word is assigned from the words listed in the words.txt file. The player tries to guess the correct word by entering random letters. Each time the player enters an incorrect letter, the hangman drawing begins. The number of allowed incorrect guesses varies depending on the selected difficulty level. The main goal of the player is to guess the correct word before running out of attempts.Finally,after the game ends,the information about whether the users won or lost is stored in the result.txt file.

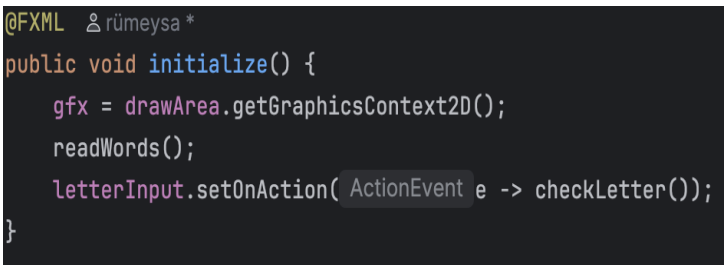
Key Features of the Application :

- Login screen (registration and login)
- Difficulty level selection ("Easy", "Medium", "Hard")
- Word guessing screen (drawing the hangman on Canvas)
- User feedback based on correct/wrong guesses
- Separate registration for each user
- Words are read from a .txt file

Special Challenges :

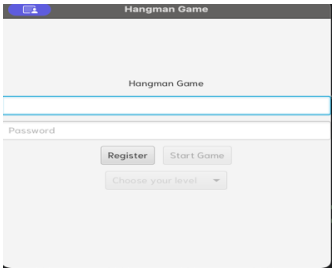
Finding the correct module path
Linking FXML files to the controller class
Combining user registration and login on the same screen
Structuring certain methods (such as checkLetter, initialize)

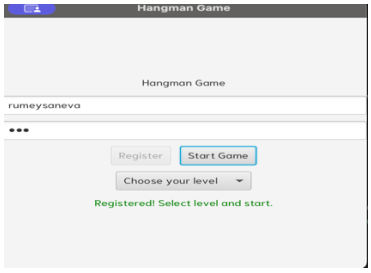
```
private void checkLetter() {
    String input = letterInput.getText().trim().toLowerCase();
    letterInput.clear();

    if (input.length() != 1 || !Character.isLetter(input.charAt(0))) {
        resultLabel.setText("Type one letter.");
        return;
    }

    char ch = input.charAt(0);
    boolean found = false;

    for (int i = 0; i < word.length(); i++) {
        if (word.charAt(i) == ch) {
            shown[i] = ch;
            found = true;
        }
    }

    if (found) {
        updateWord();
        if (!new String(shown).contains("_")) {
            resultLabel.setText("🎉 You won!");
        }
    } else {
        wrongCount++;
        triesLabel.setText("Mistakes: " + wrongCount);
        drawHangman(wrongCount);

        if (wrongCount >= maxTries) {
            resultLabel.setText("💀 Game over! Word: " + word);
            wordBox.setText(word);
        }
    }
}
```

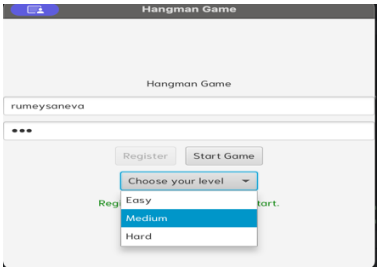


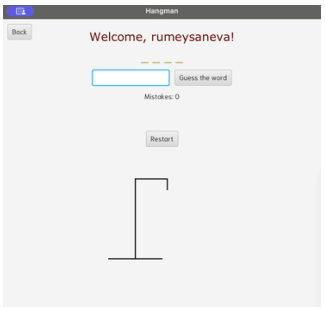
```
@FXML  rümeysa *
public void initialize() {
    gfx = drawArea.getGraphicsContext2D();
    readWords();
    letterInput.setOnAction( ActionEvent e -> checkLetter());
}
```

Screenshots :









Feature Evaluation Table :

Feature	Successfully realized (Yes or No)	Source code file names
Basic functionality	Yes	Main.java, LoginController.java, GameController.java, login-view.fxml, game-view.fxml
Authentication	Yes	LoginController.java,login-view.fxml
File processing	Yes	results.txt, GameController.java
Additional features		
Level selection option	Yes	LoginController.java, GameController.java, login-view.fxml
Canvas drawing	Yes	GameController.java

References:

ChatGPT ,Some Youtube channels ; Dylan Codes (JavaFX Hangman Tutorial Part 1 – 2), Random code (JavaFX and Scene Builder - Hangman tutorial LIVE), Programming-2 lesson slides

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