Dice Roller Application (Android – Kotlin)

1. Introduction

The Dice Roller Application is a simple Android app developed using Android Studio and programmed in Kotlin. The purpose of this application is to simulate rolling a pair of dice using random number generation. The app visually displays dice images and produces a special message when both dice show the same number.

2. Objective

- The main objective of this lab is to:
- Understand random number generation in Kotlin
- Learn how to handle button click events
- Update images dynamically using ImageView
- Apply conditional statements (if–else)
- Improve Android UI design skills

3. Tools and Technologies Used

- Android Studio (IDE for development)
- Kotlin Programming Language
- XML for designing the user interface
- Android Emulator / Physical Android Device

4. Working of the Application

When the application is launched, two dice images are displayed on the screen along with a "Roll Dice" button. When the user clicks the button, the program generates two random numbers between 1 and 6 using Kotlin's random function. Based on the generated numbers, the corresponding dice images are displayed using ImageView components. If both dice display the same number, the application shows a fun congratulatory message such as "Wow! It's a Double!" Otherwise, it simply displays the rolled numbers.

5. Key Concepts Implemented

- Random number generation (Random.nextInt(1,7))

- Event handling using setOnClickListener
- Image resource handling in Android
- Conditional statements

6. Challenges Faced

- Some challenges encountered during development included:
- Linking XML layout elements with Kotlin code
- Handling resource naming correctly
- Debugging app crashes due to incorrect IDs
- Understanding dynamic image loading
- These challenges helped improve debugging and problem-solving skills.

7. Outcomes of the Lab

After completing this lab, I gained practical knowledge of Android app structure, learned how to generate random values, understood event handling mechanisms, and improved my confidence in developing interactive Android applications. This lab strengthened my foundation in mobile application development.

8. Conclusion

The Dice Roller App is a beginner-friendly Android project that effectively demonstrates core concepts such as random number generation, UI interaction, and conditional logic. Completing this lab enhanced my understanding of Kotlin programming and Android development, preparing me for more advanced mobile application projects in the future.