**⁠✷Synopsis for Weather Forecasting Simulation Project in**

**C language**

**Introduction:**

Weather forecasting is a crucial aspect of meteorology, helping predict weather conditions for various regions. This project aims to design and implement a weather forecasting simulation using C language, generating random weather data and displaying forecasts.

**Objectives:**

1. Develop a C language program to simulate weather forecasting.

2. Generate random weather data for temperature, humidity, and weather conditions.

3. Display weather forecasts for multiple cities.

4. Utilize object-oriented programming principles.

5. Handle user input and errors.

**Tools and Technologies:**

1. Programming language: C language

2. Compiler: GCC/Clang.

3. IDE: Visual Studio Code/CLion.

4. Operating System: Windows/Linux.

**Methodology:**

1. Literature Review: Study weather forecasting algorithms and models.

2. System Design: Plan program structure and classes.

3. Implementation: Write C language code for weather forecasting simulation.

4. Testing and Debugging: Verify program functionality and fix errors.

5. Documentation: Write user manual and readme files.

**Expected Outcome:**

1. A functional weather forecasting simulation program.

2. Accurate weather forecasts for multiple cities.

3. User-friendly interface for input and output.

**Conclusion:**

This project demonstrates a basic weather forecasting simulation using C. The program generates random weather data and displays forecasts for multiple cities. Future enhancements include incorporating real-time weather data and advanced forecasting algorithms.

**Future Enhancements:**

1. Integrate OpenWeatherMap API for real-time data.

2. Implement machine learning algorithms for improved forecasting.

3. Visualize weather data using graphs and maps.

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