Java Programming Tasks & Instructions — CodeAlpha

🖥️ Java Programming — Internship Overview

This internship program offers in-depth experience in Java development and object-oriented programming. CodeAlpha is a leading software development company focused on building robust, scalable, and enterprise-grade applications. The internship empowers students to master Java fundamentals, data structures, multithreading, and file handling, along with frameworks like Spring and Hibernate. Interns will work on real-world projects, gaining hands-on experience in backend development, API creation, and application deployment. With expert mentorship and a collaborative environment, interns will develop strong programming and problem-solving skills in Java.

🎁 Internship Perks

- Internship Offer Letter
- Completion Certificate (QR Verified)
- Unique ID Certificate
- Letter of Recommendation (based on performance)
- Job Opportunities / Placement Support
- Resume Building Support

📌 Instructions for Interns

1. Share your internship status on **LinkedIn**, tagging **@CodeAlpha**.
2. Complete the **assigned projects** within the mentioned time frame.
3. Upload your complete source code to **GitHub** in a repository named:
   `CodeAlpha_ProjectName`
4. Post a **video explanation** of your project on LinkedIn with GitHub repo link.
5. Submit your completed task using the **Submission Form**.
6. **Complete any 3 or 2 out of the 4 tasks** listed below (from your domain).

📱 Java Programming Task List

(Complete any 2 or 3 of the following tasks)

✅ TASK 1: Student Grade Tracker

- Build a Java program to **input and manage student grades**.
- Calculate **average, highest, and lowest scores**.
- Use **arrays or ArrayLists** to store and manage data.
- Display a summary report of all students.
- Make the interface **console-based or GUI-based** as desired.

✅ TASK 2: Stock Trading Platform

- Simulate a basic **stock trading environment**.
- Add features for **market data display** and **buy/sell operations**.
- Allow users to track **portfolio performance** over time.
- Use **Object-Oriented Programming (OOP)** to manage stocks, users and transactions.
- Optionally, include **file I/O or database** to persist portfolio data.

✅ TASK 3: Artificial Intelligence Chatbot

- Create a **Java-based chatbot** for interactive communication.
- Use **Natural Language Processing (NLP)** techniques.
- Implement **machine learning logic or rule-based answers**.
- Train the bot to respond to frequently asked questions.
- Integrate with a **GUI or web interface** for real-time interaction.

✅ TASK 4: Hotel Reservation System

- Design a system to **search, book, and manage hotel rooms**.
- Add **room categorization** (e.g., Standard, Deluxe, Suite)
- Allow users to **make and cancel reservations**.
- Implement **payment simulation and booking details view**.
- Use **OOP + database/File I/O** for storing bookings and availability.

🚨 Important Note

Internship Completion Criteria:
To be eligible for the internship certificate, participants must complete a minimum of **two or three tasks**.
Submitting only one task will be considered **incomplete** and certificates will **not** be issued in such cases.

📤 Submission Details

A submission form will be shared in your respective **WhatsApp group**. You are required to submit your completed task only through that form. Please follow the instructions mentioned in the form carefully to ensure your submission is accepted.

📞 Contact Information

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