ByteXl guided projects

Build job relevant skill sets by developing solutions to practical use cases

ByteXl educators have created specialized guided projects so you can practice current technology languages / software(s) such as <……. Python, Java, Nodejs, …...>

Educators should create a Guided Project for students to execute on the byteXl App. Students should be able to complete the project in a short duration of time <Example: 2 hours > and the use case chosen should enable them to attend interviews with confidence.

Educators should create a project scenario which will enhance the job relevant skills as they guide the project through with a specially created hands-on experience available on byteXl's app.

Note: Placeholders have been created for educators to appropriately fill in the relevant details

Guided projects should be created with the following content:

Project based learning course overview:

About the project: Money Maestro is a user-friendly platform designed to help individuals optimize their investment strategies. It analyses users' portfolios, providing personalized recommendations to improve returns and reduce risk. Users can input their investment data, and the platform will assess factors like asset allocation and risk tolerance, identifying areas for improvement.
In addition to personalized insights, Money Maestro offers a wealth of educational resources, empowering users to make informed decisions about their investments. Whether you're a beginner or a seasoned investor, this platform aims to simplify the investment process and enhance your financial literacy, making investing more accessible and effective.

Prerequisites:

For Developers:
1. Basic Programming Skills: You should know the basics of Java to tackle the backend development.
2. Web Development Know-How: Familiarity with HTML, CSS, and JavaScript will help you create an engaging user interface.
3. Framework Familiarity: A basic understanding of Spring Boot for backend and React or Angular for frontend development is important.
4. Database Basics: Knowing how to work with relational databases like MySQL or PostgreSQL will be essential for managing user data.
5. Investment Knowledge: A grasp of fundamental investment concepts will help you design effective analysis tools.

For Users:
1. Investment Fundamentals: A basic understanding of investments, including terms like risk tolerance and asset allocation, will enhance your experience.
2. Data Preparation: Be ready to gather and input your financial data, like current investments and goals.
3. Internet Access: Since Money Maestro is web-based, a reliable internet connection is a must to use the platform.

What will you learn?
Working on the Money Maestro project offers students a wealth of valuable experiences:
1. Software Development: Students will sharpen their coding skills by building a full-stack application using Java, Spring Boot, and React or Angular.
2. Investment Insights: They'll learn how to analyse investment portfolios, understand asset allocation, and assess risk levels, gaining practical financial knowledge.
3. Data Handling: Experience with databases like MySQL or PostgreSQL will teach them how to manage and manipulate data effectively.
4. Algorithm Creation: Designing algorithms for portfolio analysis and personalized recommendations will enhance their problem-solving abilities.
5. User-Friendly Design: They'll learn the importance of creating intuitive interfaces that make financial concepts accessible to all users.
6. Financial Literacy: Developing educational resources will deepen their understanding of investment strategies and financial planning.
7. Project Management: Students will manage the project from start to finish, learning about collaboration, testing, and gathering user feedback.

Skills you will practice:

1. Enhance programming skills in Java and work with frameworks like Spring Boot and React.
2. Sharpen web development and database management abilities using HTML, CSS, JavaScript, and MySQL.
3. Create algorithms for portfolio analysis and personalized recommendations.
4. Learn to design intuitive user interfaces that engage users effectively.
5. Gain experience in project management and problem-solving through real-world challenges.

How to execute? Your learning platform:
- Practice new skills by completing job-related tasks
- No downloads or installation required. Use your Nimbus access to access all the tools.
- Practice on your desktop or laptop. This cannot be developed on your mobile phones.

Use Nimbus on byteXI's platform:

Learn, practice and enhance job relevant skills in just <2 hours>
- Receive detailed instructions from instructors

- Gain hands-on experience solving real-world case studies
- Enhance your confidence with solutions developed on Nimbus using the latest tools and technologies

Learn step-by-step:

In this guided project, you will find your educator giving you a walk-through to complete your project in 20 hours.

Structure for educators:

How to create the use cases for students to practice?
Instructions:

Welcome to <Title of the Project>. This is a guided project which will take about <2 hours> to complete.
Here are the course objectives and structure:

Course Objectives:
In this project we will focus on the following objectives:

- **Objective 1:** Understand and apply fundamental concepts in investment strategy, portfolio analysis, and financial optimization. Students will learn about asset allocation, diversification, and risk management principles.

- **Objective 2:** Gain hands-on experience with software development practices, including the use of Java, Spring Boot, React, and database management for creating a fully functional web application. Students will also practice implementing and testing algorithmic solutions to analyze and optimize investment portfolios.

- **Objective 3:** Develop skills in data-driven decision-making by working with financial data, implementing portfolio analytics, and generating personalized recommendations. This includes learning how to use data to inform investment strategies and applying financial theory to practical, user-centered applications.

By the end of this project, you will be able to you will be able to build a full-stack web application that analyses and optimizes investment portfolios, providing data-driven recommendations and financial insights.
4o

You will deploy the project on the Nimbus Platform using Spring boot, MySQL tools / platforms

Course Structure:
This course is divided into 3 parts:

Course overview: This is the introductory reading material.

Project structure:

The hands-on project on Money Maestro is divided into following tasks:

Task 1:

Collecting and Organizing Data

Start by gathering all the necessary data—user investment details, market trends, and risk preferences. Organize and clean this data so it's accurate and ready to power the analysis.

Task 2:

Building the Portfolio Analysis Core

Develop the core functionality that will analyze each portfolio's asset mix, diversification, and alignment with user goals. This is where we'll calculate performance metrics and assess how well each portfolio matches the user's risk tolerance.

Task 3:

Creating the Recommendation Engine

Design an intelligent engine that offers personalized investment advice based on the portfolio's strengths and weaknesses. From suggesting better asset allocations to recommending rebalancing strategies, this engine will provide tailored guidance.

Task 4:

Adding Educational Content

Develop a library of articles, tutorials, and other resources to guide users in understanding investment strategies and financial planning. This content should help users become more confident investors.

Task 5:

Designing the User Interface

Build an intuitive, easy-to-navigate interface. Users should be able to input data, view their portfolio analysis and recommendations, and explore educational resources with ease.

Task 6:

Testing, Launching, and Refining

Thoroughly test each part to make sure it's working as expected, then launch the platform. Gather feedback and make any necessary improvements to ensure it's user-friendly, accurate, and engaging.

…

Meet your educator:

Hi I am Soumen Mukherjee and I will be your instructor for your course. I have about 4 years of experience in Android Development and Full Stack Java Development implementing database, Spring and JavaScript frameworks. I have worked in Maharashtra before with IT industries and training institutes. I have a Bachelor's degree in Technology. When I am not teaching, I enjoy learning newest technologies and I also like watching football championship leagues.

Welcome to the Guided Project!

About the Nimbus Platform:

ByteXl Nimbus is a cloud development tool that helps developers create and deploy applications effectively.
Seamless Integration: Nimbus allows easy integration with various tools and technologies, enabling developers to maintain their existing workflows
Scalability: Nimbus is designed to scale efficiently, accommodating user growth without compromising performance.
Local Development: byteXl Nimbus supports local innovation, aligning with initiatives that promote domestic technology solutions.
Workspace: Offers flexibility with no limits on user workspaces, allowing developers to manage multiple projects freely.
This platform is a game-changer for cloud development, offering streamlined workflows and powerful tools for building scalable applications.

Earn a Certificate: After you have completed the **Money Maestro: Personalized Investment Optimization** hands-on project, you should complete the Quiz to assess your knowledge. You will earn a certificate if you score 80 % or more

References:
Educators can access the links given below or any other resource for sample use cases and a basic understanding of how to create the project scenarios

Sl. No.	Some References for educators
1	https://leetcode.com/problem-list/du693s/
2	https://www.geeksforgeeks.org/coding-projects-for-beginners/#8-quiz-game
3	https://neetcode.io/courses

Sl. No.	Some References for educators
4	https://www.designgurus.io