PROMPTS FOR PEER TUTORING PROJECT

Some prompts that I gave are:

1. Phase: Project Initiation & Architecture Planning

Goal: Defining the microservices and AWS infrastructure.

Prompt 1 (The Vision): " I'm starting my final project. I want to build a 'Study Group & Peer Tutoring Platform' for my university. I want to use a microservices architecture on AWS so it's scalable. Can you help me figure out what the three main services should be? For example, one for users, one for bookings, etc. How should they talk to each other?"

Prompt 2 (AWS Infrastructure): "Based on those services, I need to design the network. Explain to me like a beginner how to set up an AWS VPC with public and private subnets. I want my RDS database to be private for security, but my frontend needs to be accessible via an Application Load Balancer. How does that work?"

2. Phase: Backend Development & Database Integration

Goal: Building the code and connecting to the cloud database.

Prompt 3 (Folder Structure): "I'm building the backend folder using Node.js and Express. Can you give me a clean folder structure for a microservice? I have my server.js and routes, but where should I put my database config files so the project stays organized?"

Prompt 4 (Database Security): "I'm using Amazon RDS (Dynamo). I don't want to hardcode my database password in my db.js file because that's unsafe. Can you show me how to use environment variables (.env) to connect my backend to the RDS instance securely?"

3. Phase: Containerization & AWS ECR

Goal: Dockerizing the app and pushing to the Amazon Elastic Container Registry.

Prompt 5 (Dockerizing): "I've used Docker before, but I want to make sure my Dockerfile is optimized for AWS ECS. Can you write a Dockerfile for my backend

that uses a small image (like Alpine) and explains what the EXPOSE command actually does for my service port?"

Prompt 6 (Pushing to ECR): "I created a repository on Amazon ECR. I'm a bit stuck on how to get my local image into the cloud. What are the exact commands to authenticate my terminal, tag my image, and push it to the ECR repo? Please keep it simple."

4. Phase: Deployment & Troubleshooting

Goal: Running the app on ECS and fixing common errors.

Prompt 7 (The 'Task Stopped' Error): "I tried to run my container on AWS ECS, but it keeps failing with an 'Essential container in task exited' error. I think it’s a port mapping issue or a health check failure. How do I check the CloudWatch logs to find the specific error message?"

Prompt 8 (CI/CD Automation): "I want to automate my deployment. Can you help me write a buildspec.yml file for AWS CodeBuild? I want it to automatically build my Docker image and trigger a Blue-Green deployment on ECS whenever I push new code to my repository."

5. Phase: Frontend & Final Deliverables

Goal: Polishing the UI and preparing the PPT/Poster.

Prompt 9 (Frontend Improvement): "My frontend is currently just basic HTML. How can I make it look like a modern SaaS platform? Should I use a framework or just add some Bootstrap? Also, show me how the frontend should call the API of my backend running on the AWS Load Balancer URL."

Prompt 10 (PPT & Poster Content): "I’m finishing my project report and poster. Can you summarize the 'Technical Implementation' section in a few punchy bullet points? Focus on Docker, ECS, and High Availability. I need it to sound professional but easy for people to understand at the presentation."

I have my proposal and I've implemented the backend in Docker and deployed it to AWS ECS. Can you give me a slide-by-slide outline for a 10-minute presentation? I want to focus on the 'Solution Architecture' and 'CI/CD Pipeline.' What are the most important points to show on the slides so I don't bore the audience with too much text?

In my PPT, I need to explain how the services work together. How should I describe this simply? Also, give me 3 bullet points for a slide on 'Why Microservices?' specifically for a student tutoring app.

I'm designing my project poster. I have a lot of technical info about Docker and AWS, but I know posters should be visual. What should I highlight the most? Should it be the system diagram or the problem statement? Also, give me a catchy, short title for the poster that sounds better than just 'Tutoring Project'.

I want to design a poster what would I mention as pros of my project? Give me keypoints not too detailed