Research Plan TuneTurtle

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Project Description

TuneTurtle is going to be the next Spotify. It's going to have most of Spotify's features such as playlists, liked songs, skipping songs, looping songs, changing volume, recommendations, and as many other features as possible. It's going to be a microservice structured project that is going to be hosted on the cloud.

Problem Description

The project is going to be hosted on the cloud. This is something that I've never worked with, and is quite hard for me to grasp still. That is why research on this topic is important, so that I can get familiar with how the cloud works, so that in the future I can implement the hosting of the project on the cloud without an issue. The difference between all the different cloud providers and the different options they all provide is very overwhelming for someone that has never touched the cloud before. I expect the research to take about 2 weeks in total.

Research Question

Main: What are the key steps and considerations involved in deploying a microservice-based project on cloud platforms, and how do these processes contribute to the overall functionality and scalability of the application?

Sub:

1. What are the primary factors to consider when selecting a cloud provider for hosting microservices?
2. How do containerization technologies such as Docker contribute to the ease of deploying microservices on cloud platforms?
3. How can automated deployment pipelines and continuous integration/continuous deployment (CI/CD) processes streamline the deployment of microservices on the cloud?
4. How do monitoring and logging solutions help in maintaining the health and performance of microservices deployed on the cloud?

Research Methods

During the research of this project I'm going to be utilizing research methods from the **DOT Framework** to make sure that I research my questions properly. Using the DOT framework is going to allow me to do research with a balanced perspective. I'm mainly going to be using these methods:

- **Community Research:** To look into if others have done this before and use that information.
- **Literature Study:** To find general information online.
- **Available Product Analysis:** Find out if what I've done has already been done by others in full.
- **Best Good and Bad Practices:** To look into what the best ways to tackle a problem is, and what not to do.
- **Prototyping:** To build something experimental with the information I've learnt to make sure that I fully grasp what I've researched.