Phase 1: Problem Definition and Design Thinking

Project Title: AI Driven Chatbot in Python

Problem Definition:

AI-driven chatbots have the potential to revolutionize customer service, support, and information delivery. However, many existing chatbots are limited in their capabilities and can only respond to a narrow range of queries. Additionally, they often have difficulty understanding natural language and can give inaccurate or irrelevant responses.

This project aims to develop an AI-driven chatbot in Python that can overcome these challenges. The chatbot will be trained on a large corpus of text data, including customer service conversations, product documentation, and other relevant information. This will allow the chatbot to learn to understand natural language and generate human-like responses to a wide range of queries.

Design Thinking:

Design thinking is a human-centered approach to innovation that can be used to develop solutions to complex problems. It is a five-stage process that involves empathizing with users, defining the problem, ideating solutions, prototyping and testing solutions, and implementing the best solution

- **Empathize**: The first step is to understand the needs and wants of the users of the chatbot. This can be done by conducting user research, such as surveys, interviews, and focus groups. We can also analyze existing customer service data to identify common questions and problems.
- **Define**: Once we have a good understanding of the users' needs, we can define the problem that the chatbot needs to solve. This should be done in a clear and concise way, and should focus on the user's perspective.
- **Ideate**: Next, we need to brainstorm possible solutions to the problem. This can be done by generating as many ideas as possible, without judgment. We can also use techniques such as mind mapping and storyboarding to help us come up with new ideas.
- **Prototype**: Once we have a few ideas, we can start to prototype them. This involves creating a working model of the chatbot that we can test with users. The prototype can be as simple as a paper prototype or as complex as a working software prototype.
- **Test**: Once we have a prototype, we can start to test it with users. This is an important step, as it allows us to get feedback on the chatbot and make improvements. We can test the chatbot by asking users to complete tasks, such as answering questions or troubleshooting problems.