

Phase 3:

Development Part 1

In Phase 1 and Phase 2, we outlined the project objectives and designed a comprehensive plan to develop an innovative image recognition system. Now, in Phase 3, we'll dive into the development of the project. This phase will involve different technology-specific tasks for AI & ADS, DAC, IOT, and CAD, each with its unique set of requirements. Let's elaborate on each of these technology areas:

AI & ADS (Artificial Intelligence & Advanced Data Science):

1. **Loading and Pre-processing the Dataset:** The first step in building the AI component of our project is to load and pre-process the dataset. This dataset should contain a diverse set of images with labelled emotions and moods, as specified in Phase 2. Pre-processing may include data augmentation, resizing, and normalizing images, as well as preparing labels for training.
2. **Performing Data Analysis:** With the dataset ready, you'll perform data analysis. This could involve statistical analysis of the emotional content in images, such as the distribution of emotions in the dataset. Visualizations can be created to better understand the data, which could help in refining the project's goals.
3. **Creating a Document:** Document your work in this phase, including the dataset loading and pre-processing steps, as well as the insights gained from data analysis. Share this document as "AI_ADS_Phase3" for assessment.

DAC (Data Analysis and Visualization with IBM Cognos):

1. **Loading and Pre-processing the Dataset:** Just like in the AI & ADS section, you will begin by loading and pre-processing the dataset using IBM Cognos. This may involve data cleansing, transformation, and aggregation to make the dataset ready for analysis.
2. **Data Analysis and Visualization:** Use IBM Cognos to perform various data analysis and create insightful visualizations. These visualizations can

help in understanding the emotional and mood data in the images. Consider creating dashboards to provide an interactive view of the data.

3. **Creating a Document:** Document your data analysis and visualization activities, sharing details about how you loaded and pre-processed the dataset and the key findings from your analysis. Share this document as "DAC_Phase3" for assessment.

IOT (Internet of Things):

1. **Deploying IoT Devices:** Begin by deploying IoT devices as per the project requirements. These devices should be capable of capturing images or videos and transmitting them to the central system for analysis.
2. **Developing a Python Script:** You will need to develop a Python script to run on the IoT devices. This script should handle image capture, processing, and transmission of data to the central system. Ensure that it works efficiently and reliably.
3. **Creating a Document:** Document your progress in deploying IoT devices and developing the Python script. Provide details on the devices used, the script's functionality, and how it contributes to the overall project. Share this document as "IOT_Phase3" for assessment.

CAD (IBM Cloud Foundry):

1. **Building on IBM Cloud Foundry:** Start building the CAD (Caption and Description Generation) component using IBM Cloud Foundry. Implement the functions and features as per the project requirements.
2. **Functional Testing:** After building the components, perform functional testing to ensure that the CAD system works as intended. This includes testing image recognition, caption generation, and user engagement features.
3. **Creating a Document:** Document your progress in building the CAD system on IBM Cloud Foundry and the results of functional testing. Share this document as "CAD_Phase3" for assessment.

In conclusion, Phase 3 is all about the hands-on development of the project, where each technology area contributes to the overall functionality and capabilities of the image recognition system. The success of this phase is crucial for the project's ultimate goal of providing users with an engaging and emotionally resonant image recognition system.