Project Design Phase-1

Proposed Solution

Date	26.09.2023
Project Name	Image Recognition with IBM Cloud Visual Recognition

Problem Statement:

The project aims to address the growing demand for an image recognition system using IBM Cloud Visual Recognition. The challenge is to create a user-friendly platform where users can upload images, and the system must accurately classify and describe the content. The goal is to enhance storytelling by enabling users to create captivating visual narratives with AI-generated captions, fostering stronger connections with their audience.

Definition:

This project aims to build an image recognition system powered by IBM Cloud Visual Recognition. The objective is to create a user-friendly platform allowing users to upload images, with the system providing precise classifications and descriptions of the content. This innovation will empower users to craft immersive visual narratives, harnessing AI-generated captions to strengthen their connection with the audience through captivating visuals and compelling storytelling.

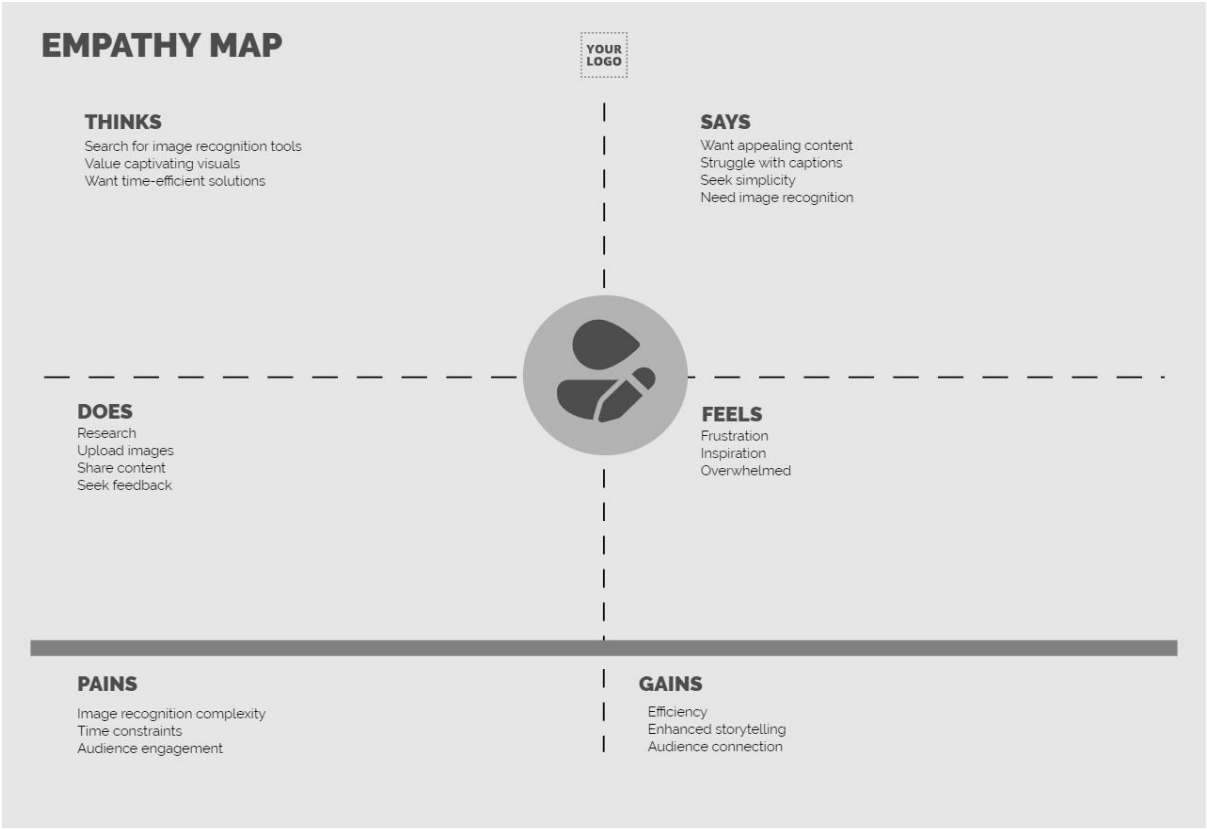
Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

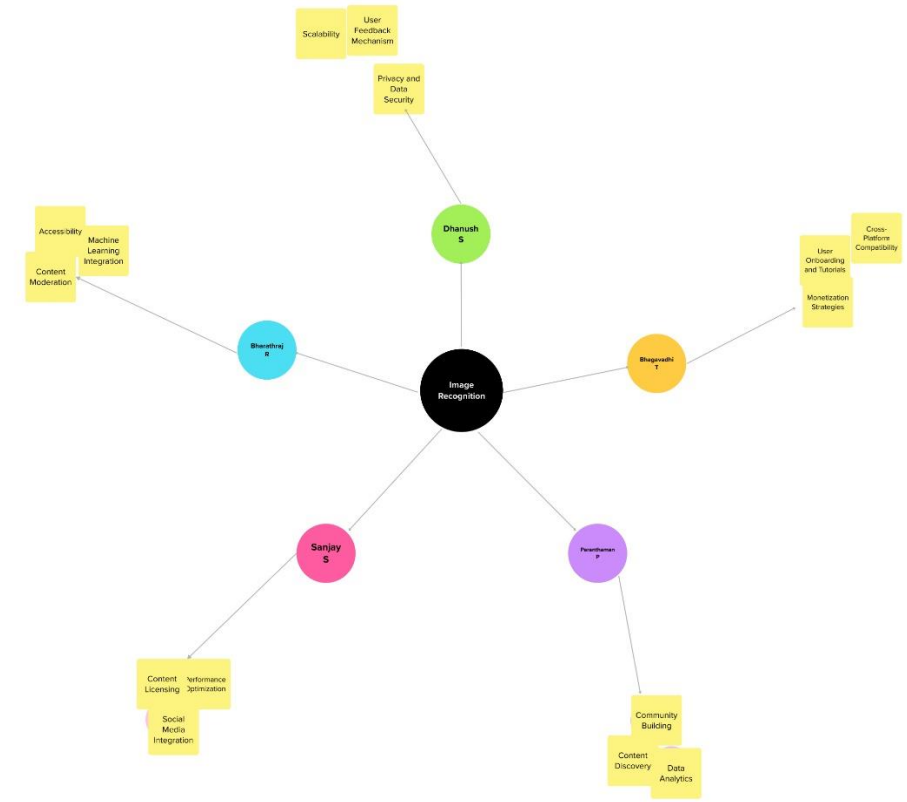
S.NO	Parameter	Description
1.	Problem Statement (Problem to be solved)	The goal is to develop a platform where users can upload images, and the system accurately classifies and describes the image contents.
2.	Idea / Solution description	This will enable users to craft engaging visual stories with the help of AI-generated captions, enhancing their connection with the audience through captivating visuals and compelling narratives.
3.	Novelty / Uniqueness	Value in AI image recognition for content creators and marketers. Mixed revenue model. Key resources: IBM Cloud, web tools, AI algorithms. Activities: Setup, development, improvement. Channels: Web, online marketing. Relationships: Support, improvement. Partnerships: IBM Cloud, influencers. Costs: Development, licensing, marketing, support.

4.	Social Impact / Customer Satisfaction	The social impact of image recognition is significant, and its responsible development and use are crucial to ensure that the technology benefits society while minimizing potential harms. Addressing ethical considerations, biases, and privacy concerns is essential to harness the full potential of image recognition for positive societal outcomes.
5.	Business Model (Revenue Model)	The business model of image recognition encompasses various strategies and revenue streams that organizations can use to generate income from image recognition technology. Here are key components of a typical business model for image recognition:
6.	Scalability of the Solution	As this system is more accurate and faster, the performance and scalability is much high than the customer expects and also it helps to increase responsiveness and reducer wait times.

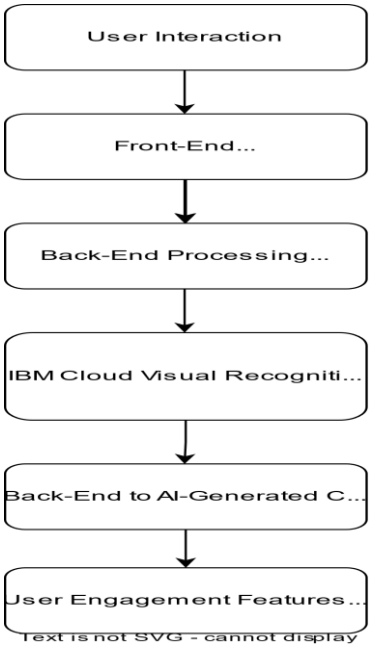
Empathy Map:



Brainstorming:



Flow Diagram:



Literature Survey:

S.NO	YEAR	TOPIC	AUTHOR NAME	PAPER	FINDINGS
1.	2012	Image recognition and processing using artificial neural network.	Md. Iqbal Quraishi, J Pal Choudhury.	IEEE	The value of average error is less than that of test image without application of artificial neural network.The test image is matching and recognized with respect to original image.
2.	2013	Food Image Recognition Using Pervasive Cloud Computing	Pengcheng Duan[1] Wenshan Wang[1] Weishan Zhang[1] Faming Gong[1] Peiying Zhang[1] Yuan Rao[2]	IEEE	The proposed approach can give acceptable recognition rate and Mapreduce programming can provide promising performance advantage compared to traditional client server approach.
3.	2013	Image recognition for visually impaired people by sound.	K.Gopalakrishnan, C.M.Porkodi, and K.Kanimozhi.	IEEE	To convert the image to sound using the methodology of edge detection.
4.	2015	Image recognition based on deep learning.	Meiyin Wu and Li Chen	IEEE	The experiment results show that deep learning does have an excellent feature learning ability. It don't need to extract features manually.
5.	2016	Deep residual learning for image recognition.	Kaiming He Xiangyu Zhang Shaoqing Ren Jian Sun.	IEEE	Analysis on CIFAR-10 with 100 and 1000 layers. The depth of representations is of central importance for many visual recognition tasks.

Design Thinking:

1. Image Recognition Setup: Set up the IBM Cloud Visual Recognition service and obtain the necessary API keys.
2. User Interface: Design a user-friendly interface for users to upload images and view the AI-generated captions.
3. Image Classification: Implement the image classification process using the IBM Cloud Visual Recognition API.
4. AI-Generated Captions: Integrate natural language generation to create captions for the recognized images.
5. User Engagement: Design features to allow users to explore, save, and share their enhanced images.