DEPARTMENT OF APEX INSTITUTE OF TECHNOLOGY

# PROJECTPROPOSAL

## 1. Project Title: - Image captioning app for blind people

## 2. Project Scope: - (Max 500 words)

The scope of our project revolves around creating an Image Captioning App specifically designed to empower visually impaired individuals by providing them with accessible access to visual information. At its core, the project aims to leverage the latest advancements in Natural Language Processing (NLP) and Machine Learning (ML) to develop a robust model capable of accurately generating descriptive captions for a wide range of images. This involves collecting diverse image datasets and corresponding captions, ensuring their relevance to the daily lives of visually impaired users. Preprocessing steps, including image resizing, normalization, and text tokenization, are undertaken to prepare the data for model training. The model development phase focuses on implementing a combination of Convolutional Neural Networks (CNNs) for image feature extraction and Recurrent Neural Networks (RNNs) like Long Short-Term Memory (LSTM) networks for text generation. Once trained, the model is integrated into an Android application, collaborating closely with Android developers to ensure a user-friendly interface and seamless user experience.

Testing plays a crucial role in validating the functionality, accuracy, and accessibility of the app. This includes both functional testing to ensure all features work as intended and accessibility testing to assess usability for visually impaired users. Feedback from testing informs iterative improvements to the app before its deployment. The final phase involves releasing the app for public use, typically through app stores such as the Google Play Store. Continuous updates and improvements are made based on user feedback and emerging technologies to ensure the app remains relevant and impactful. The project's scope also includes collaboration with the visually impaired community, experts in accessibility, and relevant stakeholders to gather insights, validate assumptions, and ensure the app meets the diverse needs of its users effectively. Overall, the scope of our project is to develop a comprehensive solution that enhances accessibility, independence, and quality of life for visually impaired individuals through innovative technology and user-centric design.

## 3. Requirements: -

* Hardware Requirements

1. Smartphone or Tablet
2. Camera
3. Internet Connectivity

* Software Requirements

1. Python

2. Machine Learning Libraries

**STUDENTS DETAILS**

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| --- | --- | --- |
| **Name** | **UID** | **Signature** |
| Anmol Malik | 21BCS53335 |  |
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**APPROVAL AND AUTHORITY TO PROCEED**

We approve the project as described above and authorize the team to proceed.

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| --- | --- | --- |
| **Name** | **Title** | **Signature**  **(With Date)** |
| Shivani | E11286 |  |