Ex. No.: 10   Date: 26/04/2022
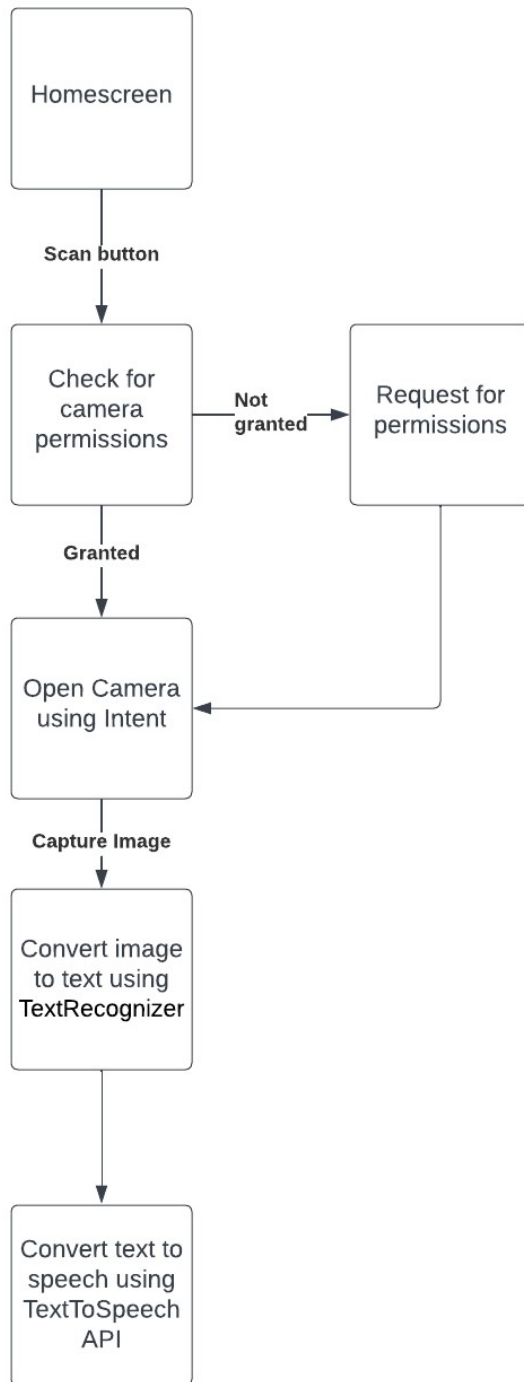
Problem statement:

Create an app for a museum that captures the museum labels using the phone camera and converts the contents into speech.

The label may contain text and longitude and latitude. The app should recognise the text and location details and provide a speech output

Design: (Block diagram)

```
                    ┌──────────────┐
                    │              │
                    │  Homescreen  │
                    │              │
                    └──────┬───────┘
                           │
                      Scan button
                           │
                           ▼
        ┌──────────────┐            ┌──────────────┐
        │   Check for  │    Not     │  Request for │
        │    camera    │──────────▶ │  permissions │
        │  permissions │  granted   │              │
        └──────┬───────┘            └──────┬───────┘
               │                           │
            Granted                        │
               │                           │
               ▼                           │
        ┌──────────────┐                   │
        │  Open Camera │◀──────────────────┘
        │  using Intent│
        └──────┬───────┘
               │
         Capture Image
               │
               ▼
        ┌──────────────┐
        │ Convert image│
        │ to text using│
        │ TextRecognizer│
        └──────┬───────┘
               │
               ▼
        ┌──────────────┐
        │ Convert text │
        │ to speech    │
        │ using        │
        │ TextToSpeech │
        │ API          │
        └──────────────┘
```
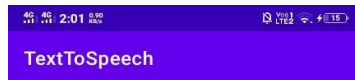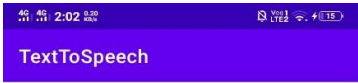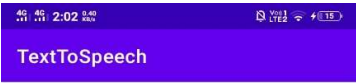
Tool used:

- Android Studio
- Java
- XML
- Camera API
- TextRecognizer API(Google vision)
- TextToSpeech API

Code:

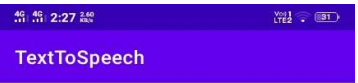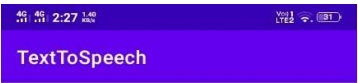https://drive.google.com/drive/folders/1ME77shM_DDcIjw4YwQmUA8fqM3wJIG_d?usp=sharing

Screenshots of application:

The text displayed was also being read out aloud with the help of TextToSpeech API which was shown during the demo