ADS NAVIGATOR

PRESENTED BY:

Roshan Bag(2070/BCT/38)

Sanjay Bista(2070/BCT/45)

Santosh Mahat(2070/BCT/46)

Swikar Bhandari(2070/BCT/59)

PROJECT SUPERVISOR:

Dinesh Dangol

Overview

- Introduction
- Objectives
- Scope and Applications
- Features
- System Flow Diagram
- Process Diagram
- Methodology
- Results & Limitations
- Conclusion & Future Enhancements
- Snapshots

Introduction

What is Ads Navigator?

- Recommendation system for ads/places
- A location based application
- Includes Navigation Support
- Developed for android mobiles

Objectives

- To enable users to view and navigate the advertisements in real-time on a particular area.
- To recommend ads/places to users that are unfamiliar with but are likely to desire.
- To help vendors to advertise & improve their businesses.

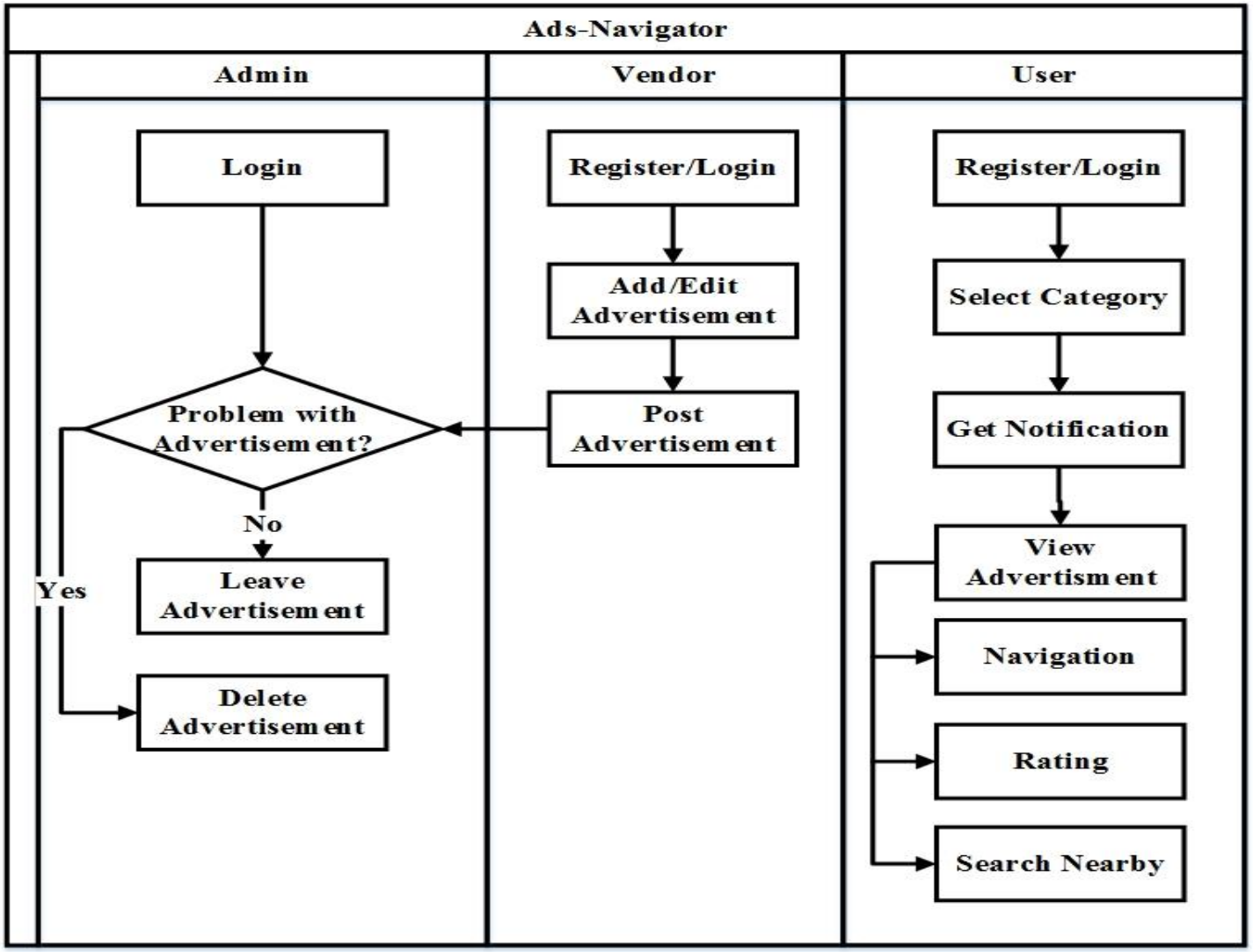
Scope & Applications

- Recently established vendors and businesses.
- People who are new to the locality.
- Targeted Areas: Restaurants, Hotels/Lodge, Stores, etc.

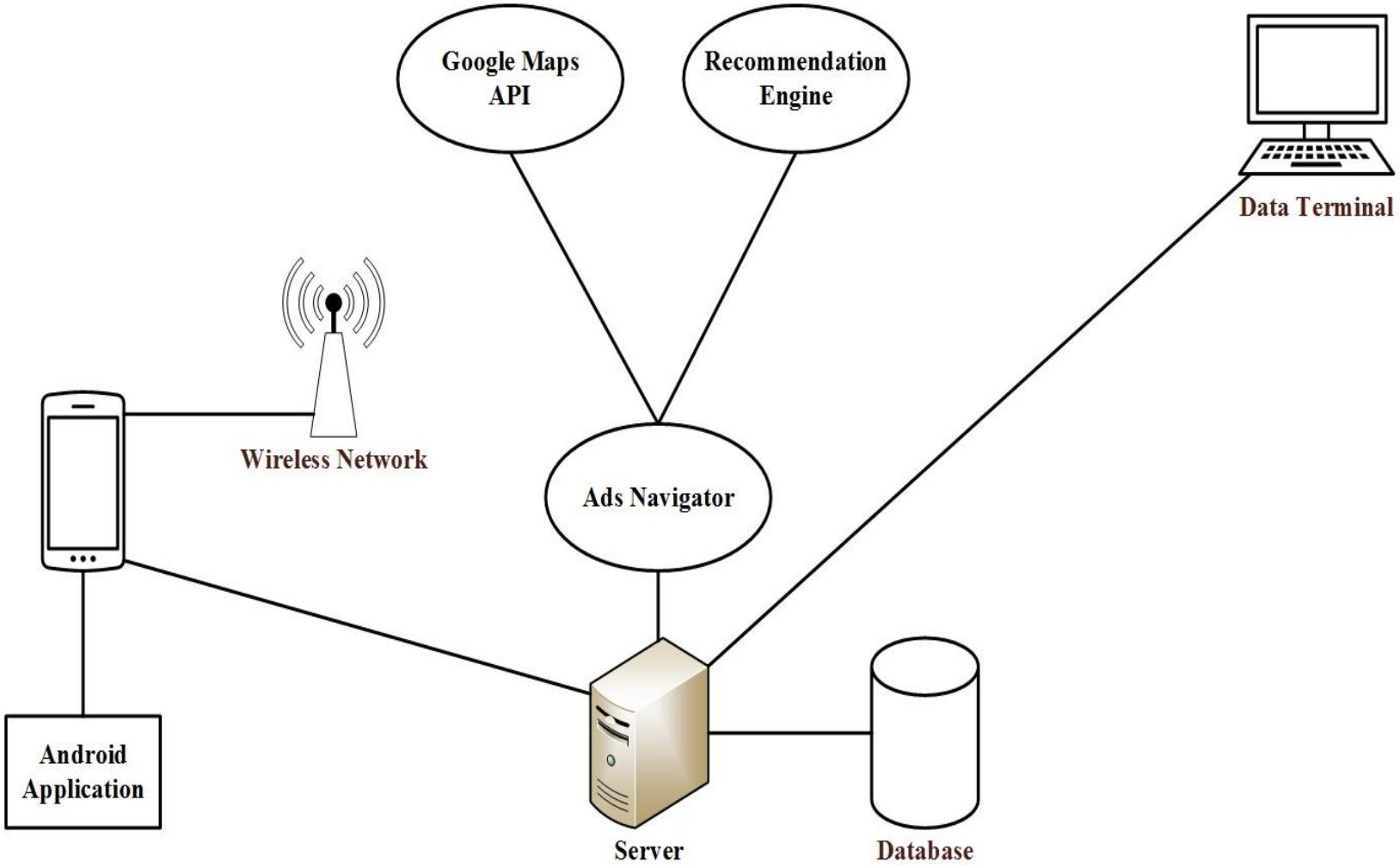
Features

- Location based Advertisements
- Navigation
- Notification
- Search Nearby
- Rate Advertisements
- Recommendations

System Flow Diagram



Process Diagram



Methodology

- Development Platform - Android
- User Interface – XML, Android Material Design Library
- Server, Database & Authentication- Firebase
- Maps and Navigation – Google API
- Recommendation – Apache Mahout Library
- Algorithms – Collaborative Filtering & Pearson Correlation Coefficient Algorithm

Methodology

Collaborative Filtering Algorithm

- Predict the ratings of unrated items by a given user and recommend the Top-N items.
- Assumes a list of m users $U = \{u1, u2, \ldots, u_m\}$ and a list of n items $I = \{i1, i2, \ldots, i_n\}$. Each user u_i has rated a list of items noted by I_{ui}.
- Two approaches:
  1. Item Based Nearest Neighbor
  2. User-Based Nearest Neighbor

Methodology

Collaborative Filtering Algorithm

Item Based Nearest Neighbor

- Utilizes the similarity computed between two items.
- Generates prediction for a user u and item i is composed of a weighted sum of the user u's ratings for items most similar to i

$$pred(u,i) = \frac{\Sigma_{j \in ratedItems(u)} sim(i,j).r_{ui}}{\Sigma_{j \in ratedItems(u)} sim(i,j)}$$

Methodology

Collaborative Filtering Algorithm

User Based Nearest Neighbor

- Utilizes the similarity computed between the active user and all other users.
- Generate a prediction for an item i by analyzing ratings for i from users in u's neighborhood.

$$pred(u,i) = \bar{r}_u + \frac{\Sigma_{n \subset neighbor(u)} sim(u,n).(r_{ni} - \bar{r}_n)}{\Sigma_{n \subset neighbor(u)} sim(u,n)}$$

Methodology

Pearson Correlation Coefficient Algorithm

- Utilizes similarity on how much the rating given by the common users for a pair of items deviate from average ratings for those items.

$$\mathrm{sim}(i,j) = \frac{\Sigma_{u \in U}\left(R_{u,i} - \overline{R}_i\right)\left(R_{u,j} - \overline{R}_j\right)}{\sqrt{\Sigma_{u \in U}\left(R_{u,i} - \overline{R}_i\right)^2}\sqrt{\Sigma_{u \in U}\left(R_{u,j} - \overline{R}_j\right)^2}}$$

Results & Limitations

Results

- System Analysis & Design
- User Interface
- Authentication
- Post, View & Rate ads
- Recommender System

Limitations

- Less accurate recommender
- Manual detection of Inappropriate content
- Limited to android platform

Conclusion & Future Enhancements

Conclusion

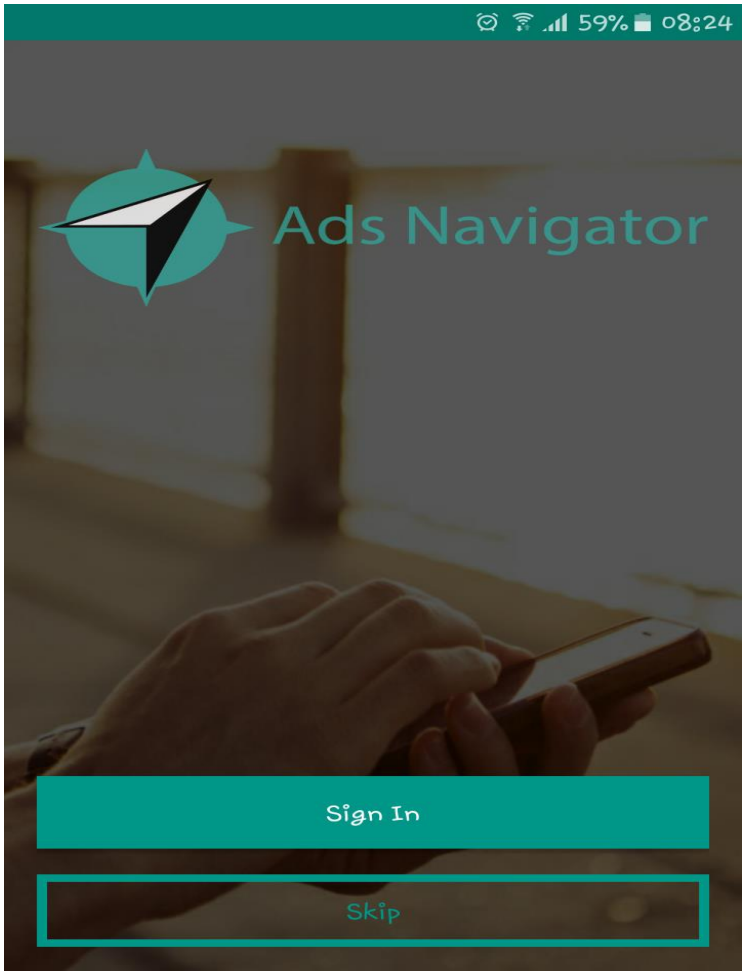
- Fulfillment of pre defined objectives
- Familiarization with emerging needs in this field
- Knowledge of tools, techniques and teamwork

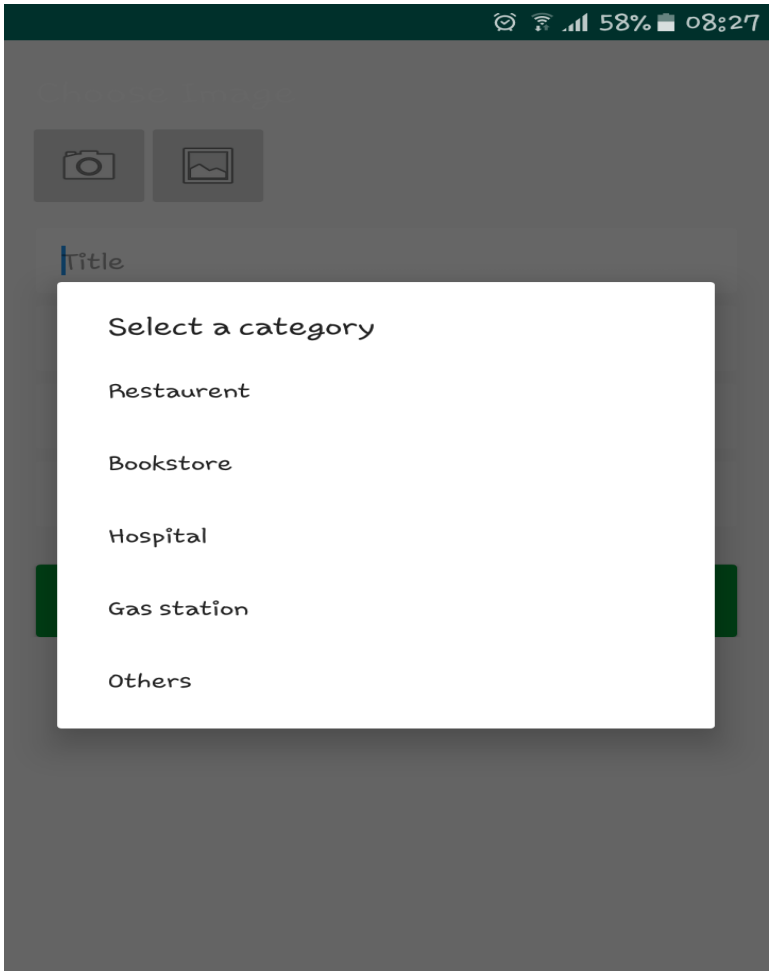
Conclusion & Future Enhancements

Future Enhancements

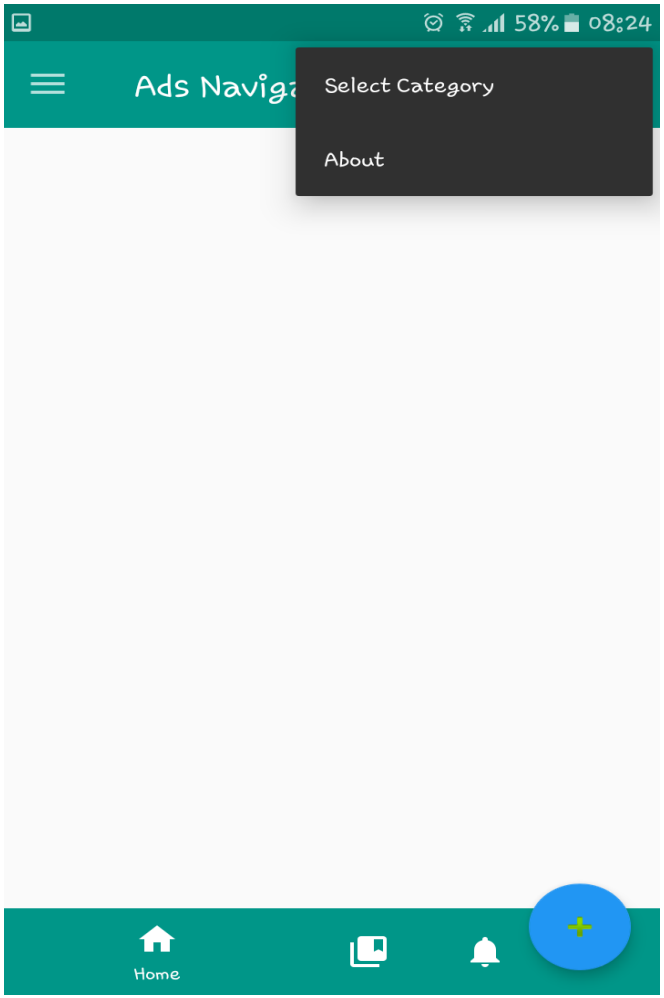
- Published in other platforms
- Upgraded to an Enterprise standard
- Make Recommendations more accurate
- Integrate app with payment module

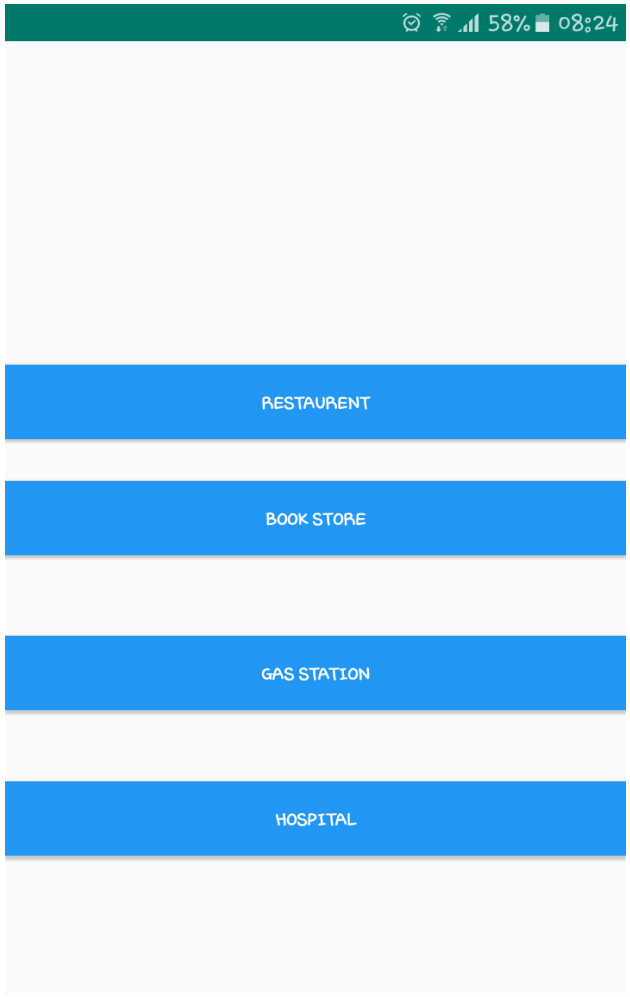
Snapshots


59% 08:24
Ads Navigator
Sign In
Skip

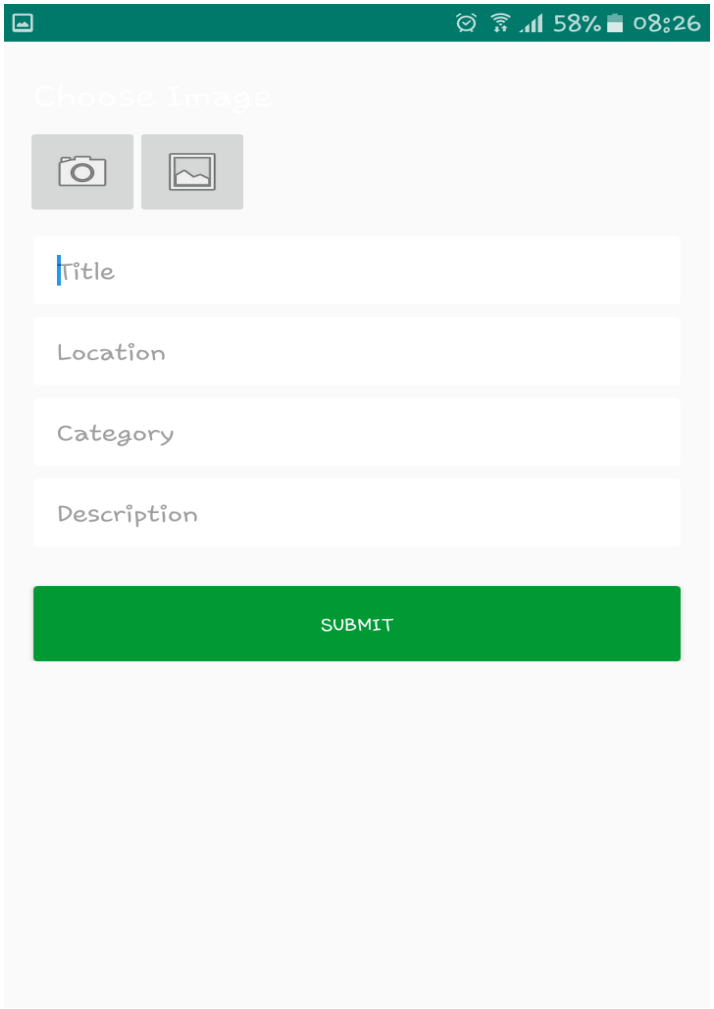

58% 08:27
Title
Select a category
Restaurent
Bookstore
Hospital
Gas station
Others

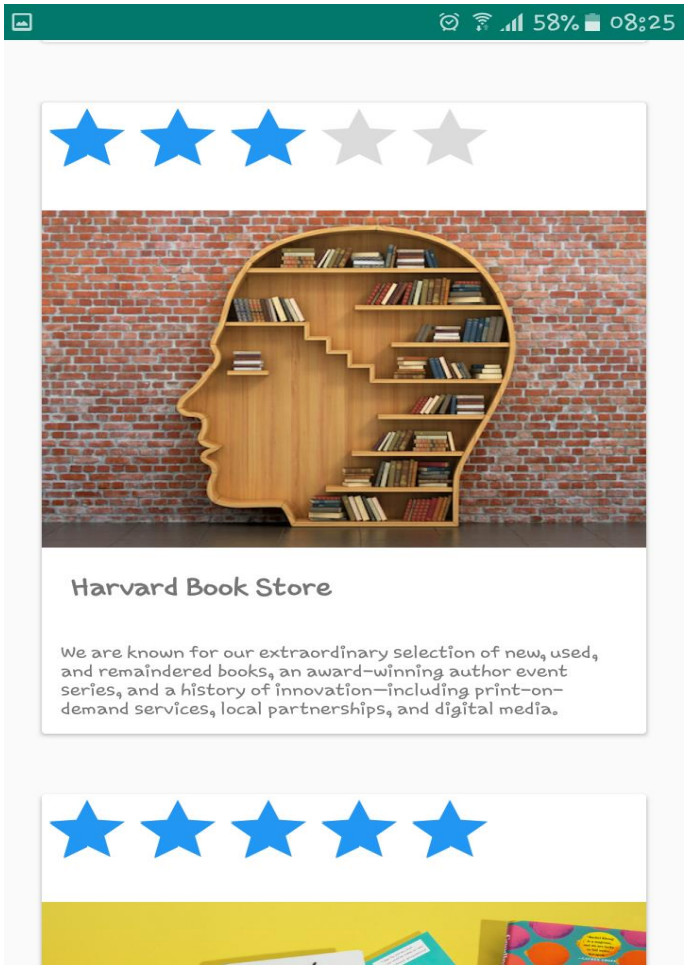
Snapshots


58% 08:24
Ads Naviga
Select Category
About
Home


58% 08:24
RESTAURENT
BOOK STORE
GAS STATION
HOSPITAL

Snapshots


58% 08:26
Choose Image
Title
Location
Category
Description
SUBMIT


58% 08:25
Harvard Book Store
We are known for our extraordinary selection of new, used, and remaindered books, an award-winning author event series, and a history of innovation—including print-on-demand services, local partnerships, and digital media.

THANK YOU