

Augmented Reality

SAFRAAN

Heritage in your hands



PROJECT BY

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AUGMENTED REALITY



Definition

- Virtual elements **enhance** the physical environment.
- The real world is **enriched** with further information.
- **Digital information** can be text, images, video, sound or GPS data

Future

- Develop new features to **overcome** latest effective challenges.
- Open doors for business opportunities.

APPLICATIONS OF AR



MARKETING



AUTOMOTIVE



BUSSINESS



REAL ESTATE



MANUFACTURING



RETAIL



TOURISM



EDUCATION

VISION AND MISSION

- The vision is to enable the customers to discover more than possible and experience new locations while gaining knowledge and having fun.
- The mission is to enable the customer to discover more in one visit in a convenient and fun way.

INTRODUCTION



People want to **visit** and **move** in the city or countryside.

If only a few people can be **provided** with a service **at once** (to experience a complex and interactive room scale scenario), the tourist needs to book an **appointment**. This is an annoyance since the whole day or trip must be **scheduled** around this appointment.

For tourism an important aspect must be taken into account:

How many users can be served at once?

IF SAFRAAN IS NOT THERE...!!



HOW SAFRAAN WORKS?



To overcome above aspect *SAFRAAN* provides a *virtual guide* which serve many people at the same time.

The tourist can see a particular cultural heritage with all labels, for example: the history, architecture and art or for a city its food, fauna/flora and top 10 things to see.

SOFTWARE REQUIREMENT SPECIFICATION



Provide detailed information

Camera is used to identify markers

The information about spot is displayed in the camera screen.

A database is used to match the marker detected against the defined markers. Match found, fetch the relevant data. Else, the marker is ignored.

Magnetometer used to enable location based AR.

Accelerometer and gyroscope used for motion tracking.

HARDWARE REQUIREMENTS

- A computer with at least
RAM:4GB
Memory:20MB
- An Android device having
Android version: 5.1.1 or above
Magnetometer
Accelerometer
Gyroscope
For Better features of AR , a phone with higher level API(>28) is required.

SOFTWARE REQUIREMENTS



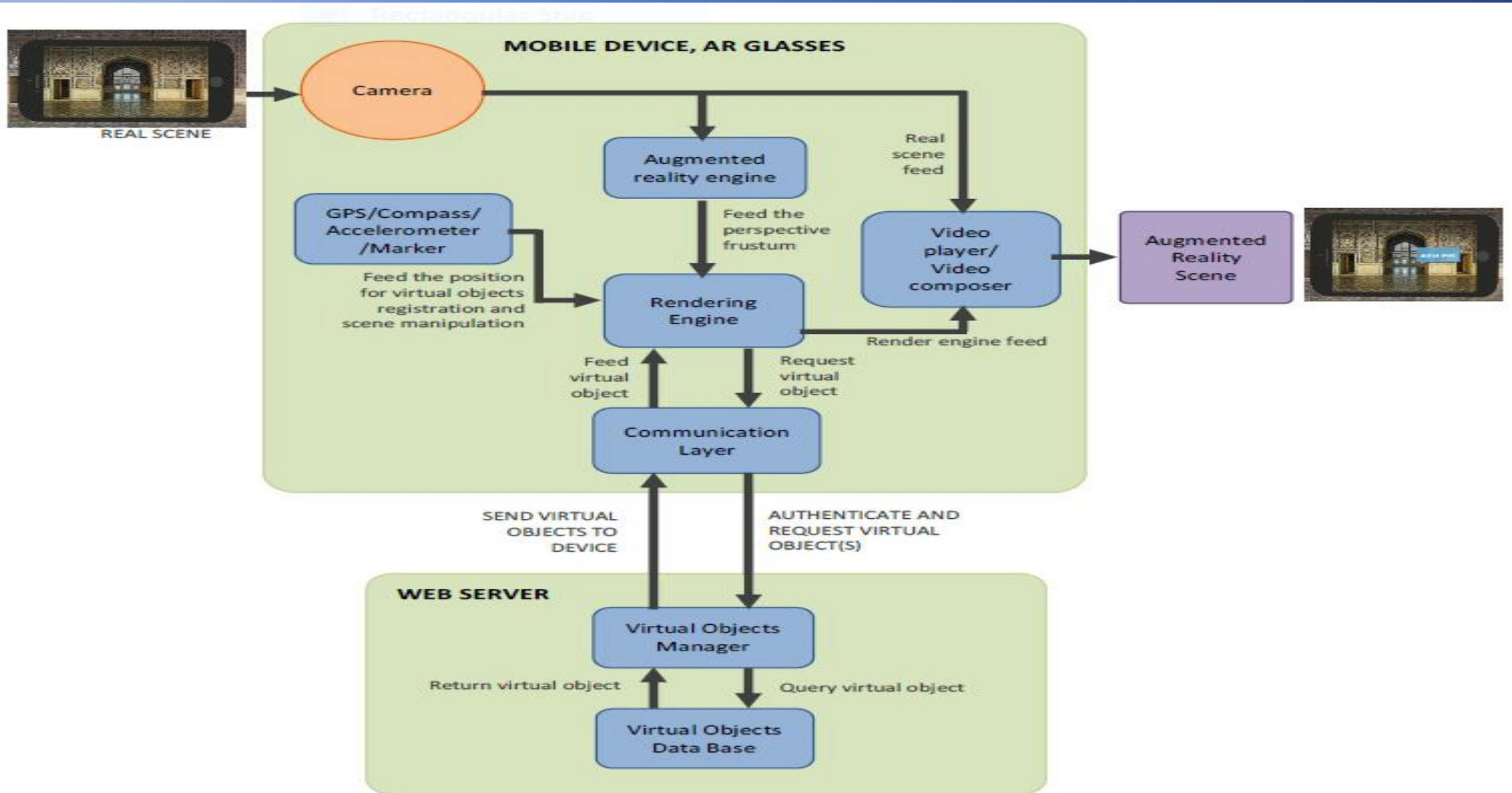
Customer/Client

- Internet connectivity
- Access to camera.
- Access to storage.
- Access to location

Database Management System

- Internet connection
- OpenGL ES
- AR Core
- Wikitude Studio
- MapBox
- Google Maps API

WORKING OF AR



FUNCTIONAL REQUIREMENTS



- Creating, Moving and Placing Objects
- Un-Interrupted Work
- Privacy
- Changing Properties
- Searching
- User Interface
- Grouping Virtual Components
- Relocating Objects

NON FUNCTIONAL REQUIREMENTS



- User-friendly
- Correctness
- Response Time
- Correct in Place Alignment of Virtual Objects
- Real-time Augmentation
- Informative data

IMPLEMENTATION



Software

- Scan for Marker.
- Retrieve the content linked with the matched marker.
- Display the retrieved content.

Hardware

- Device camera scans the Marker.
- The associated content is displayed on the screen of the above device.

SYSTEM TESTING



The more sophisticated and futuristic the software, the more extensive the testing needs to be.

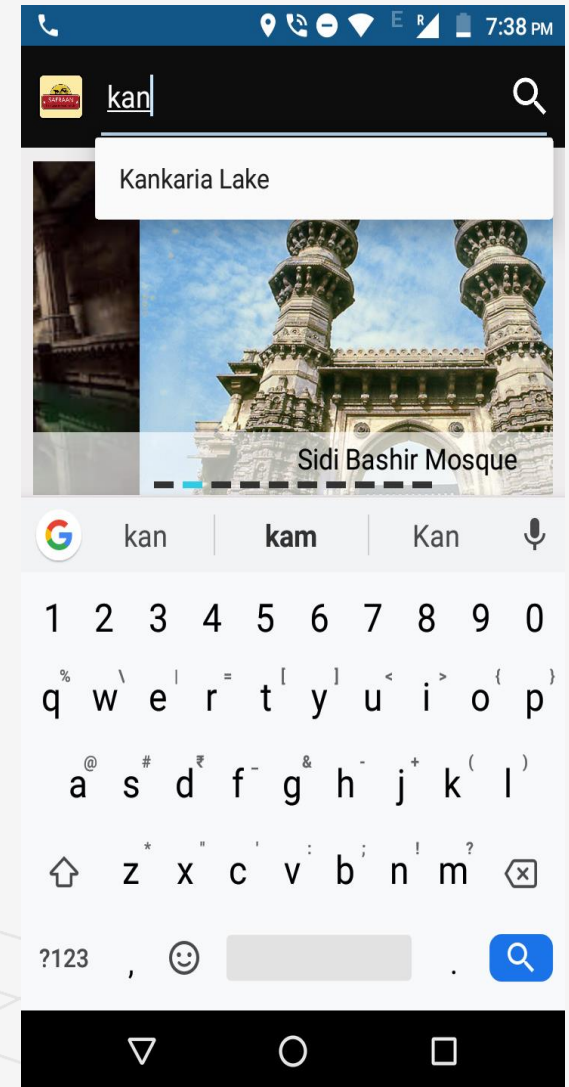
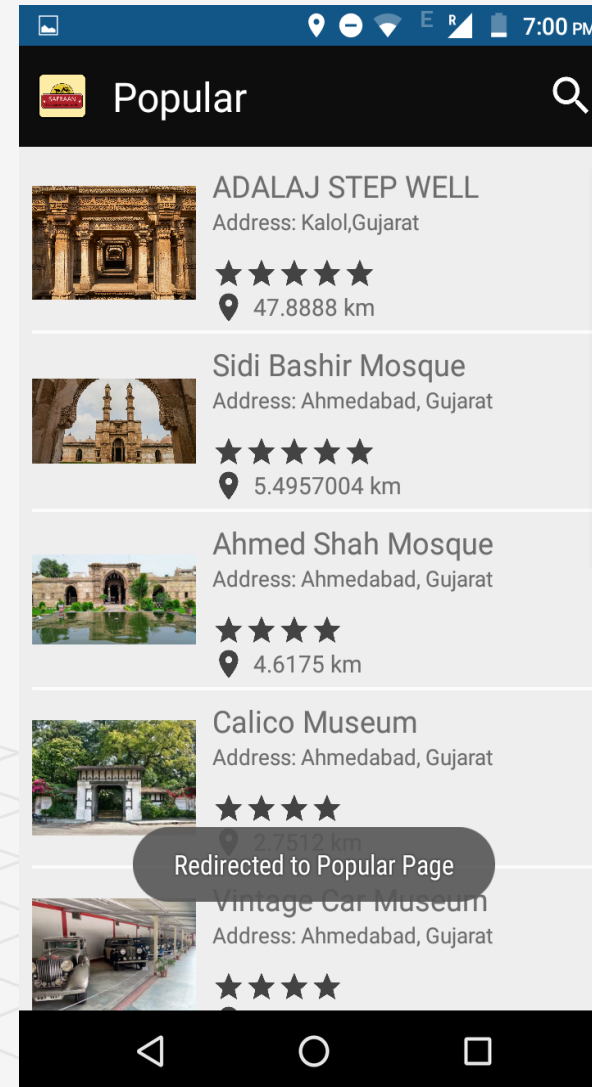
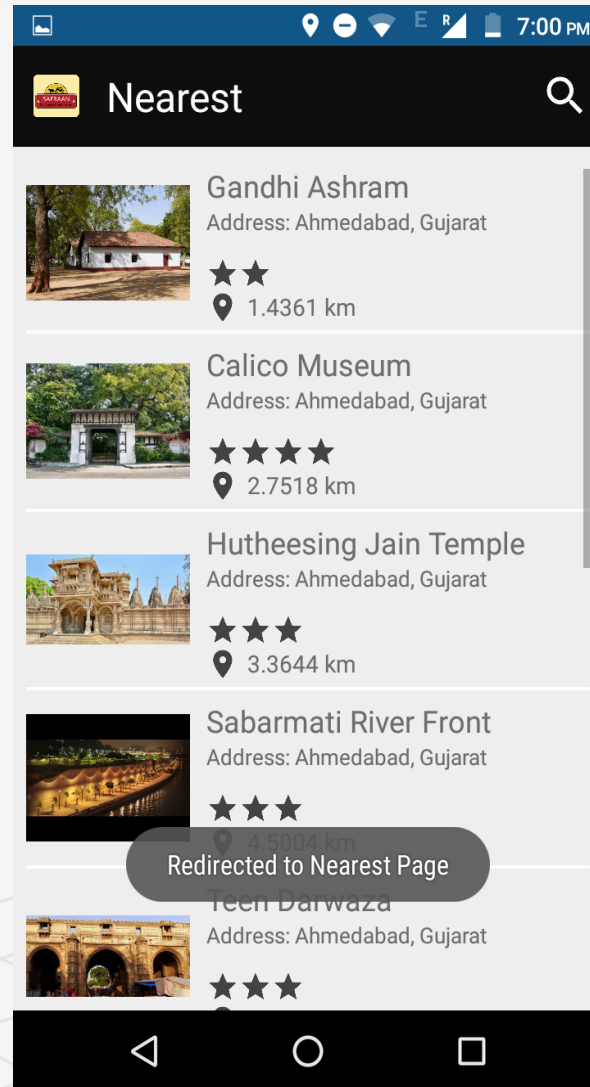
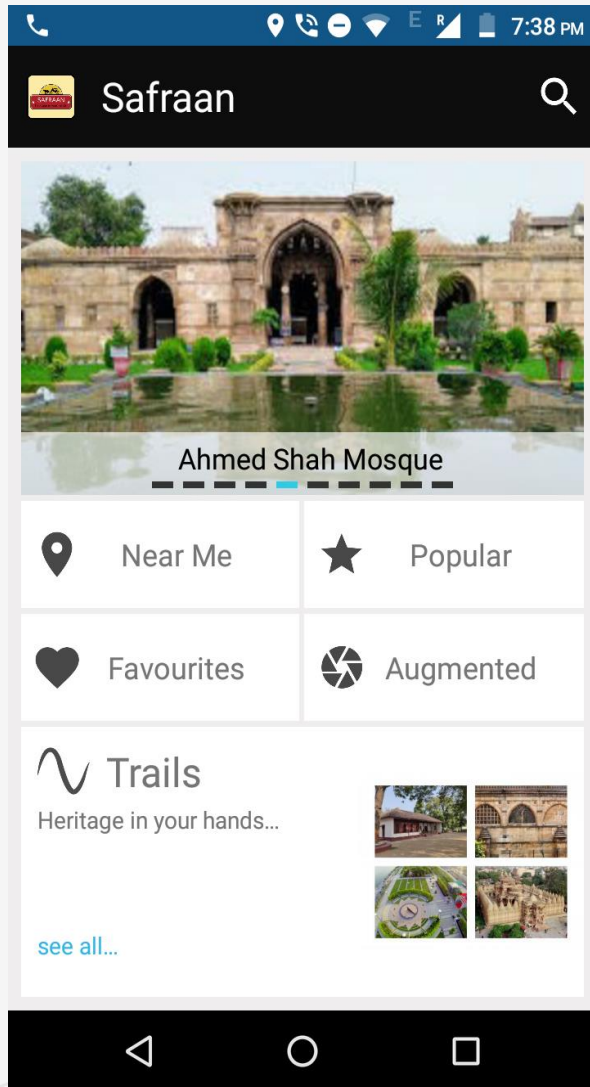
Deals with reality so closely that many real-world issues and complicate testing.

Paying attention to the weakest points of AR apps and ensuring wide-scale device coverage is a good start for testers to assure the impeccable quality of an AR app.

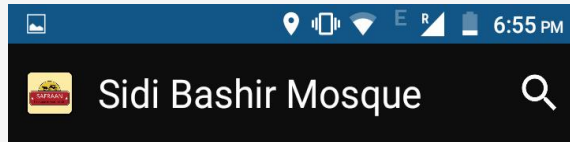


SCREENSHOTS OF APPLICATION

SCREENSHOTS OF APPLICATION



SCREENSHOTS OF APPLICATION



Sidi Bashir Mosque



5.5 km

Tomb

Sidi Bashir Mosque is a former mosque in the city of Ahmedabad, Gujarat, India. Only the central gateway and two minarets survive; they are known as the Jhulta Minar or Shaking Minarets.

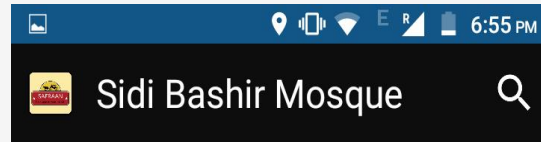
[see more...](#)

Nearby



Directions

Tour



Sidi Bashir Mosque



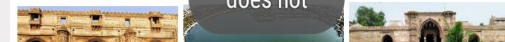
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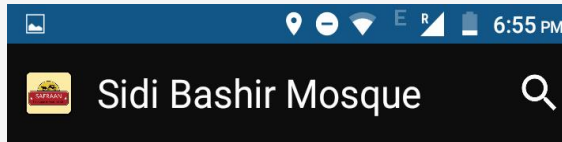
[see more...](#)

Nearby



Directions

Tour



Sidi Bashir Mosque



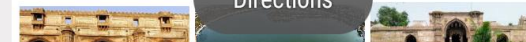
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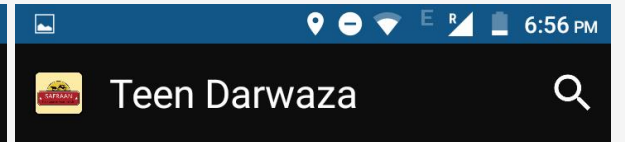
[see more...](#)

Nearby



Directions

Tour



Teen Darwaza

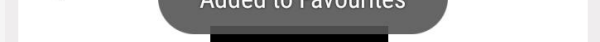


4.6 km

Teen Darwaza is a historical gateway on the east of Bhadra Fort, Ahmedabad, India. Completed in 1415, it is associated with historical as well as legendary events. The gates are featured in the logo of Ahmedabad Municipal Corporation.

[see more...](#)

Nearby

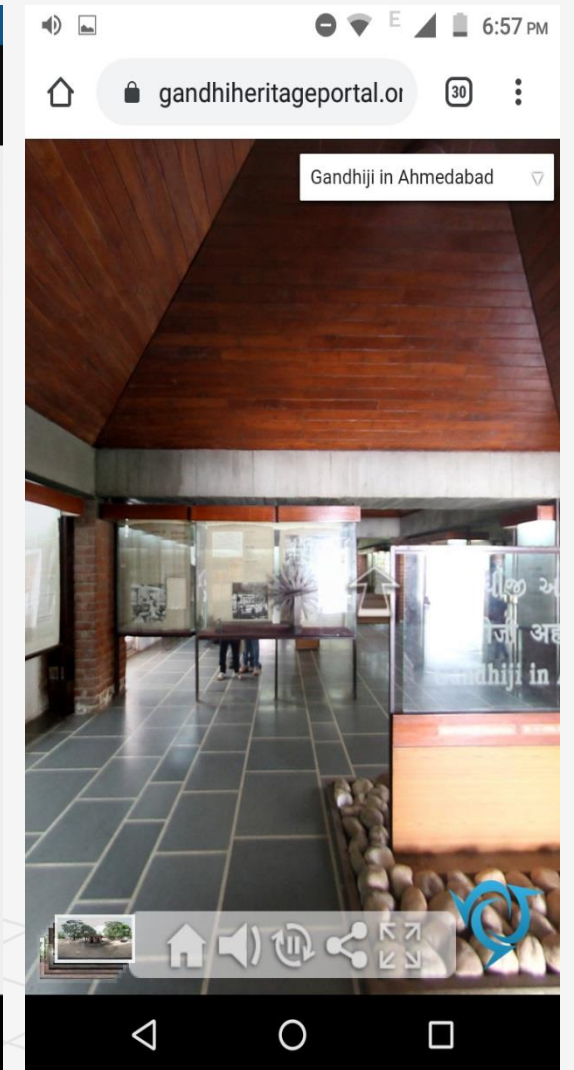
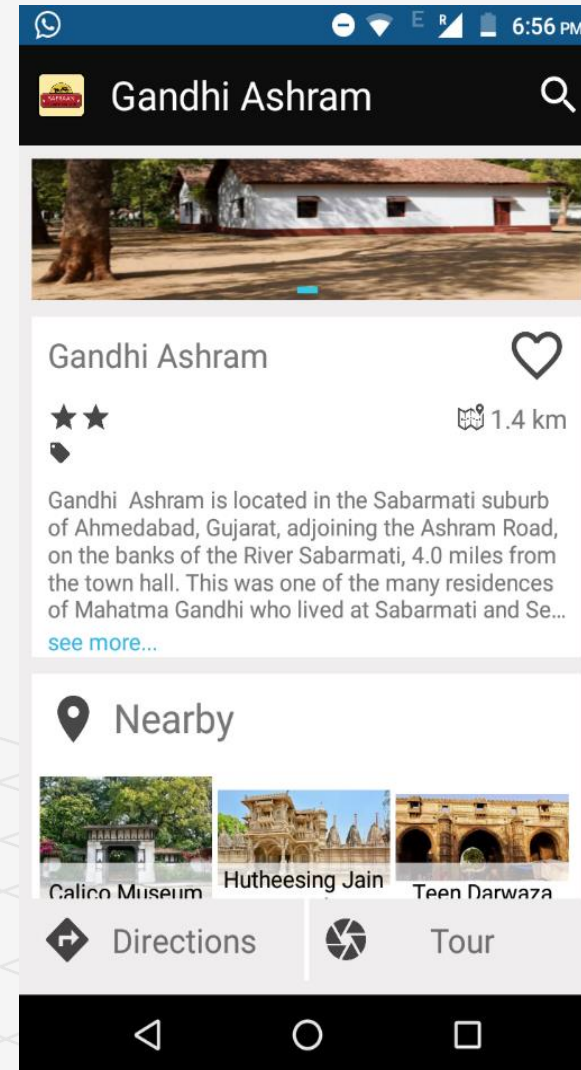
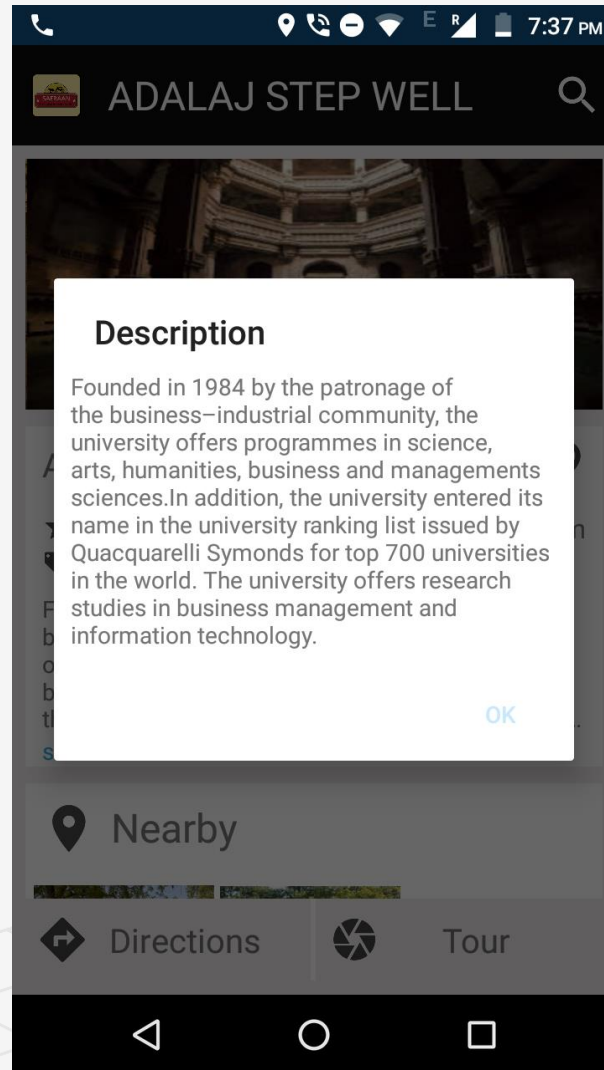
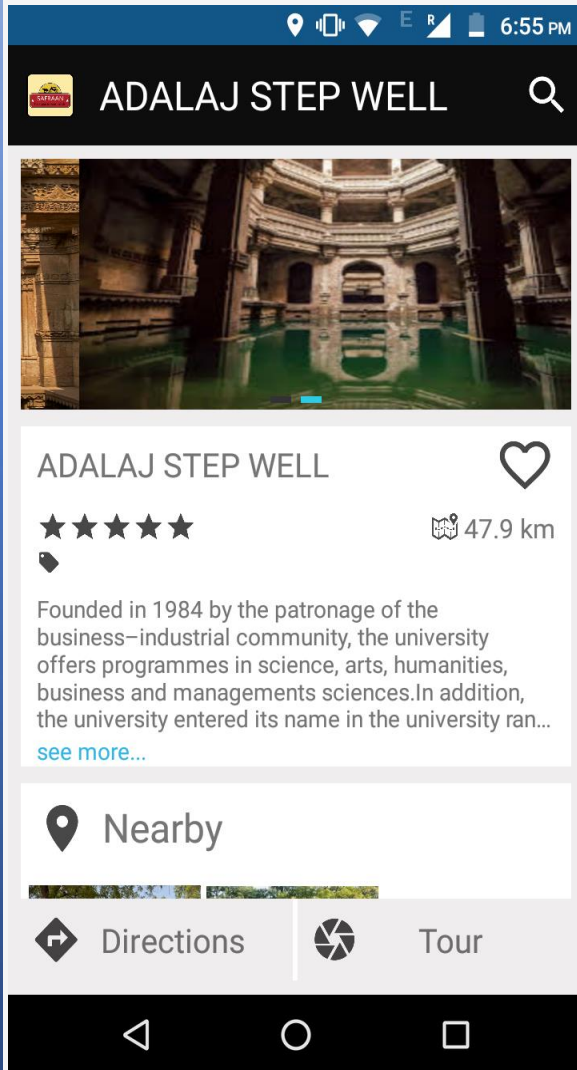


Directions

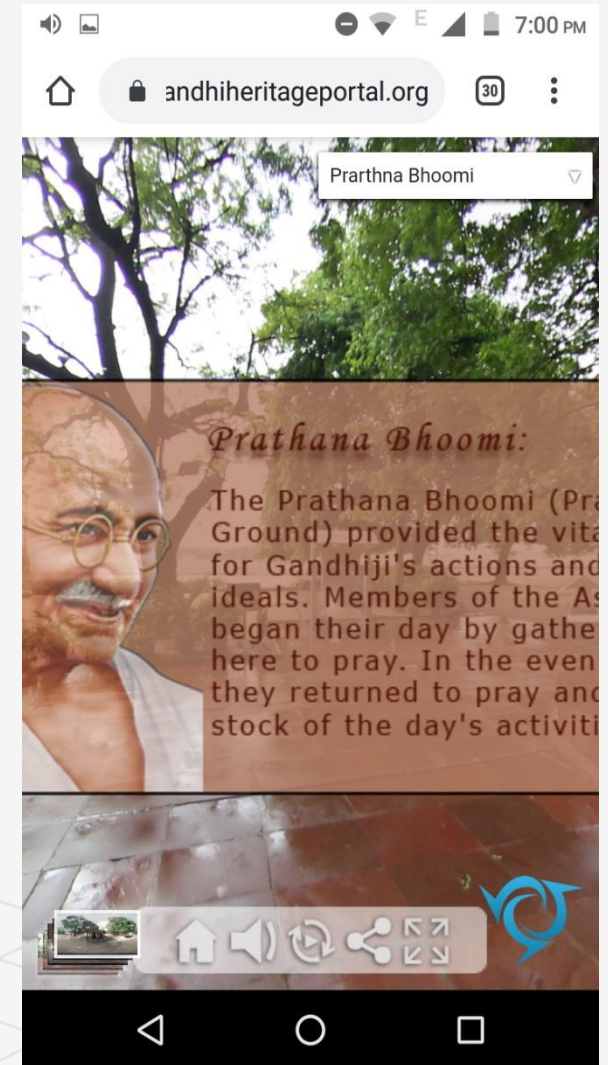
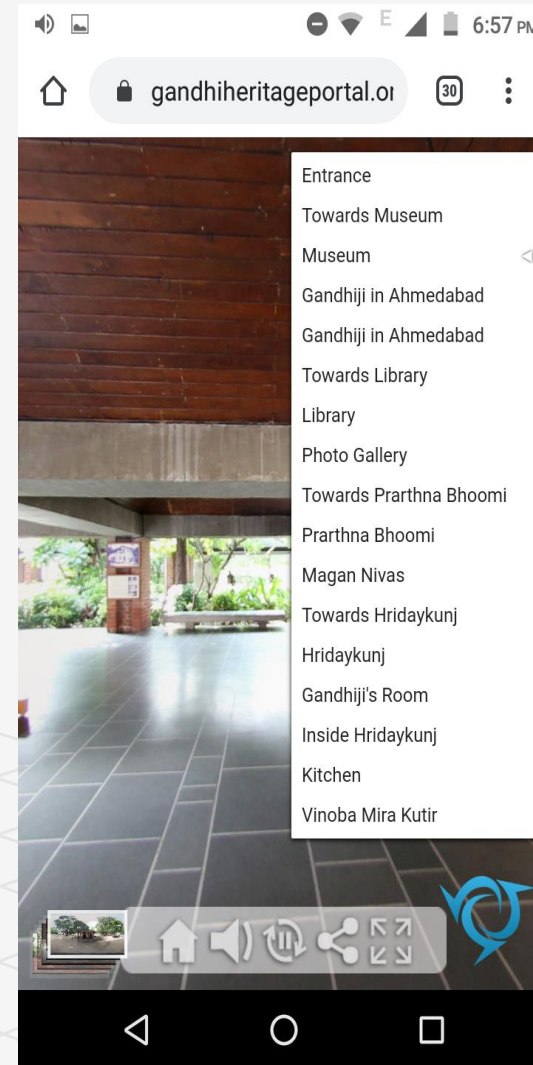
Tour

Added to Favourites

SCREENSHOTS OF APPLICATION



SCREENSHOTS OF APPLICATION

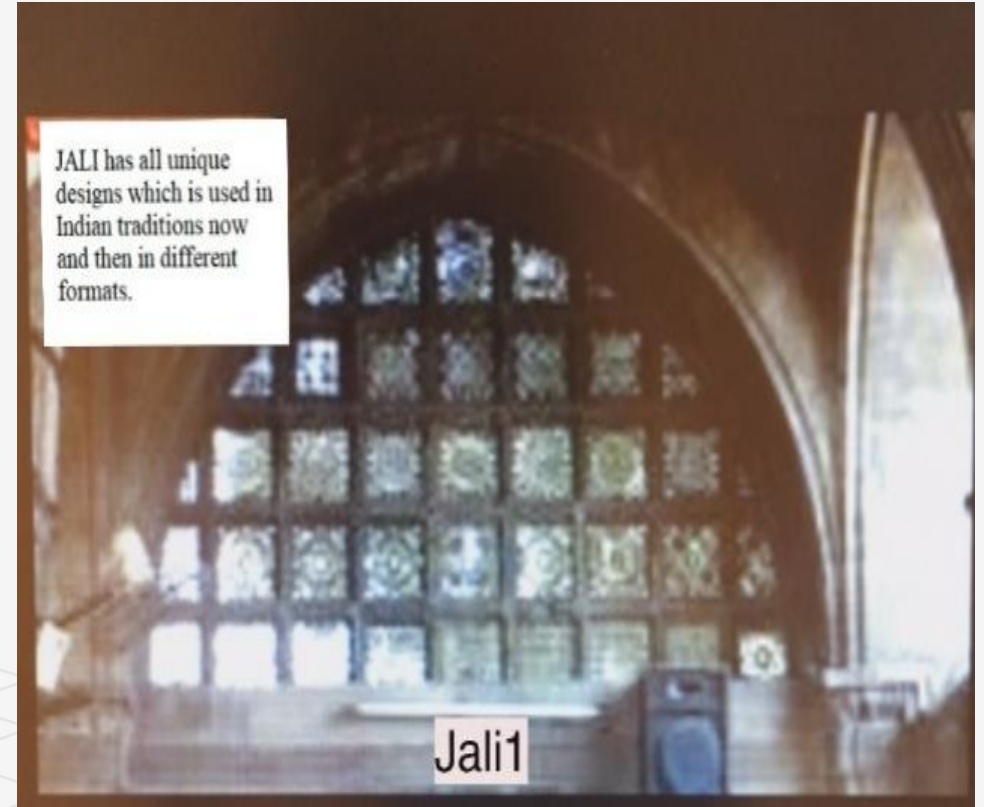


SCREENSHOTS OF AUGMENTED OBJECTS

Augmentation in Safraan



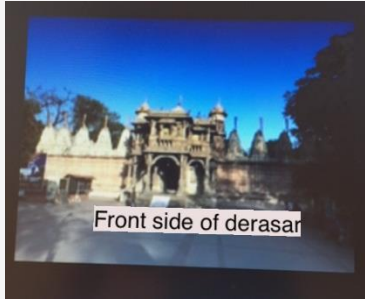
Before Trained image in Wikitude Studio



Trained image in Wikitude Studio for augmentation

Jain Temple

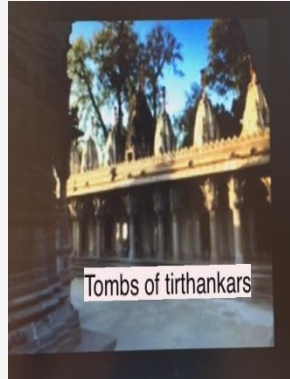
Sidi Sayeed Mosque



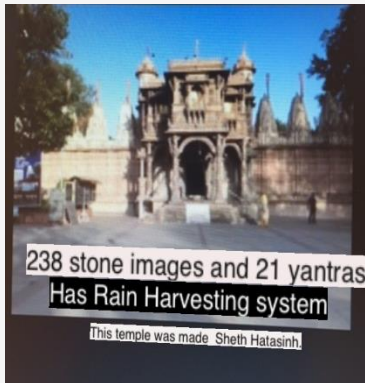
Front side of derasar



Sculpture of inside entrance gate

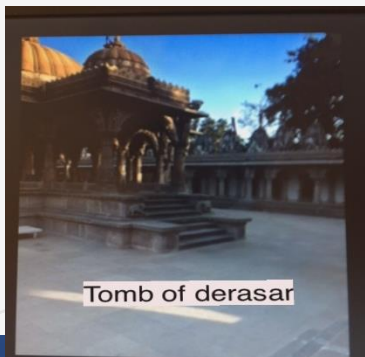


Tombs of tirthankars

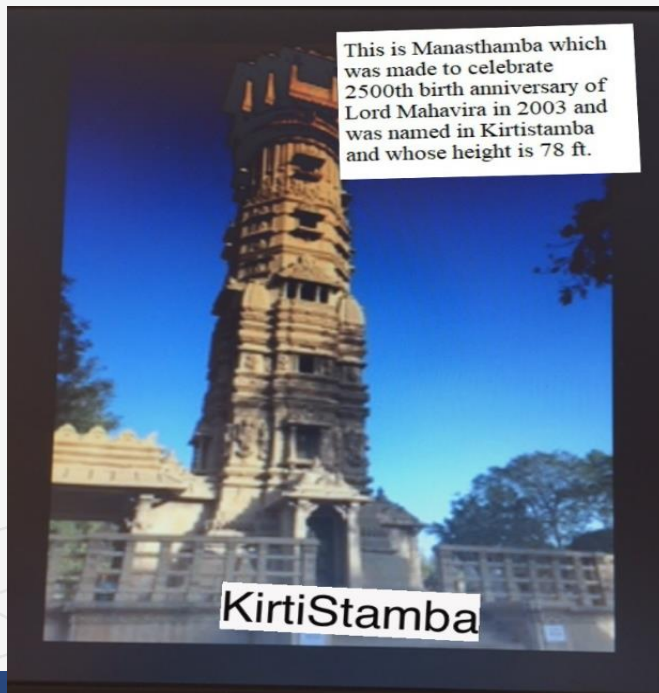


238 stone images and 21 yantras
Has Rain Harvesting system

This temple was made Sheth Hatasinh.



Tomb of derasar



This is Manasthamba which was made to celebrate 2500th birth anniversary of Lord Mahavira in 2003 and was named in Kirtistamba and whose height is 78 ft.

KirtiStamba

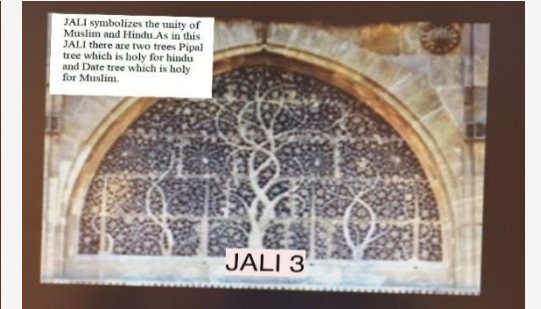


Sidi Sayeed's kabar



JALI has all unique designs which is used in Indian traditions now and then in different formats.

Jali1



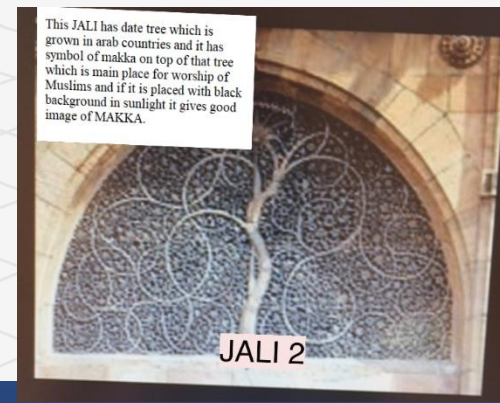
JALI symbolizes the unity of Muslim and Hindu.As in this JALI there are two trees Pipal tree which is holy for hindu and Date tree which is holy for Muslim.

JALI 3



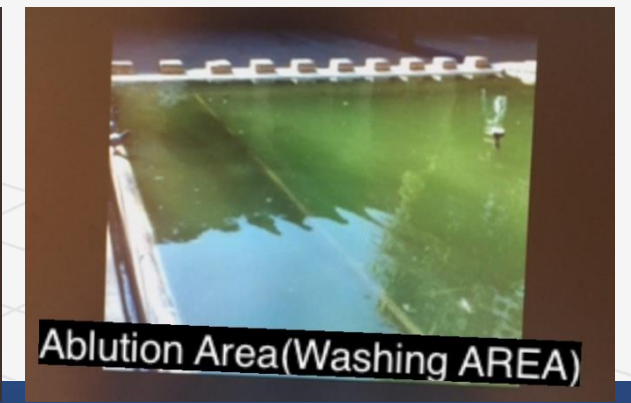
Jali 1

Jali 2-Tree of Life



This JALI has date tree which is grown in arab countries and it has symbol of makka on top of that tree which is main place for worship of Muslims and if it is placed with black background in sunlight it gives good image of MAKKA.

JALI 2



Ablution Area(Washing AREA)

Jama Masjid

Teen Darwaza



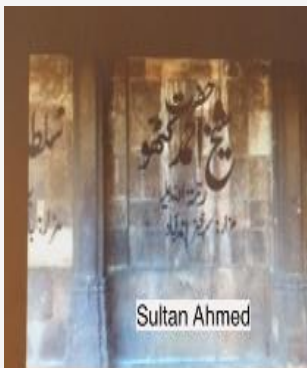
water fountain



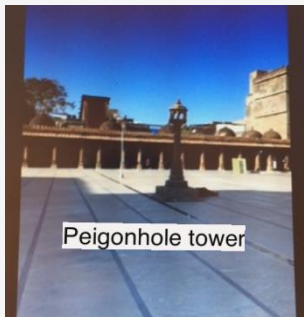
Ablution centre



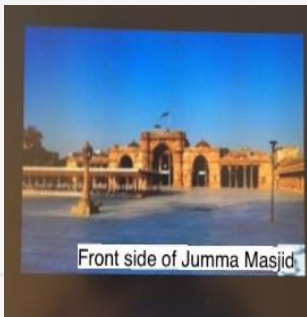
Lotus style carving



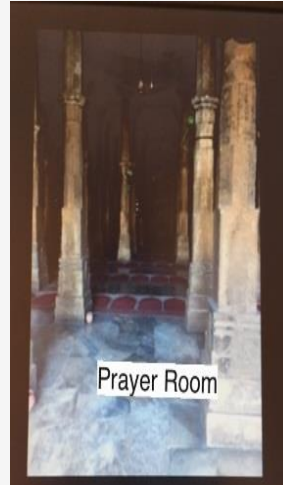
Sultan Ahmed



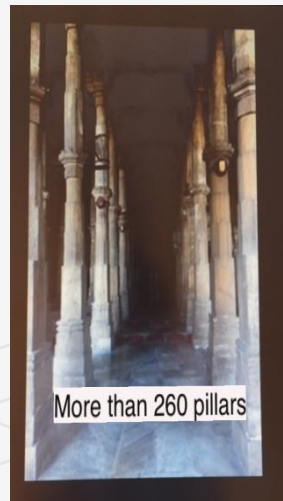
Peignonhole tower



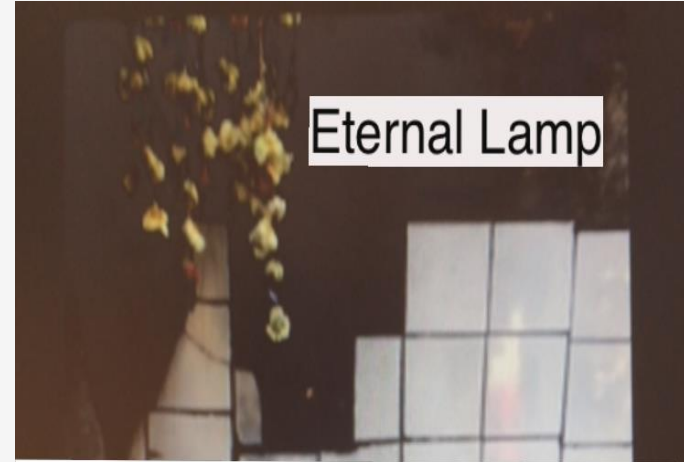
Front side of Jumma Masjid



Prayer Room



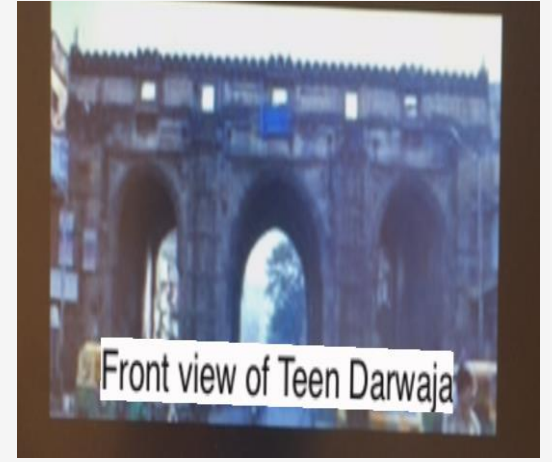
More than 260 pillars



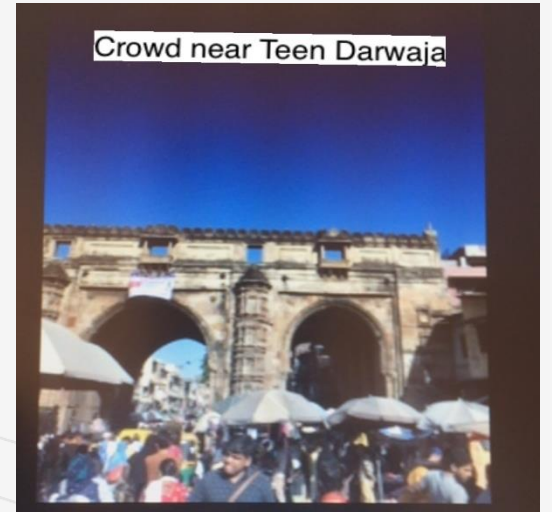
Eternal Lamp

Years ago, Laxmi, the Goddess of Wealth, came to the gate of the Bhadra Fort to leave the city in the night. Watchman Khwaja Siddique Kotwal stopped her and identified her. He asked her not to leave the fort until he obtained a permission from the king, Ahmad Shah. He went to the king and beheaded himself in order to keep Laxmi in the city. It resulted in the prosperity of the city.

A lamp in one of the niche of Teen Darwaza is burning there for more than six hundred years by a Muslim family in a dedication to the legend.



Front view of Teen Darwaza

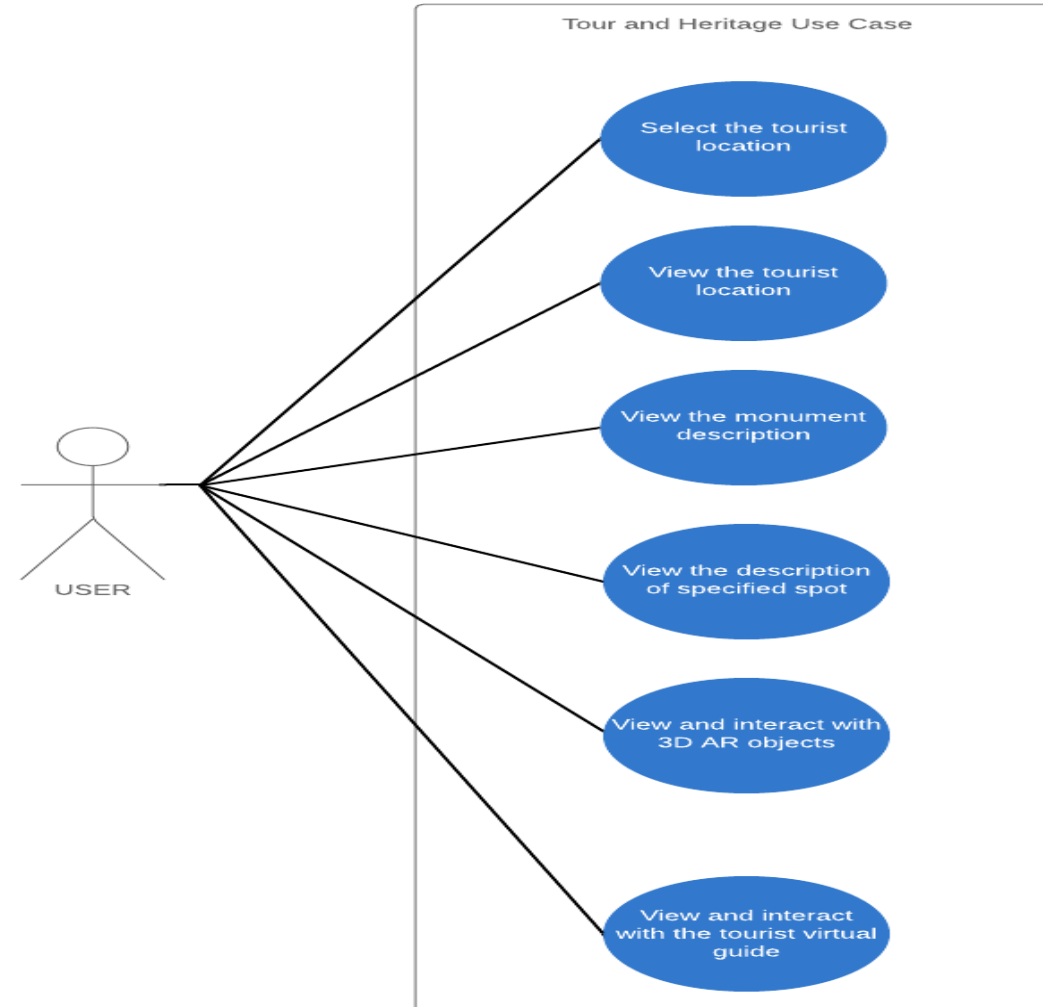


Crowd near Teen Darwaza

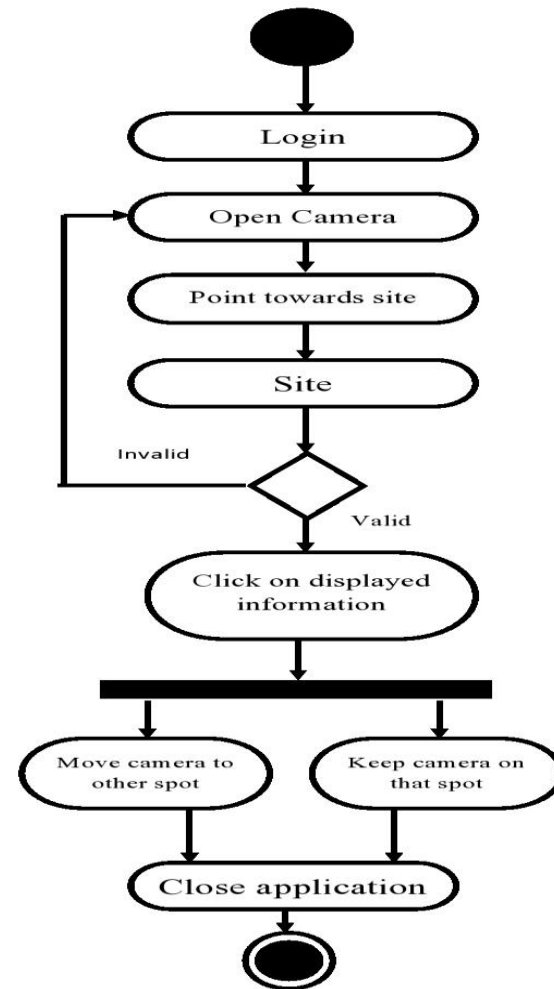
DIAGRAMS

USECASE DIAGRAM

Tour and Heritage in AR



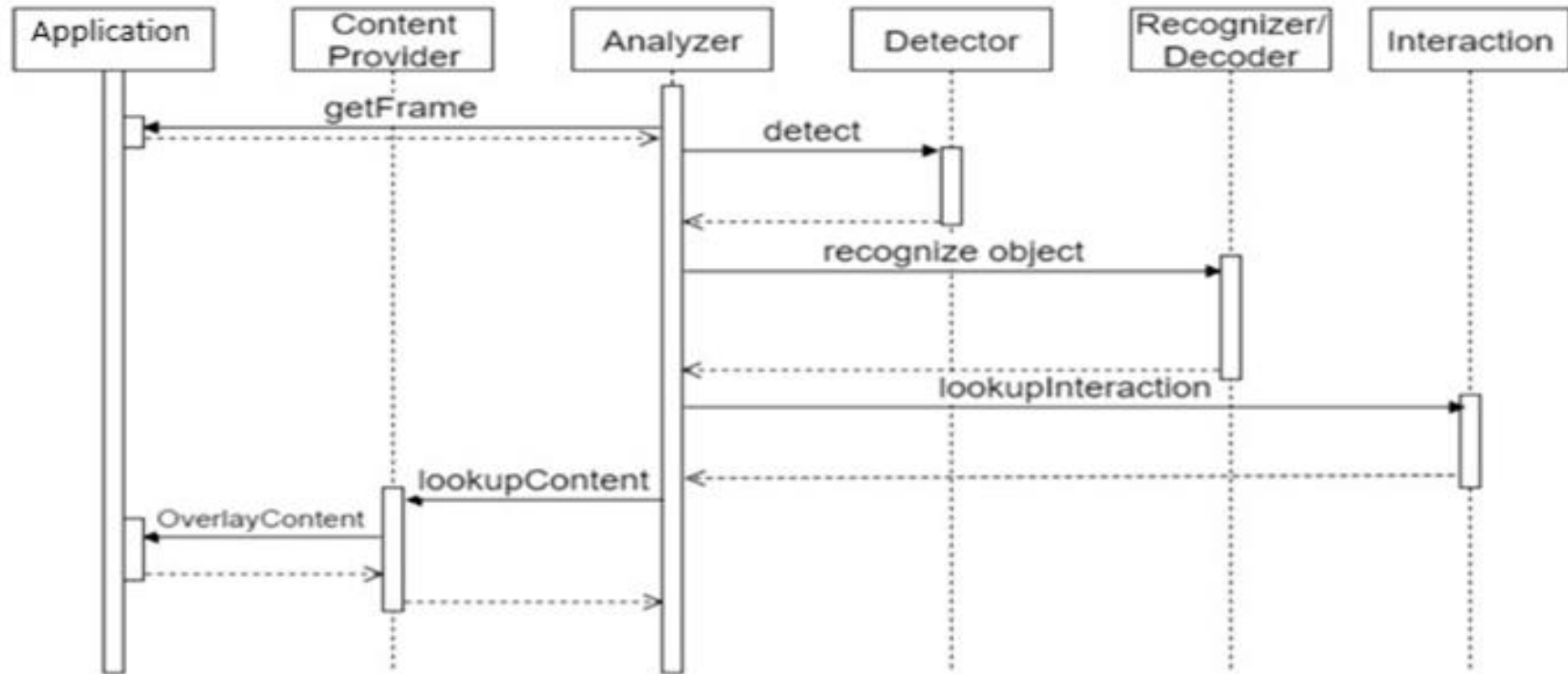
ACTIVITY DIAGRAM



**Activity
Diagram of
user**

SEQUENCE DIAGRAM

Tour and Heritage Sequence Diagram



LIMITATIONS OF AR

- . It occupies large size.
- . Drains power battery rapidly.
- . Lot of heat is generated.
- . If there is low light environment it does not works properly.
- . Need powerful version of processors in mobile phones .

CONCLUSION



- . Augmented reality in tourism and travel is still new and unsettled.
- . It provides new ways of exploring places.
- . Tourists get to relive the era of monuments and understand them better.
- . A country can benefit – by boosting the economic growth and preserving its centuries old culture.

SAFRAAN 2.0



The route will be visualized in an augmented map for a better overview.



Once arrived at a destination, further information will be provided in the form of audio or AR content.

Riddles hidden in the AR content can be solved to gather redeemable points.



The AR mode will show other customers who are using the app. Recommendations and ratings can be exchanged.

Bibliography



- www.stackoverflow.com
- www.quora.com
- www.developers.google.com
- www.meduim.com
- www.linkden.com
- www.youtube.com
- www.arcoresetup.com
- www.computer.howstuffworks.co
- www.computer.va360net.com
- www.developers.android.com
- www.wikitude.com
- www.github.com
- www.javapoint.com
- www.google.com
- www.wikipedia.com
- www.ahmedabadheritage.com
- www.mapbox.com