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UrScore

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ABOUT THE ORGANIZATION

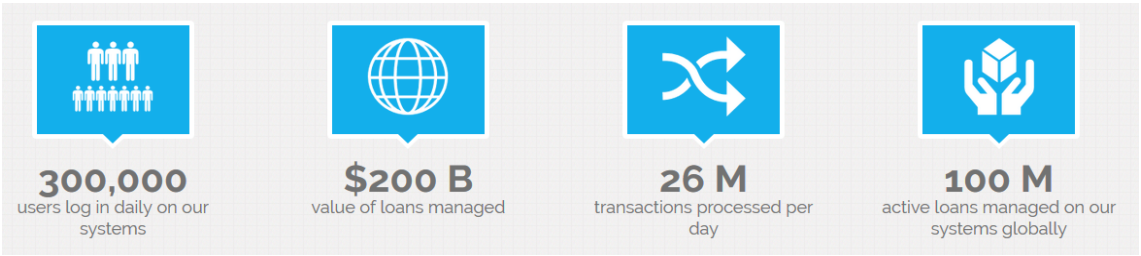
Nucleus Software provides lending and transactional banking products to the global financial services industry. As a pioneer in retail and corporate banking software since 1986, we combine deep expertise with an unprecedented track record and a total commitment to building lasting partnerships with our customers.

Their software powers the operations of more than 150 companies in over 50 countries, supporting retail lending, corporate banking, cash management, mobile and internet banking, automotive finance and other business areas.

Nucleus Software is known for our world-class expertise and innovation in lending and transaction banking technology. Our two flagship products, built on the latest technology are:

- **FinnOne™**, 10 time winner - World's Best Selling Lending Solution.
- **FinnAxia™**, an integrated global transaction banking solution used by banks worldwide to offer efficient and innovative global payments and receivables, liquidity management and business internet banking services

With changing market dynamics, it focuses on product innovation with a passion for perfection and relentless commitment to deliver world-class products to its customers. Several strategic initiatives are underway to strengthen operational processes, employee empowerment and co-creation initiatives have been proceeding for sharpening customer centricity



Every day in 50 countries more than 150,000 people use our solutions to serve millions of customers. Every day the world's most innovative companies rely on Nucleus Software to help them achieve their business goals. Whether it is handling growing loan portfolios or reducing levels of non-performing loans, reducing loan approval times or unlocking trapped cash across borders our customers have gained measurable business benefits fast. Basis the solutions we provide, our customers have won awards, including; model bank awards, technology implementation awards and process excellence awards.

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PROJECT ABSTRACT

With Increasing daily businesses and developing economies, more and more people come into encounter with hundreds of new people. With more and more people and new faces, it becomes slightly difficult to get an idea of the background of an individual.
What if something does the task of analyzing the profile of the individual for the companies/ banks/ financial institutions so that they can easily rely upon the genuineness and background of that person. This ultimately will help organizations to analyze people's profiles based on their social activity and help them detect cons and defaulters. UrScore serves the purpose here and Furthermore, this can be implicitly used by an individual to share his profile externally or to his social profiles.

- Financial Institutions like Banks can use it to analyze the profile of borrowers or clients.
- Recruiters can use this tool to analyze the profile of a candidate.
- This tool can be further developed and modified to analyze the profiles of the victims or the accused by the law and order agencies.
- Can be used by an individual implicitly to express his profile externally.

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1. INTRODUCTION

URSCORE is an Android project which aims to solve the problem of verifying individual's identity via social and mobile device profiles. It can be used by an individual to publically share his profile score so obtained by analyzing his profiles or by the Banks/ Financial institutions/ Recruiters to analyze and evaluate the profiles of Borrower/ Customers/ Clients/ Candidates etc. as per their respective terms of use.

2. FUNCTIONAL REQUIREMENTS

2.1 Login Though Social Profiles

Since the analysis is to be done through data brought from the device and social profiles, it is necessary that user is made to login through various social networks (facebook, linkedin, google, etc.) and agrees to share his data the platform by accepting the respective terms that appears and allows various permissions to access the device data.

2.2 Calculation of Profile Score

The profile score is calculated by applying certain algorithm specifically designed for the process.

2.3 Analysis of Social Scores

The social profiles are thereafter accessed, stored locally and analyzed based on certain pre-defined parameters and various remarks are generated.

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3. NON FUNCTIONAL REQUIREMENTS

3.1 Performance

The application has to offer a very quick response time as the setup involves multiple logins which can be considered a downside. A good flow design is required.

3.2 Scalability

The application should respond properly to a high increase of users. It should be able to handle multiple user at the same time.

3.3 Extensibility

The application should by extensible in order to support multiple versions of android so that people using even the older devices are able to make use of the application.

3.4 Availability

Since a lot of information is to be exchanged and processed, it should be allowed to communicate through the internet and the information processed should be made available as a result

3.5 Privacy and Security

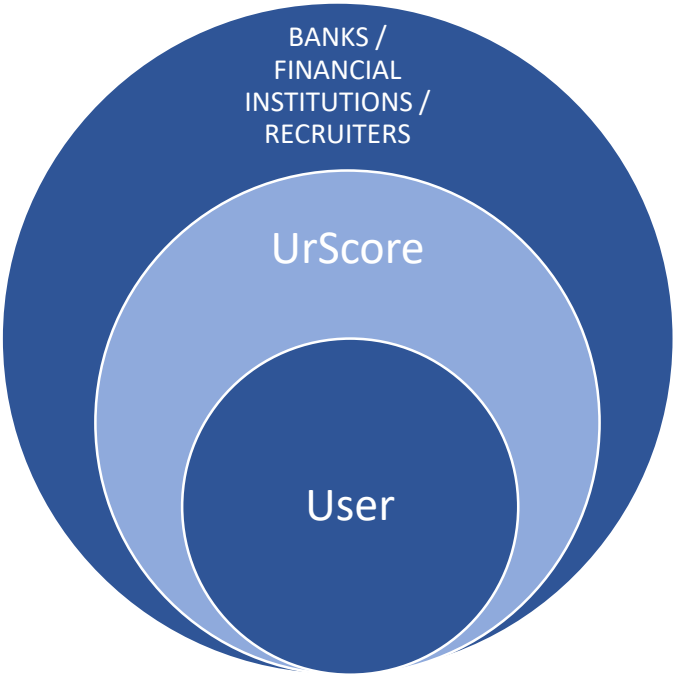
The application should ensure the privacy of the users including the data they bring in to the through various social logins. The social login system should also be robust where only authorized users can bring in their data and made it to be analyzed.

3.6 Maintainability

Since the application may be further developed in the future by adding other features, it should be easily maintainable.

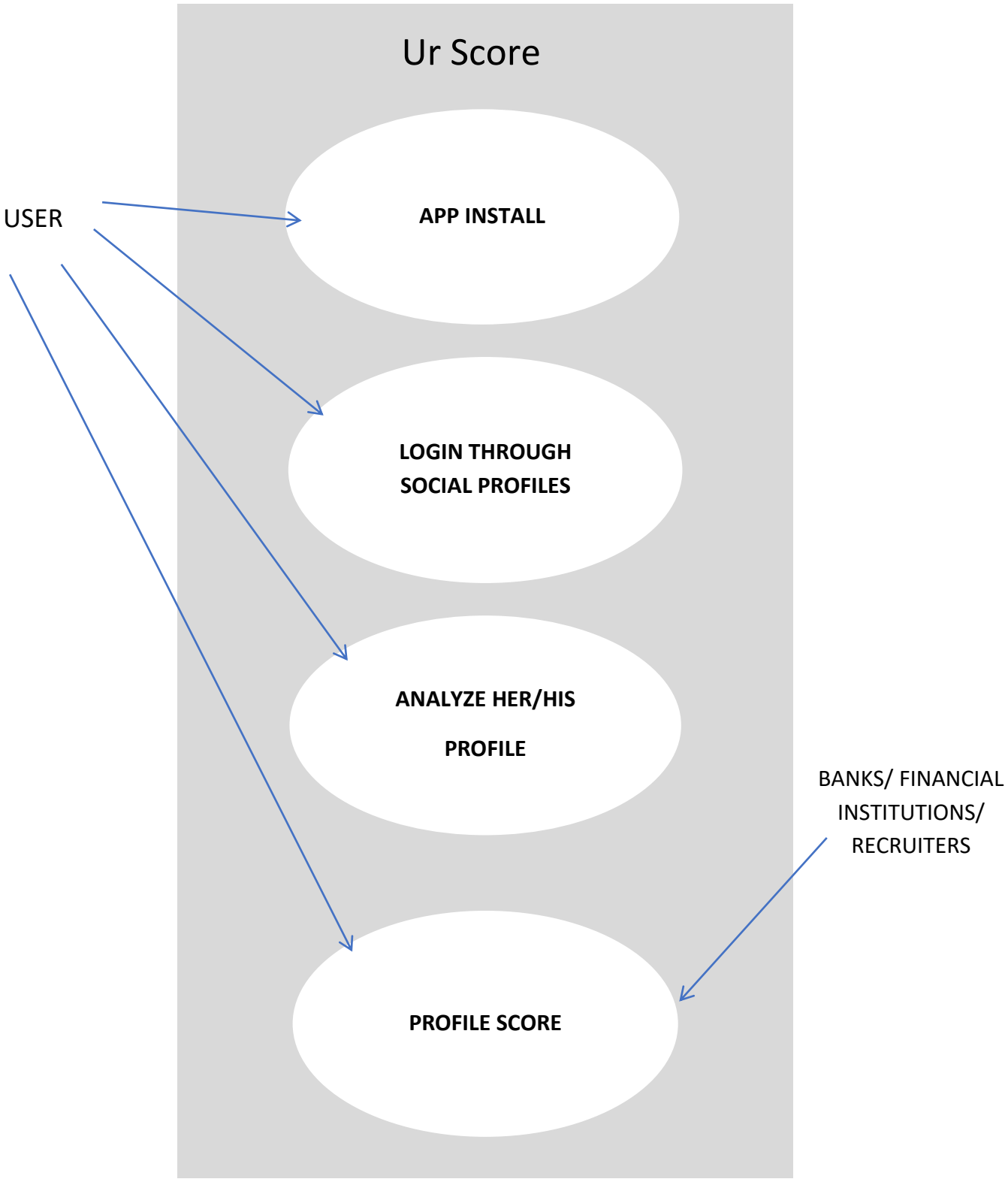
4. SYSTEM DESIGN AND ARCHITECHTURE

4.1 System Architecture



STACKED VENN RELATIONSHIP

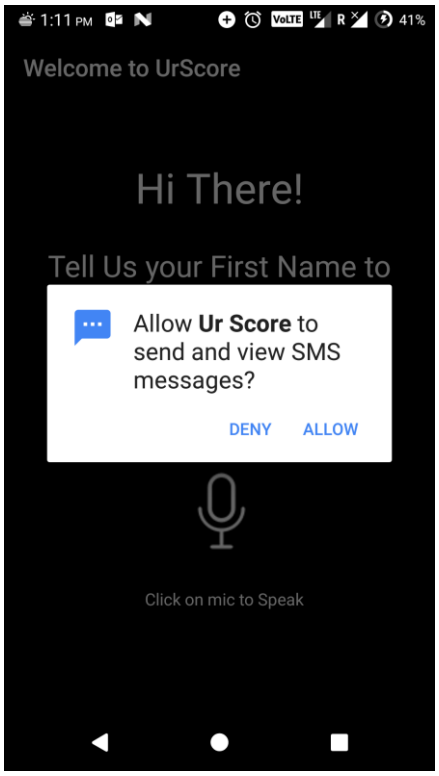
4.2 Use Case Diagram

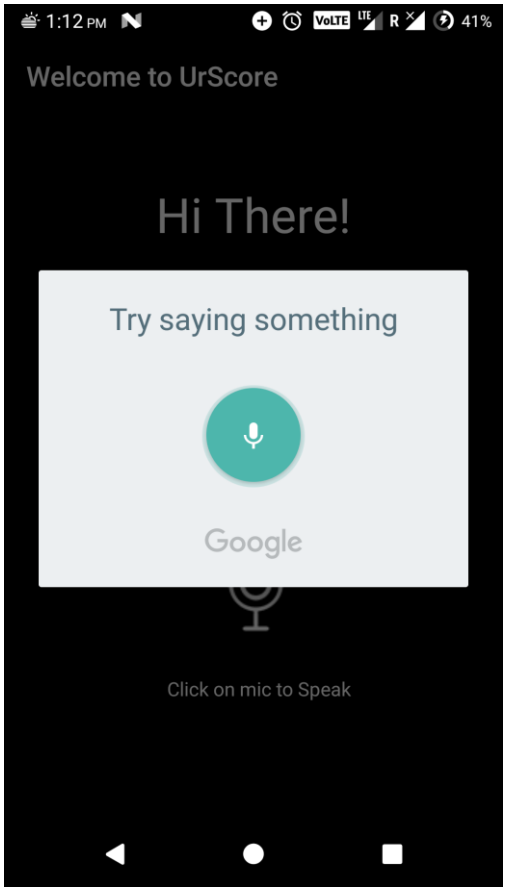


4.3 Application UI

- This is the front Home Page of the Application
- It consists of a button which activates the voice recognition in app to get the first name of the user.

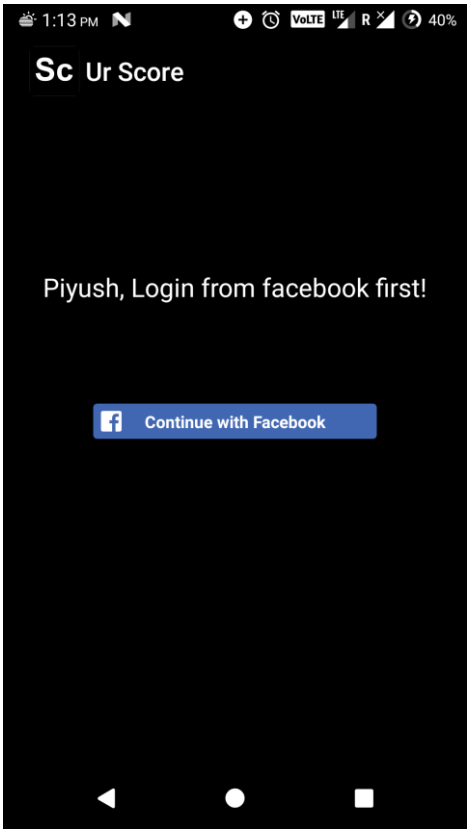
- The application fully supports android 6.0+ (Marshmallow), which involves runtime permission grant for various tasks, opposite to the install-time permission acceptance by the user in lower android version (supports android 4.0+).

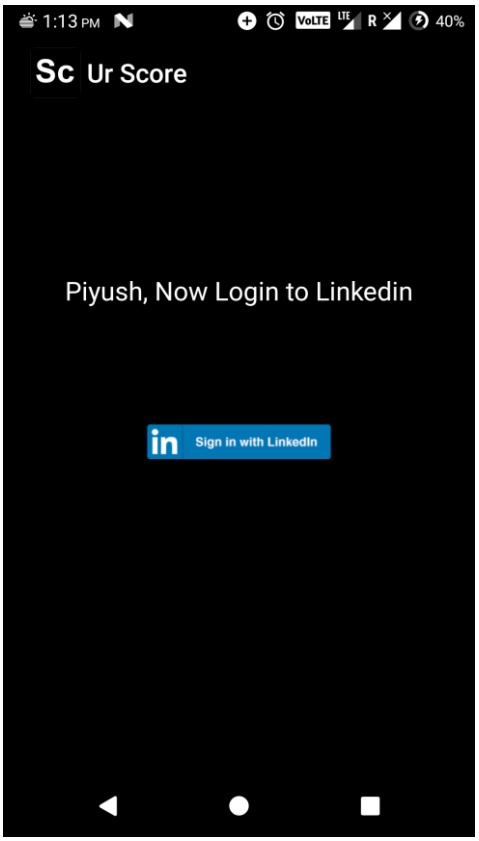




- This is the UI that appears when the user taps the mic button provided on the home screen to capture the user voice for the first name.
- This makes the use of Offline Google Speech Recognition in native language mode of the device.

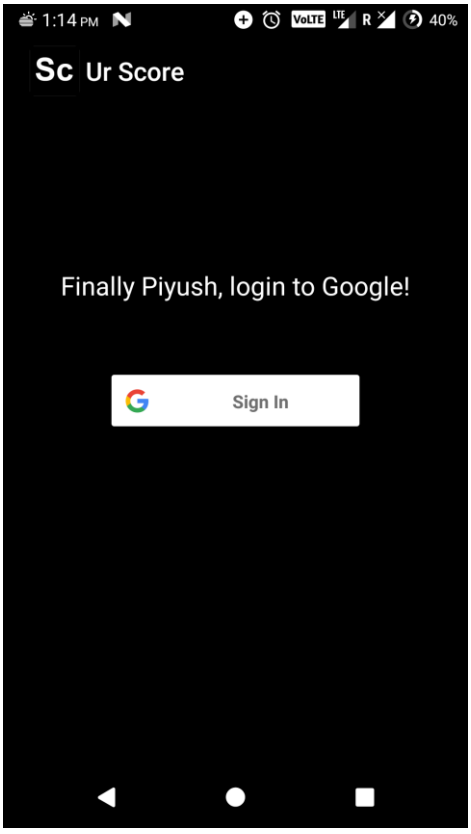
- This is the first Social Login Screen where user Signs in through facebook and authorizes the app to access his/her profile.

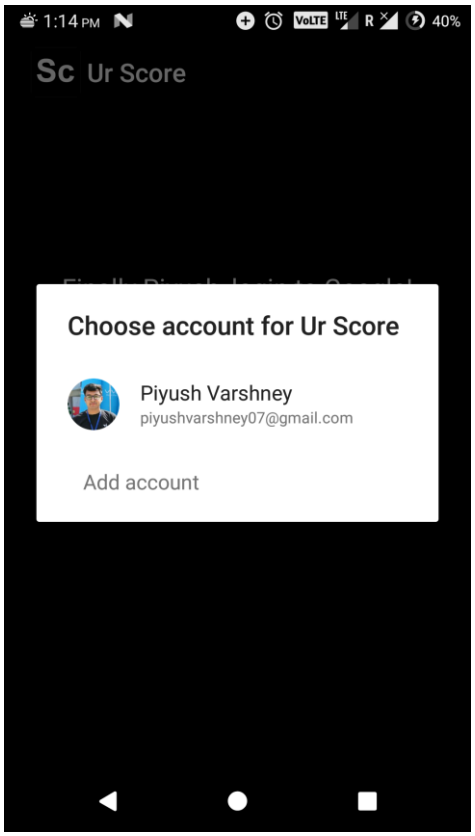




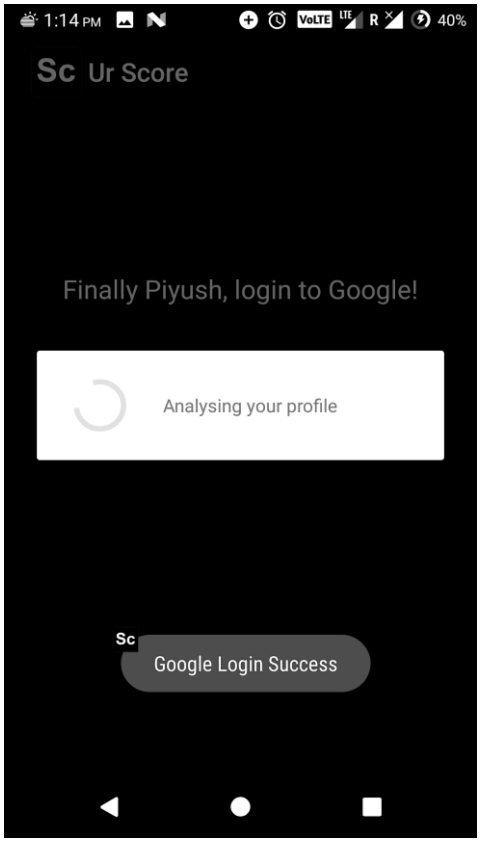
- This is the screen (activity) where the user taps the button to login through his linkedin profile and authorize the app.
- Linkedin SDK and Linkedin REST API are used to login through linkedin and retrieve data through API calls.

- Here in the final step, the user signs in through his google profile and selects the available google account to carry ahead the login process.
- This is done through the Google API calls and the response are handled through JSON parsing.

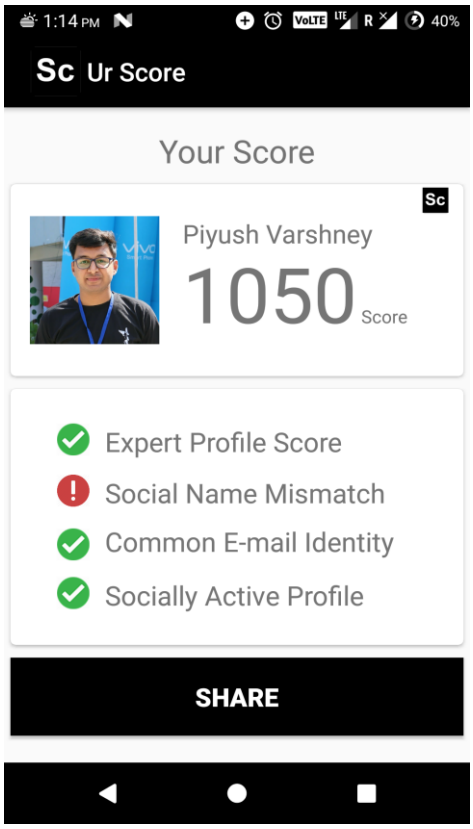




- This is the screen that appears when user taps the Google login button on the previous screen.
- It allows user to select between multiple Google accounts (if available more than one) on a device.

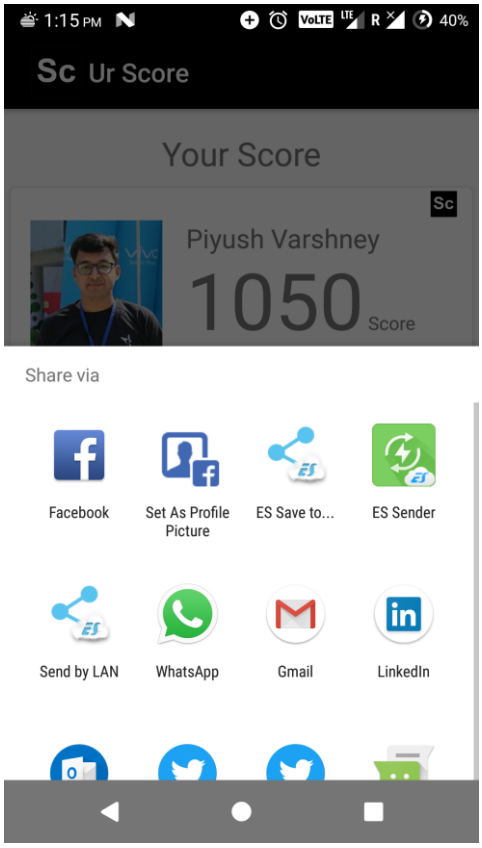


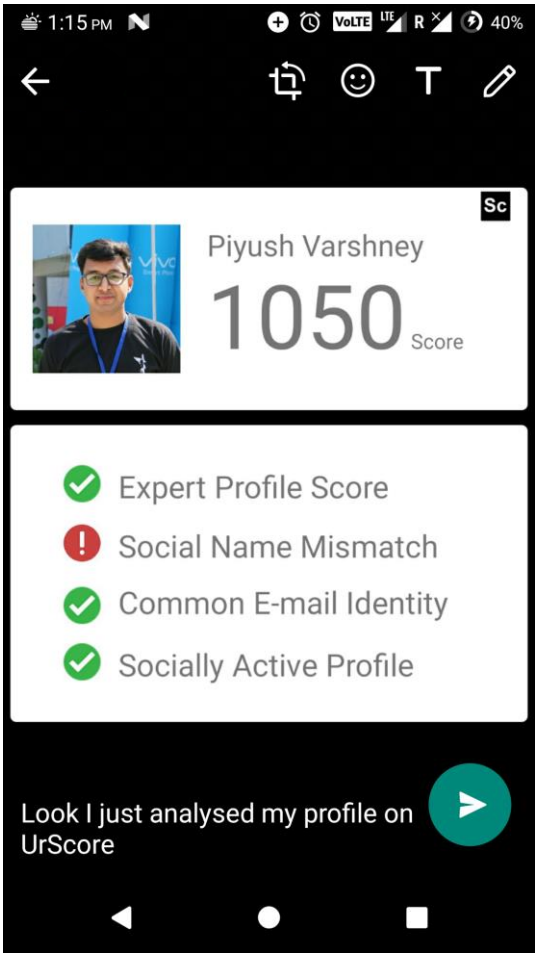
- This is the progress dialog box displayed while analyzing the user social profiles.
- This further leads to final result calculation.



- This is the final results page where the score calculated is displayed along with the certain parameters analyzed through the social profiles.
- It consists of the most common user name in profiles, user picture as on facebook and a score obtained to his profile along with a share button.

- By clicking on the “SHARE” button on the previous screen, a user can share the score of his profile along with the main points about his profile to various social channels.





- This is a sample of how the shared image looks like in WhatsApp Messenger application.

5. TECHNOLOGY STACK

5.1 Server Side tools and technology

- Facebook Graph API

The Graph API is the primary way to get data in and out of Facebook's social graph. It's a low-level HTTP-based API that is used to query data, post new stories, upload photos and a variety of other tasks that an app might need to do.

- Here the Facebook Graph API has been used to bring in the data about the user from Facebook's server.

- Linkedin REST API

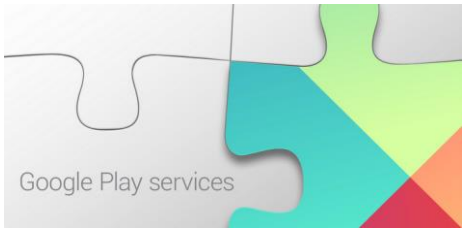
The REST API is the heart of all programmatic interactions with LinkedIn. In order for your applications to access LinkedIn member data and/or act on their behalf, they must be authenticated. LinkedIn relies on the industry standard OAuth 2.0 protocol for granting access, due to its simplicity and ease of implementation.

- Google API

Google APIs is a set of application programming interfaces (APIs) developed by Google which allow communication with Google Services and their integration to other services. Examples of these include Search, Gmail, Translate or Google Maps.

- We used Google API here to connect through google services and make our app communicate to Google's Server for information.

- Google Play Services



This component provides core functionality like authentication to your Google services, synchronized contacts, access to all the latest user privacy settings and higher quality, lower-powered location based services.

- We use play services to get access of user permissions and sms.

5.2 Client Side tools and technology

- Facebook SDK

The Facebook SDK for Android helps Android app developer implement Facebook functionality into their Android apps. Features include Facebook Login, Friend and Place pickers, session management, native object responses from the Graph API and Feed and Requests dialogs.

- Google Voice Recognition

It is an offline speech recognition system that is faster and more accurate than a comparable system connected to the Internet. Using various machine learning techniques, it is 7x faster than a system connected to the Internet and only has a 13.5% word error rate.

- We have used this to get the first name of the user on home screen.

• Java

The Java programming language requires the presence of a software platform in order for compiled programs to be executed. Oracle supplies the Java platform for use with Java. The Android SDK is an alternative software platform, used primarily for developing Android applications.

- The whole of source code for this project is implemented in java.

• Linkedin SDK

The mobile SDK for Android increases your app's time to market by providing out-of-box support for LinkedIn natively inside your Android applications. This allows you to boost your sign in conversion rates and saves time.

- We used LinkedIn SDK to introduce the login function in the mobile application through linkedin.

• SQLite

SQLite is an in-process library that implements a self-contained, server-less, zero-configuration, transactional SQL database engine. It is an embedded SQL database engine. Unlike most other SQL databases, which does not have a separate server process and reads and writes directly to ordinary disk files.

- We used SQLite to store information brought in from social networks locally on the device for analysis.

• XML

In computing, Extensible Markup Language (XML) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.

- We use XML to make the layout of the application.

- JSON

JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. It is based on a subset of the JavaScript Programming Language.

- JSON is being used here to parse the data returned by the APIs.

- Android Studio

Android Studio is the official integrated development environment (IDE) for the Android platform.

- We used Android Studio to make UrScore Application.

6. DEPENDENCIES

In **Android Studio**, **Gradle** is a custom build tool used to build **android** packages (apk files) by managing dependencies and providing custom build logic. We use several API's to make UrScore working.

```
'com.android.support:appcompat-v7:23.4.0'

'com.android.support:design:23.4.0'

'com.google.android.gms:play-services-gcm:9.4.0'

'com.android.support:support-v4:23.4.0'

'com.google.code.gson:gson:2.2.4'

'com.squareup.picasso:picasso:2.5.2'

'com.android.support:multidex:1.0.0'

'com.android.tools.build:gradle:2.3.3'

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'com.android.support.constraint:constraint-layout:1.0.2'


'com.facebook.android:facebook-android-sdk:4.23.0'


'com.google.gms:google-services:3.0.0'
```

7. STEEE ANALYSIS

- ## SOCIAL
- Calculate and socialize your profile score.
- Share your Score and other analysis with others.

- ## TECHNOLOGY
- Smartphone penetration is increasing day after day
- Use of technology to analyze social profile.
- The application is accessible from anywhere using a smartphone

- ## ENVIROMENTAL
- Does not has any harmful effect on environment in any way.

- ## ECONOMICAL
- Savings, as the cost of socially analyzing an individual/etc. before lending/ recruiting is reduced.

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- ## ETHICAL
- Client confidentiality is kept. No sharing of social details is allowed.
- All the details are stored locally on the device itself, reducing snooping/sniffing cases in server interaction.

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8. CONCLUSION

UrScore application that complies to the enterprise class application
principles. It is designed to be performing, scalable, extensible, and highly available. It also ensures the privacy of the users' data and secures its access. Given that it may be improved in many way, the application is also easily maintainable.

The result achieved in this project is a working Android application and server that perform the requirements stated in this document.

9. DISCLAIMER

This application can be further developed by making further R&D on other factors and improving the utilization of social information through machine learning, etc.