Android solvotech: An android based mobile application to hire the professionals for repair job and maintenance

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Abstract: Due to fast developments in the technology, the smart phones are proved to be an vital source of communication and now have grown to be an imperative part of our everyday lives.Now a days in India, human beings are facing the problems in finding and hiring nearby profession experts to avail repairing job and maintenance services for their properties and offices. Because of unavailability of such kind of system, new people coming to city are also dealing with predicament of discovering terrific work in their vicinity. To overcome this problem, it's immensely necessary to provide a platform in order to make a bridge of the communication gap between the technical employees and end-users which can provide an convenient and understandable interface for both the usage of the cutting-edge developments of technology. To get the great of smart phones, this work proposes an android utility or application for the android smart phones with the name Android solvotech. Android solvotech can be a terrific begin in this context in India. It is an android app that can communicate with the consumer and experts possessing different technical skills. The app presently has only four classes of professionals i.e. Painter, Electricians, Mechanics, Plumbers but it is expandable.

Keywords: Android recruitment system, local technical professionals, Maintenance and Repair system, Geo based home services

1. INTRODUCTION

Today we are living in a technologically superior era where the whole lot from education, business, and finance to amusement is accomplished through a cell machine the use of quite a number OS structures [1, 2]. There are extra than 2 billion users reachable on Facebook and likewise on different social media users are in same echelon. It capacity by some means each eight out of 10 people comprehend the utilization of clever phone. According to [3], smart smartphone enterprise is growing day by way of day in India. Almost 72% mobile users are using smart telephones and 52% access net on edge, 3G, GPRS. Due to widespread purposes of clever phones, all kinds of groups are   gradually shifting on modern day gadgets. Now a days order should be made via simply some clicks on smart telephones and wanted matters are acquired at the door steps. People of India are additionally using many smart phone apps which are very popular in versatile contexts such as: Foodpanda, zomato, Uber, Ola, swiggy and many others. In today's gadget-friendly surroundings people are seeking for the job and buyers are looking out for services without delay by clever phones. Mobile enterprise is now a predominant supply of employment opportunities [4].

To serve in this recent developing vogue we have proposed and developed an android software which shows how an awful lot a consumer and the provider issuer are a ways away from every other. It will be used to set up connection between users and local professional employees to supply repairing and protection offerings and will decorate employment opportunities. This device affords the answer of all troubles associated to home, workplace or any different place.

Android solvotech is a contribution in the direction of answer for neighborhood employees who are unaware of the electricity of smart phones. This App is designed and developed on android platform [5]. SQLite is used as an server, real-time database, push notification provider and internet internet hosting for android application. Mysql has been used due to unavailability of crew messaging in SQLite (A database service). Presently the proposed Application is began as a checking out purpose, if it will get some financial support it can be a leap forward for all kind of people as properly as for users.

The predominant goal of this work is to boost a gadget comprising of a internet site and an android app which consists of the following features:

- ☐   Provide alternatives of most wished workers i.e. Plumber, Electrician, Mechanic and Decorator.
- ☐   Inform by way of push notification with work description to worker.
- ☐   Send acceptance push notification to customer.
- ☐   Customer and worker can name or send SMS to every other.

II. RELATED WORK

The technological developments supply super possibilities to make existence a lot better for today's community. O.Y.Obansola et.al in [6] has proposed a Handyman smart telephone app usually designed for Oyo community and is aimed to supply reliable capacity for looking and recruiting artisans as per requirements. The designed app is based on android platform. Work in [7] has proposed a internet site in conjunction with a cellular application for handyman offerings
in Kenya. Agile software program engineering methodology used to be applied for the development of application. This application presents handyman offerings in locality.

Lots of repairing/maintenance and hiring apps are reachable international [8]. The Handyman [9] is the first internet primarily based Professional Handyman Service company in Islamabad, India began in November 2014. It provides services including cleaning, electrical, plumbing, and painting, renovation & restore work as well as tasks related to construction management. The urbanclap [10] is the first online app presenting offerings to India. It gives dependable and low-cost electrician, carpenter, plumber, AC repairman, mason, and painter. The proposed Android solvotech is the first internet and app which is imparting services to Chennai city

The summaries of pinnacle fifteen apps comparable to the proposed method are presented in table 1. India has greater unemployment and large range of nearby workers. From table 1, it is evident that many apps are working in India and have received recognition in relatively brief time span like HouseJoy, UrbanClap, Mr. Right, CHEEP and many others, with hundreds of thousands of users. However, there are handful android applications especially available for India, so Android solvotech App will be helpful as soon as people get start with it.

Name	Rating	Download size	Installed	Features	Area
Bid&Fix- Hire local service [11]	4.3	13.86 MB	1k – 5k	Fast services, best prices, quality work, earn free gift cards, more than 18 home and office services	United States
Gapoon-Professional [12]	4.6	4.5MB	10k – 50k	Comprehensive home services, verified experts, 30-days warranty service, fair price, convenient booking.	Bangalore, India
Housejoy-trusted home services [13]	4.0	6.42MB	500k – 1000k	Wide range of services including Appliance repair, beauty services at home, home cleaning, plumbing etc	Bangalore, Mumbai, Delhi/NCR, Chennai, Hyderabad of India
UrbanClap-local services [14]	4.2	6.9MB	1000k – 5000k	Range of home services, professional services,easy payments, convienent booking, etc	Ahmedabad, Bangalore, Mumbai, Delhi/NCR, Chennai, Hyderabad, Pune of India
Fixzy: Easy home maintenance [15]	4.5	-	10k – 50k	IDcardandpoliceverified technicians for home repairing services	Bangkok
GetNinjas [16]	4.2	10.8MB	100k – 500k	Ten categories, including: Home repairs, technical assistants, events, healthcare, lessons, cars etc	Brazil
Sakrobe [17]	3.3	8.3MB	10k – 50k	Home maintenance and more 10 other services, qualified technicians, two days, warranty cost free, support of Professional technical team.	Saudi Arabia, Bahrain
ServisHero:On demand services [18]	4.2	9.13MB	50k – 100k	Over 5000 professionals for home Commercia repairing1 cleaning, Event arrangements, secure digital payment, find professionals instantly, fair price.	Malaysia, Singapore, Thailand
mrUsta-Better services [19]	4.3	19.27MB	10k – 50k	10 categories including home, moving, auto,learning, wellness services etc, qualified service providers with 3 simple steps,	Dubai, Abu Dhabi
Mr.right: Home and appliance repair services [20]	3.6	5.17MB	50k – 100k	300+ home services, appliance repair services, upfront pricing, proper invoicing, secure, payments.	Dehli Noida, Gurgaon, Ghaziabad, Faridabad, Mumbai, Pune, Bengaluru, Hyderabad, Jaipur, Chandigarh

CHEEP-local home services [21]	4.7	10.14MB	10K+	Verified and trusted professionals, more than 17 services including appliance repair, home services, tutor etc	Five cities of India
OKSir [22]	4.6	10.93MB	1K+	8 categories, including: events, home repairing , healthcare, housekeeping, professional and tutor services	Hong Kong
Fix&More UK- for Pros & Tradesmen [23]	4.3	4.24MB	100-500	More than 18 home and office categories, including: home repairing, cleaning, cars repair and towing, moving services, etc	UK
Fix&More-Ireland [23]	5	6.14MB	10+	More than 18 home and office categories, including: home repairing, cleaning, cars repair and towing, moving services, etc	Ireland
Sukoon [10]	3.5	3.6MB	500	India's first online app from home cleaning to handyman services with estimated price for services, fix login and customer dashboard.	Karachi

TABLE 1: SUMMARY OF TOP FOURTEEN REPAIRING AND MAINTENANCE APPS AVAILABLE WORLDWIDE

III.TOOLS USED FOR DEVELOPMENT OF APPLICATION

The app is developed for android platform the usage of Android Software Development KIT (SDK) and Android studio and database is handled using SQLite.

A.Android SDK

SDK is a collection of equipment which make easiness and assist in app development. It is an integral part of the android software improvement [24]

B.Android Studio

Android Studio is an official IDE (Integrated Development Environment) for Android Operating System of Google. It is in particular built for Android Development and is based totally on IntelliJ IDEA software. Mostly Java is used however app can also be constructed using C++. It aims all dimension of display gadgets like android clever phones, Tablets, Smart TVs and Wearable devices. For coding, there is a most featured editor and a layout designer. For the output, an Emulator is given which is additionally recognized as Android Virtual Device (AVD) which looks like actual device.

C. SQLite

SQLite is an in-process library that implements a self-contained, serverless, zero-configuration, transactional SQL database engine. The code for SQLite is in the public domain and is thus free for use for any purpose, commercial or private. SQLite is the most widely deployed database in the world with more applications than we can count, including several high-profile

IV. IMPLEMENTATION

This section depicts the database structure and layout of the Android solvotech application. The layout of this application is self-designed, two panels are created one for customer and other for worker. The two panels have almost same activities inside; just main activities of both are different.

A.SQLite Database Structure

We have used SQLite(SQL database) . SQLite database is used to store users, workers, admin information.

SQLite database is used for the purpose of authenticating users and workers. SQLite database provides a unique user id when the user Sign's up. It is stored in the authentication section.
project.

B.Implementation of Conceptual model

MySQL database contains five table named as electriciandb, mechanicdb, plumberdb, decoratordb and users as shown in figure 2. All these tables contain 3 columns which are id, email and token. Basically database is used to store a unique token which is generated when the user or worker register themselves. These unique tokens will be used to send notification to the group of workers or to a particular user.

C.Implementation of Logical model

The five entities which play vital role for the website users include: Electriciandb, Mechanicdb, Plumberdb, Decoratordb and user. Electriciandb is an entity responsible to store tokens of electrician when they signup. The notification will be send to the group of electrician using these tokens. A snapshot of table related with this entity is shown in figure 3. The tables related to Mechanicdb, Plumberdb, Decoratordb and user are also maintained in the similar manner.

D.Working of the Android solvotech app

The overall layout of the app is given figure 4. App activities includes: Introduction, Splash Screen, Choose, Signup, Login, Main Activity (customer), Main Activity (worker), Profile, History, and Setting, Contact us. In Customer's Main Activity there are 4 sub activities named as Decorator, Electrician, Mechanic and Plumber.
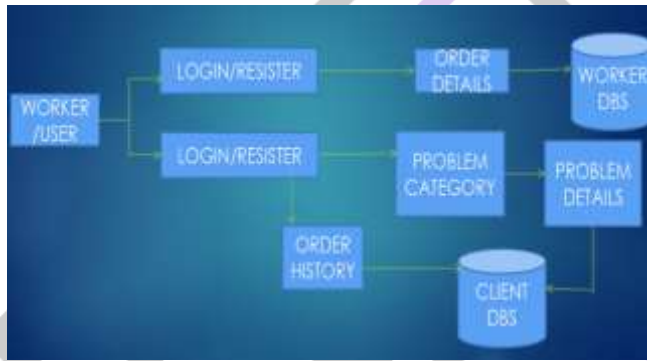

Fig 1 : Architecture diagram

After installation, an animated screen with title "Android solvotech (Repairing & Maintenance Service)" and a logo will be shown to the user. The choose Activity shown in figure 5(a)

helps to distinguish in users, it has two buttons, one for customers and other for workers. After selecting Customer or Worker option in choose Activity, users have to fill the signup requirement, both signup have different requirement fields. Customer signup is simple shown in figure 5(b) and it contains Name, Cell Number, Email, Address, Password fields. Worker signup have some different fields like Name, CNIC, Email, and Address, Password, and Category i.e. (Decorator, Electrician, Mechanic, and Plumber).

The interface of main activity of customer contains Google Map with four floating buttons (Decorator, Electrician, Mechanic and Plumber) and an order button which remains disabled until user select one of the above option in floating buttons. Now Customer can order by clicking on "Order a Decorator" button, it will show another Type Order activity. Same process is applicable for all other options i.e. (Electrician, Mechanic and Plumber). This Type order activity has an edit text and two send and receive buttons. An order with short description will be written and send to all nearby group of worker that is selected by customer in the form of Push notification. The customer main activity is depicted in figure 6(a) and type order activity is illustrated in figure 6(b).

Worker's activity contains message box with a find path button and two text views of duration and distance. Whenever worker will receive an order notification, if worker accepts that order a push notification with confirmation message will be send to that specific user and duration, distance and path will be shown to both worker and Customer. Then an alarm will ring on both user and worker sides to make them alert. Both can also communicate with each other via SMS or Call, as the numbers will be shown after confirmation.
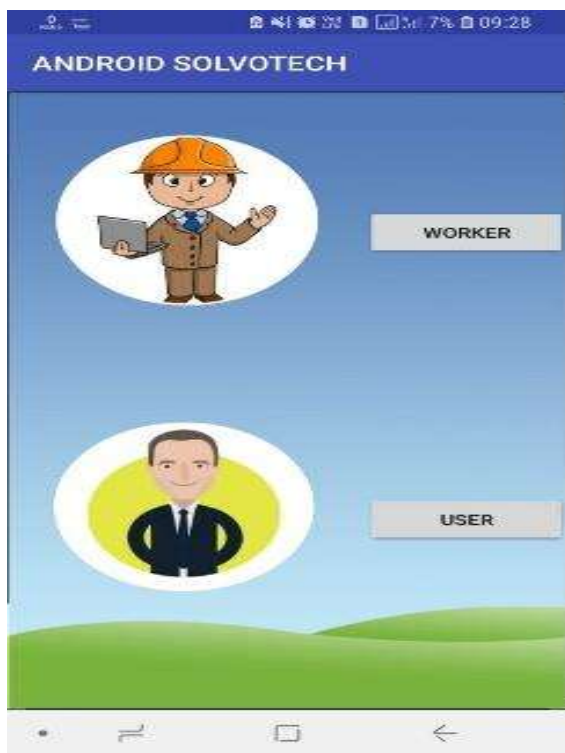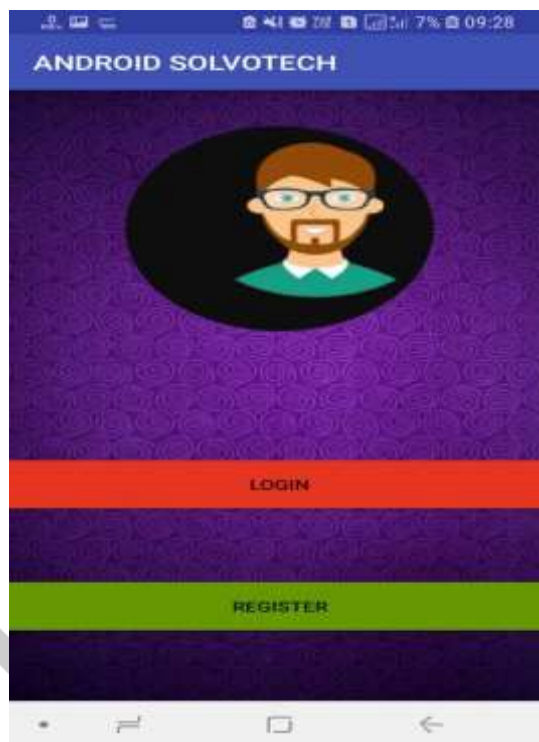
Fig 2(a):Choose the activity

Fig 2(b):Login or resister

Fig 2(c):Choose Work Type

Fig 2(d):User registration

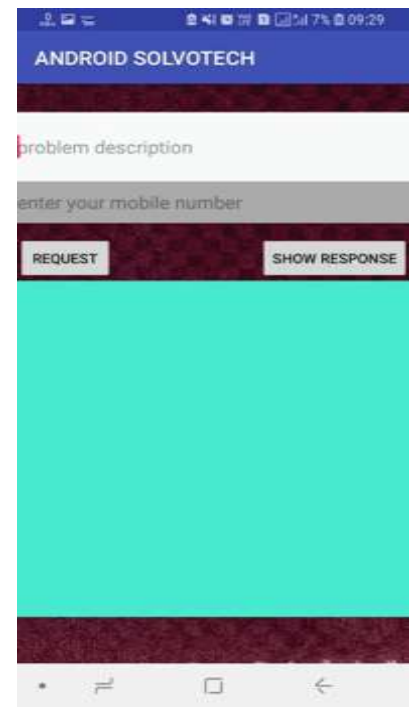Fig, 2 (e):Message Box for worker   Fig 2(f):Worker Registration   Fig. 2(g):User Message box

VI.CONCLUSION AND FUTURE WORK

In this quick moving innovative time, the lives of individuals are very tiring and boisterous. So there's a developing request for finding specialized specialists and related administrations effectively and more particular to the area. To serve in this setting, this inquire about work has proposed a framework to look and enlist a specialized proficient based on user's area. We have outlined and created an app and website for the arrangement of handymen administrations accessible in consumer's region. Testing of the ultimate application was fulfilled and input was collected from potential clients. Due to the restriction of free benefit of Firebase, the number of clients were confined. To encourage test the viability and functionality of created framework, casual social media reactions were too accumulated. Since this can be to begin with working app for Hyderabad, so the comes about were exceptional. After getting recommendations from respondents (clients and specialists) on social media, taking after expansions in Renovate-It app can be oblige.

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