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**“Mazdoor Haazir Platform (Mobile App & Web Platform)”**

### **Final Year Project - Chapter # 01 to 07**

#### **Submitted by**

<b>Name</b>	<b>ID</b>	<b>Section</b>
<b>Danish Ul Hassan</b>	<b>CSC-18F-094</b>	<b>CS-8C</b>

#### **Project Supervisor**

**Ms. Syeda Wajiha Naim**

# **MAZDOOR HAAZIR PLATFORM (MOBILE APP & WEB PLATFORM)**

## **FINAL YEAR PROJECT THESIS**

**DANISH UL HASSAN**

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**SUPERVISED BY**

**Ms. SYEDA WAJIHA NAIM**

**Project Report in partial fulfillment of the requirements**

**for the award of Bachelor of Science in Computer**

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**In**

**DEPARTMENT OF COMPUTER SCIENCE**

**SINDH MADRESSATUL ISLAM UNIVERSITY**

**KARACHI, PAKISTAN**

**(JULY 2022)**

### **Declaration**

We hereby declare that this project is based on my original work except for the citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Sindh Madressatul Islam University or any other institutions.

Signature:

Name: Danish Ul Hassan

Reg No. CSC-18F-094

## APPROVAL FOR SUBMISSION

We certify that this project report entitled “**MazdoorHaazir Platform**” was prepared by **Danish Ul Hassan** has met the required standard for submission in partial fulfillment of the requirements for the award of Bachelor of Computer Science at Sindh Madressatul Islam University.

### Approved by

#### Signature

Supervisor:

Ms. Syeda Wajiha Naim

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DEAN/HOD Of Department

Dr. Aftab Ahmed Sheikh

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Date: \_\_\_\_\_

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## **Abstract**

Everyone needs everything from the comfort of their homes, these things become norm after the Covid-19. The businesses who never taught about online started selling online. In light of this we solve a local problem especially in the context of Pakistan specifically Karachi to develop a platform (mobile app and web platform) in which we are giving users to hire and connect with the laborers of different kinds initially we are providing home construction laborers. A general statement of the problem can be followed as, users can search according to their location wise, and they will get to see only the laborers around or near the location and connect with them and start their project. “Mazdoor Haazir” is a platform that connects customers to the skilled, experienced, and reliable service professionals in their own locality. “Mazdoor Haazir” is the one-stop destination for all areas needs which includes cemetery, concrete laborers at your doorstep.

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## Chapter 01

### Introduction

#### 1.1 Background

Traditionally if we need any labor and workers to build our house or to paint our house, we usually try to find these workers using different sources (from friends and relatives). There is no such platform where we can find them, in search of work they (mistris and workers) sit around the road corners and outside the local hotels to find the work and these spots are quite limited and most of the people don't know about these spots. In Pakistan when we decided to build the house, the first problem we faced is to find good builders (Mistri's and Labors). This is where the problem begins finding a good Mistri is a hectic job, usually people try to find someone who works for them before, and the other way is to find them through different sources. The problem is not solved there for suppose if the known or source Mistri's working somewhere, or they are not available for any reason then the suffer is real.

#### 1.2 Problem Statement

We are living in 21<sup>st</sup> century, and currently we are in the year of 2021, and everything is going to be digitalized, as we see in Covid-19 many on-site businesses shifted towards (only) to online stores, due to the critical situation of Covid-19. As we know there is a standard or fixed labors (daily-wage) pay. And there is a concept of work on contract bases (with fixed total budget which is decided first before the contract proceedings). Usually on daily-wage they work around 8-9 hours but on contract basis they work according to their own availability, and they work like around 13-14 hours because they know what they are getting (payment) so they try to finish the job as quickly as possible. The concept of “Mazdoor Haazir” is to empower and aware the mistris and labors so they can also experience and taste this site of the business.

### 1.3 Objective

To develop a platform (mobile application) namely “Mazdoor Haazir” for the mistris and labors where they can get the work opportunities by just registering on the platform and the users will hire them according to their needs. Additionally, they can upload their previous work images/videos and maintain their portfolio, which helps them and the user (the people who are looking for labors) have a good idea about their skill set. On the other hand, the user will find the mistris and labors at any time in the application according to their availability and location. For user they just need to register their account with mobile number or email. There will be a functionality of search from which user can find the nearby labors and also there will be a functionality of leaving ratings add comments after the contract is completed.

### 1.4 Introduction

It's said that educated people play a basic and a key role in the development and reformation of any society. It will be a cross digital platform with friendly user interface which provide modern solution to a modern problem, hiring daily wagers. With this mobile application a particular part of working class will be much easier to find. The analysis revealed that various mobile applications have been developed for different purposes like contact tracing, awareness building, appointment building, online medical consultation, etc. however only a few applications have integrated various functions and features such as self-assessment, consultation, support and access to information. The concept of Mazdoor Haazir is to develop a platform for the people who are struggling to find good Mistry's and Labors to build their house. There is not any online platform where we can find them and hire them, traditionally it is done through the long walks and there are some spots in the cities where they gathered in the early morning in good numbers to find the work. Mostly they sit around on the crowdy footpaths and on some local hotels (tea stalls). There are limited spots where they sit, and common people don't know about these spots. The goal is to develop a platform with the name of “**Mazdoor Haazir**” for Mistri's and labors where they can find the opportunities of

work according to their availability and location preference. On the other side people will find the labors with few clicks by registering on the application. The platform will allow the labors to setup their profile and mention their availability of work hours, contact details and most importantly they will maintain their portfolio like they will upload their work images, videos to get highlight on the platform. And the user will hire them by checking their work and after the work is done the user will be able to leave the ratings for their works. The platform will not only for the Mistri's, but it will also allow other labors and workers like painters, plumbers and other different kinds of labors can register them self and find the work according to their level of skill set.

## **1.5 Project Scope**

The goal is to develop a platform where people can connect with the labors and contractors and hire them according to the need. In “Mazdoor Haazir” platform (application), in which they (mistris and labors) can register their self along with their other team members (labors and workers) and get the jobs (work contract) through the application just creating and managing their profile. They can share their contact details, area preference of work (availability where they are looking for work).

## **1.6 Modules**

### **Module-I**

In this module we will be working on the detailed problem that we are going to solved. Starting from gathering information to the detailed documentation of the project flow. The documentation will be go-to point for us when we are executing or developing each phase of the application.

### **Module-II**

In this phase we mainly working with User interface of the application. The UI will be developed in different sub-phases.

#### **Module-II (a)**

First, we will work on the UI of the login and signup screens which also requires validation and authorization. We will give the new user the option so they can directly signup using Google Account.

### **Module-II (b)**

In second phase we will be developing the UI of creation of profile setup where Mistri's' (labors and contractors can manage their profile and then users will see those profiles in the feed, and separate UI for the users.

### **Module-III**

After the completion of UI now we will be heading towards the logic and functionality part we will work on the validation and verification of the user and mainly we will be working with the functionality of profile creation and management of profile and then we will work rating part where user can leave ratings can add comments. After all that we will implement the search functionality so users can find what they are looking for.

### **Module-IV**

In final module we will test our app through the functional testing techniques with agility and the performance assessment of the application. For practically we will provide our app to few developers and students so they can use our app and will provide us honest feedback.

## Chapter 02

### Literature Review

#### 2.1 Introduction

Illiteracy is one of the main complications in developing countries like Pakistan. The implementation and uses of the ICT based solutions for the illiterate people of our underdeveloped country can play vital role in reducing the digital inequality and the digital divide for the social and economic development. The objective of this mobile application is to develop and work as bridge between technology people focusing job search for illiterate people in Pakistan.

It's said that educated people play a basic and a key role in the development and reformation of any society. It will be a cross digital platform with friendly user interface which provide modern solution to a modern problem, hiring daily wagers from the streets of your own locality. With this mobile application a particular part of working class will be much easier to find.

To accomplish this objective, firstly, a conceptual framework was proposed (to the fyp-instructor) based on the findings of the literature survey and a need finding study, while the need findings study was replicated with local daily wagers who were illiterate. Secondly, a cross mobile application with user-intuitive user interface will be developed. To make the interface intuitive for illiterate people, it encompasses voice, icon, pictography, maximum number of text in native language.

## 2.2 Details of the Relevant Theory

In past years mobile phone has brought a revolutionary change for better communication of society. A vast number of mobile apps have been developed during the past few months in an attempt to “flatten the curve” of the increasing number of COVID-19 cases. Mobile apps have been implemented for training, information sharing, risk assessment, self-management of symptoms, contact tracing, home monitoring, and decision making, rapidly offering effective and usable tools for managing the COVID-19 pandemic. The analysis revealed that various mobile applications have been developed for different purposes like contact tracing, awareness building, appointment building, online medical consultation, etc. however only a few applications have integrated various functions and features such as self-assessment, consultation, support and access to information.

In corona virus outbreak many people faced financial losses, many businesses sank, due to the termination of employment, the working class had to face a lot of difficulties. Because of the lockdown situation no one could call in the houses. Many businesses shifted their entire work online, homes had turned into offices, and workers started work from home. We thought should create a mobile application who will work for these daily wagers. Problem statement is we had to pick up the sand, gravel and cemetery workers for household work in local areas. But we did not know where these workers gather and sit, in order to find these laborers, we don't know anything about them. We thought should work on a platform which will work for these laborers.

For this purpose, we will be working on a mobile application that will provide a work contract to these labors and whoever want to hire them for their work can hire through this platform. To accomplish this objective, firstly, a conceptual framework was proposed (to the fyp-instructor) based on the findings of the literature survey and a need finding study, while the need findings



study was replicated with local daily wagers who were illiterate. Secondly, a cross mobile application with user-intuitive user interface will be developed. To make the interface intuitive for illiterate people, it encompasses voice, icon, pictography, maximum number of texts in native language.

“Mazdoor Haazir” is a platform that connects customers to the skilled, experienced and reliable service professionals in their own locality. “Mazdoor Haazir” is the one-stop destination for all areas needs which includes cemetery, concrete laborers at your doorstep.

### **2.3 Review of past work/similar apps**

Harshithraj, Ashitha, Arpitha, Ramana, and Manohar [1] have discussed in their paper the several aspects of the unorganized workers who are looking for work in local industries and due to their lack of education they are unable to connect with any firm and they go to the local contractors to work on daily wages, these contractors cut their some of the amount as a commission and the labors have no choice to go somewhere else,. In the paper they proposed a system of job recommender system for the illiterate people to find the suitable work. The authors explained that the unskilled workers in developing countries facing different challenges in finding the work in their cities or villages. Traditionally it is done through the labor brokers who connect them with the companies or organizations, and they (labor brokers) charged some amount from their daily wages. The author of this paper comes up with an idea of developing a web portal platform for their kinds of unskilled workers and according to their preference, they will find jobs on the platform, not only this they can also find the work opportunities near their cities or villages. The web portal is developed with a simple user interface with unskilled and illiterate workers knowledge in the mind, so they can easily use the platform. The platform will handle the directly employees who is looking for laborers and the platform will be in the regard of zero commission criteria, means it will not charge anything from both the parties and the platform will be operate all over the country. The person (illiterate unskilled worker) just needs to register themselves and upload the necessary documents and then can find the jobs of their interest. The platform will work in a way that the employees can find the jobs from the feed and will apply on them according to the criteria set by the employees and also employees can go through the applications and hire the

right person. This portal has additional functionality which known as job recommender system. The job recommender system will assist the user (unskilled workers) to use the job near their location and job which match their level of skill. The system will work and improve through the interactions of many users.

Sadeeq, Imran, Iftikhar, Majid, and Fazal [2] proposed a personalized preference collaborative filtering on the user interface for the different users, they proposed that the user interface will vary for illiterate, semi-illiterate and literate users, and we need to prioritize the cultural values with other common aspects. According to them the design is easy to navigate for people of all domains irrespective to their education. In this paper researchers suggested that the user interface should be different for the literate users and illiterate users. The developers should need to understand the limitations and knowledge gaps of illiterate people and will also need to look from which culture they are coming from. Countries like Pakistan where illiterate users are in good numbers, the user interfaces should be designed in a way different then the other common user interfaces. The user interface should be easy to user with simple color and font schemes and with a touch of cultural (region context pictures). The user interface for illiterate people should be designed with a less textual approach and should be easy to navigate between different screens. The user (illiterate person) feels comfortable while using the user interfaces. When talking about that the user interfaces should be designed or developed with less clickable or less textual format. For instance, like in normal websites we need to turn on the volume or want to go back, it is okay in normal website for literate and aware users but when we are talking about illiterate users the design should need to include icon images for these purposes. The concluded note is that they identify the challenges that the illiterate persons face in user interfaces is the use of the text, the inability of read and write of illiterate users will feel helpless in this sort of user interfaces. The user interfaces with more text content are not suitable and too much difficult to understand for the illiterate people.

Elsa Friscira, Hendrik Knoche, Jeffrey Huang [3] have explained that around the 800Million population of the world is illiterate and are not getting benefited from the asynchronous and cheap technology, they developed and mobile application for the people to send and receive text messages as well as voice messages. The technology is advancing day by day and we all are taking

some benefit from it, but we don't need to ignore the large part of the world population which is around 800+ Million which are of illiterate people. This large amount of world population is somehow excluded from the revolutionary world, or we can say that they are not taking any benefit from these cutting-edge technologies, especially the communication domain which is important in any aspect. From the passing day, the technology along with internet is getting cheaper day by day in developing countries. The authors of this research paper come up with an idea for illiterate people to develop a mobile application for sending and receiving messages. The users of this application will be able to listen the received messages and send messages with a text-to-speech methodology, familiar icons, emojis, frequent text phrases etc. The application is designed both the illiterate and immigrants' users in mind, the user interface is pretty simple and easily navigable. The researchers address several questions in this paper of the illiterate persons that they came across while conducting interviews and asking for reviews for the application. They address that the user interface of application should be user-center designed for illiterate users. Their focus was this domain (illiterate people) for this they conduct different interviews and created task-based scenarios. As a result, they come up with a simple and easy to use application for the illiterate people and they get the idea to extend SMS service for the illiterate people in a more simple and easy way.

Restyandito, and Alan H.S. Chan [4] have identified factors that could influence the effectiveness of the user interfaces for the illiterate people and they said in their literature that the interface designers should need to consider the limitations of the illiterate people, mostly they used the cellphones just for the phone calls and now in modern times the technology is evolving and it is getting cheaper in developing countries so it is equally important to designed the simple and easy navigate applications so the illiterate and blue collar people can get benefits from this. The researchers identified the some of the major factors which majorly influenced the illiterate people, the researchers emphasized that the illiterate people have some limitations while accessing the online information, we should need to respect their limitations. The majority of illiterate people use the cell phones just for the voice call communication and majority of the people still don't have smart phones. Now in modern time the technology is evolving day by day, so it is important we need to consider the design concepts which should be used while designing the interfaces. They

suggest that the interfaces should be designed in a simpler manner for which the illiterate people feel comfortable while using the application.

Daniel Pataca, Sônia Kutiishi, Esther Menezes and Graziella Bonadia [5] researched using survey methods and interview methods, they developed a e-platform for the retired and illiterate people which are digitally excluded from the technology spectrum and recruitment processes from the organizations. From all this they tried to accommodate all the early retired and blue-collars workers who are looking for work so they can find the right career opportunities. In this paper, the researchers identify the areas which is slightly ignored by almost everyone, is the area in which retired and disabled people lies. These people are almost excluded from the digital world which is a big concern in any developing country. They come up with an idea of “e-gov service” for the retired people and disable people in this platform the retired people and disable people will upload their documents and the employers will look into their documents and will hire them accordingly.

S. Deo, D.M. Nichols, S.J. Cunningham., I.H. [6] Witten proposed in their paper that the digital information is easily available for all, but to access the digital information still have some barriers for the illiterate people and they have addressed that there are still some gaps which needs to cover so the people with limited knowledge can access to this information. In this paper researchers discussed the issues that the illiterate people face while accessing the digital information, which includes (libraries, songs, movies, newspapers, etc.). As we know everything in modern era is going to digitized whether its newspaper or books to cater these challenges for illiterate people the authors discuss the issues and proposed the solutions for this. The common definition we know that about the literate (is the capability or ability to read and write properly). But now it becomes a set of literacies which includes media literacy, social literacy etc. To make this available for majority of the people the designers and makers should need to categorized the presentation or accession of information according to the level of literacy rates, likes for kids we need to develop interfaces in more simpler and natural way, for illiterate people the digital information should be arranged in that way they feel comfortable and more in detailed way and especially for illiterate people the digital information should be designed and present according to their level of

knowledge. The world is revolutionizing, and we cannot forget this big segment of the people. The best solution is to make software available for all the people in easy and accessible manner.

Hamzi, Morteza, and Abdolreza Hajmoosaei [7] presented that the design principles are a way to inculcates technology and creative thinking. We can create an attractive layout by diving out into the harmony and the purpose of the website, with simplicity and accessibility in mind.

According to the Takada, Haruhiko, and Incheon Paik [8] research in Carleton University in Ottawa which claims that the users of the website form the opinion, by just visiting out the website, in 1/20th of a second, this is a worrying number for the business. The design of a business company and sports websites plays a vital role, in growing the business and the values. A good design generally refers to increase in the time users spend on your websites, which directly grows your business.

Cuddihy [Cuddihy, Elisabeth, and Jan H. Spyridakis [9] in his research says that the most basic thing in the interaction design principle is accessibility and usability of the human-computer interaction because it reflects on the user experience, the more the design is discoverable the more the user performs a task quickly.

Safavi [10] proposed that The company's focus on the user interface and user experience as more and more the services and products are being automated, and the machine learning is helping in this matter and the models of machine learning are embedded to our systems. In the modern era the businesses spend less money on the support system, they spend their money on the best research on UX before launching their services or goods, which after then in the future becomes a customer experience framework.

Kiruthika, Jay, Souheil Khaddaj, Darrel Greenhill, and Jarek Francik [11] proposed that The critical thing is the user interface design's useability and accessibility. The user interface of the website requires discoverability and simplicity. And also there are more things that come under the umbrella of user experience in design is security, layouts, images, text, font, speed,

responsiveness, etc. All these terms can be concluded in a single term which is user-friendly design, a company/business can achieve their goals by being the design is user-friendly.

Md. Arman Ahmed, Muhammad Nazrul Islam, Fatima Jannat, and Zinia Sultana [12] have discussed in their paper the various aspects of the intuitive mobile applications for illiterate people and they also emphasized that the app should be developed in native language with minimal text with suitable pictorial and icons so they can easily navigate, the app was designed to look for job opportunities and they tested the app with 40 illiterate people in a laboratory environment. The assessment revealed that the intuitive app with native language is important to develop a app for illiterate people. To reduce the digital divide in Bangladesh, the authors come up with a idea of mobile application illiterate people with an approach of intuitive interface in which the interfaces are designed with a photographic theme with icon images, ICT (Information Communication & Technology) the application is filled with information with a sense of local touch and the application is fully developed in a local native language. The aim was to develop an app to reduce the digital literacy rate in the country to provide the basic concept information of the technology in easy and simpler way. Additionally, the application will also have a functionality for job search for the illiterate and semi-literate people. The purpose of this research to develop an app and realize the digital divide rate of the illiterate people and create job opportunities for the people.

Muhammad Nazrul Islam, Md. Arman Ahmed, and A.K.M. Najmul Islam [13] proposed a suggested paper in which they were first study the modern principles of user interface and designed a mobile application (Chakuri-Bazaar) for illiterate and semi-illiterate people with all the principles in tact in the application. After tested and evaluation the application among the illiterate and semi-illiterate people, find the designed was easy to use and easy to learn.

In this paper the researchers is worked on the HCI principles to develop an mobile application for literate people and illiterate people. They focused on the Human Computer Interaction principles to develop an simple and effective user interface for the illiterate people. The focus is on the user interface so they can come up with something fundamentally good application and will adopt all

the global software engineering standards. The core objective of this paper is to explore the design principles of HCI and implement them in the application of job searching.

Zereh Lalji, Judith Good [14] have discussed the challenges that has been faced by illiterate populations. When designing or developing an mobile application for illiterate people we should need to involve them and ask their opinions in each phase prototype. There consistent involvement would help developers and the end product would be desirable. The primary user should be in partnership in different kinds of investigations of the application.

Iftikhar Ahmed Khan, Syed Sajid Hussain, Syed Zafar Ali Shah, Tassawar Iqbal, and Muhammad Shafi [15] have proposes the website for the illiterate population of KPK province of Pakistan. The website was designed for the illiterate people to find out the relevant jobs with few minimal links. The user interface does not require any human assistant while searching for jobs and the website is designed with a sense of cultural pictures and themes for the easiness and comfort feel for the users. The results suggests that the users find easy to navigate on the website with few clicks and most importantly without any assistance.

Medhi, Indrani, Aman Sagar, and Kentaro Toyama [16] research that among the different type of illiterate people, the illiterates of print which get affected the most from the digital technologies. The author of this paper uses the recommendations from the previous researchers works and use those recommendations of improvements in design principles and interactive interfaces for the illiterate people. The authors of this paper proposed a system “e-learning platform” for the illiterate people living in the remote areas of the different parts of the country. To aware the illiterate people, in the portal they discussed about the farming, agriculture, childcare, weather conditions etc. The purpose of their “e-learning platform” is to empower and aware the illiterate people who are living in the urban areas. The “e-learning platform” will cover the foundation topics of their lifestyle and as said before to realize the knowledge and their limitations, the user interface is designed so simple and easy to use. (It’s all recommended from the past researchers)

Rahman, Asifur, and Akira Fukuda, [17] n this research the authors were aimed to develop the applications using no-text approach, so the illiterate people even naïve users can use the application easily without any assistance. For this purpose, they have researched and collected the information in different slum areas (where majority of the people is illiterate). They used the ethnographic concept, they created two mobile applications to implement the no-text approach and in the applications, they used the designed principles to use the less-textual approach. The applications were so easy to use and simple. The applications they created, one is for job search and other one is generic map for locating the different places in the city. In both the applications the there is no text, only the images and voice technology is used for the different purposes. The reason of this research is to implement the ethnographic applications (with no-text approach) and check the experience of the illiterate users and they found the users were satisfied and required no assistance.



## Similar Application Reviews

### Bykea

Bykea is a mobile application service which is only dedicated to bike (motorcycles) riders. It is quite popular in Pakistan for its easy process application with a simple method of booking a ride. There are other applications for booking a car (vehicle ride) which includes Careem, Uber, InDrive etc. But their main focus only on car bookings, Bykea mainly focus on the bike rides and the target of Bykea services is to capture the middle class and lower-middle class, and most commonly it is used by students and other people who is going somewhere in urgency and in normal scenarios the common people use the public transport. Bykea application user interface is quite simple and the best part they are providing the functionality to user to use the app in the native language Urdu and standard English. Bykea knows their targeted users that's why they provided the user interface to the users in Urdu language so the users who don't have enough knowledge of English can use the application in Urdu language easily. The functionality of Bykea is simple hence when new user installs Bykea application they just need to register through a mobile number forward by an OTP on sim mobile number, there is no functionality to register through an email because the semi-literate or illiterate people don't have usually emails. In the application they use the proper white space along with simple green color which is pleasing to the eye, and they use the proper icons everywhere so the users don't need to read everything they can make the decisions by viewing the icons. And the best part is that whenever they use something is English language, they provided the proper meaning in Urdu language in front of the English language (This is done in specially in the navigation part of the application). For the user who want to use the application in English, they just need to toggle the button in the side bar they will shifted to only English specific screens. The application has simple user interface in Urdu language and not only this along with Urdu language they are using the pictures with the Urdu text so the users who don't have accessibility to read properly they can easily see the pictures and decides the next app. The applications use the less textual approach with minimal screens hence the users don't need to remember anything because everything is straight forward.

## Dukan

Dukan application is the online shopping store where you can buy anything from the local stores. The applications have two access criteria like you can buy anything from the application by registering through mobile number and another portal is that you can register your store on the application and start selling on the Dukan platform. In the Dukan application for the users who want to shop something they just need to register thorough an mobile number, followed by an OTP verification and the application is developed for the common people with the simple friendly colors, they used the blue color (the dark blue color which is used by old Facebook). The functionality of application is straight forward, the layout is divided into columns one for the shop (searching for the shops) and the other column is for the events. For shopping you can add the funds in your wallet through any bank and since the application “Dukan” is new startup they don’t have many stores in the applications and right now they are trying to register the stores to start selling on the platform. For opening a Dukan (online store) in the application you need to provide your all details while registering and you need to verify your profile through proper verification. Dukan application have a concept of that you can create your web store in the application in just 29 seconds, by providing your business name and the web store address and also you can specify your store timings and after pointing out on the map (the location of your store or warehouse) your Dukan (online store) is created in the application. After registering your store now, you can add online payment methods and along with you can add your products in the application and start selling on the platform. Not only this you can track each and everything like the bills, products, the seller can view the orders and make the calculations on the platform.

## Mustakbil Jobs

Mustakbil mobile application is a job portal application where you can create and maintain your profile by adding the contact details along with academic qualification and professional experience. On Mustakbil application you can apply for the jobs/internships by just a single click (if you have already completed your profile) and also you can create your CV from your provided details and also the candidate can upload their CV from the local system. For the new users, they need to register on the application by providing their email and necessary details after registering on the platform they can create the Resume on the platform but before creating the Resume first they need to verify their email. The application design is pretty simple. There is a functionality of searching jobs of their choice and apply on them by just through a single click. The best part of the Mustakbil application is that you just need to create your detailed profile once and then you can apply on the jobs by just hitting a single click. After applying on the jobs users can view the applications they have applied and their response in the notification section. The Mustakbil application also have a functionality of messages so the companies and the candidate can communicate on the platform. The application focus is to provide the platform for the jobseekers of all levels that's why the design is so simple with less text and simple functionalities. Not only this after registering on the applications, but they can also post the jobs and the platform have a functionality of a search functionality by filtering the cities and the domain of job field. The users (jobseekers) have a view of like a newsfeed of seeing the recent job opportunities posted by the companies. There are separate interfaces for the employers and the jobseekers and the only gap (drawback) I found on the application is the excessive use of Google Ads in the feed section where jobseekers is looking and searching for the jobs and after 2-3 jobs there is a Google Ads which is quite annoying and just affecting the user experience.

## Chapter 03

### Requirements Specification

#### 3.1 Functional Requirements

To accomplish this objective, firstly, a conceptual framework was proposed (to the fyp-instructor) based on the findings of the literature survey and a need finding study, while the need findings study was replicated with local daily wagers who were illiterate. Secondly, a cross mobile application with user-intuitive user interface will be developed. To make the interface intuitive for illiterate people, it encompasses voice, icon, pictography, maximum number of texts in native language. In corona virus outbreak many people faced financial losses, many businesses sank, due to the termination of employment, the working class had to face a lot of difficulties. Because of the lockdown situation no one could call in the houses. Many businesses shifted their entire work online, homes had turned into offices, and workers started work from home. We thought should create a mobile application who will work for these daily wagers. Problem statement is we had to pick up the sand, gravel and cemetery workers for household work in local areas. But we did not know where these workers gather and sit, in order to find these laborers, we don't know anything about them. We thought should work on a platform which will work for these laborers.

#### Objective

The aim of application is to connect the users/organizations with the illiterate people (workers, laborer etc.) so that they can connect on a single platform. The application is designed with the perspective of illiterate people and knowing the limitations of the illiterate people, like the application is developed with an approach of less text and the use of images in place of text so the user feels comfortable while navigating in the application. The core objective is to develop a simple and easy to use interface so that everyone can use the application easily, especially the illiterate people. The application will use the standard fonts and colors with the use of simple and common vocabulary and the use of excessive images and icons. The application has a search functionality

which helps the users/organizations to find the labors according to the location wise, on the other side the contractors (labors) will manage their profile portfolio by uploading their previous work videos/pictures and most importantly their preference of working location along with their availability and working hours. The organizations can post their requirements and the contractors will reach them and the organizations can review the contractor's profile and will hire them accordingly.

## **End Result**

The users can register their selves using email or mobile number and through proper validation and authentication process. After register/login into the application the user can use the search functionality to search the labors by location wise. The search functionality will enable users/organizations to search for the labors in a particular location. The search functionality not only limit to the searching location but they can also search for the profiles of labors/organizations. Not only the users, but the organization also register their selves and maintain their profile application. And the labors the most important part of the application can register their selves and maintain their proper profile portfolio by adding their location and contact details with the functionality of maintaining their portfolio by uploading their previous work. The application will have a functionality of hiring the labors along with this, there is a concept of providing feedback after the contract is completed, it is equally important for both the users and contractors (laborers). Because of this concept the laborers have an opportunity to stand out as compared to other profiles (when they have positive reviews) and users can see these reviews on the laborers profile and it will be helpful when they are hiring someone.

## **Application Components Requirements**

### **Login / register & forget**

When user first open the application, he will be on the main login screen, users can login through email or mobile number along with password but before login users have to register their selves and set up their profiles by uploading picture and adding other contact details, similarly the

companies/organizations can also register their selves and posts jobs and hire the people from the platform. The login is simple and according to the standards like the login / register functionality of popular apps like Facebook, LinkedIn etc. And somehow if the user forgets the password the application has a functionality to recover the account by clicking on forgetting a password and then the user will be able to recover the account through a verification code at mail. As mentioned, that the main (first) screen would be the login screen and if the user is using the application for the first time the user will see the option of register and only after registering the user will be able to use the application. And if the user wants to signoff from the application, then the application has a functionality of logout like any other social media apps. When the user wants to logout from the application the user will hit the logout button and the application will show the user a popup alert asking for the confirmation of logout and based on the user action it will make action and after the logout the user will be back to login screen.

### **Main (job feeds)**

After signing-in in the application the first screen the user will see the new job opportunities posted by the different organizations and the users can view those in the format of feed (like newsfeed of social media apps) and the format will be the organization picture along with the job title, company name and job description and for the full details users needs to click on the job of their interest to look for the complete details and see what they are looking for and if the user is interested in that job the user can apply just through a single click. Not only this the user will be enabled to see how many people (applicants) applied before and if the user has anything to add then the application will have a functionality to add comments in real-time on the post. To apply for any contract/job the user doesn't need to hustle much it will be done in just few clicks. For instance, if some company looking for laborers and the contractor wants to apply on that job then it just has to click on that button and it will directly send them an email. Not only this the users will be able to contact any contractor / laborers through their profile by searching their profile or by searching the area location the user will find the workers. The users can see the contact details like the mobile number for call/messages and WhatsApp number and email (optional). If the user is looking for laborers / contractors, then they have two choices like the user can post their requirements and hire the labors people from the platform (the contractors/laborers will apply on the user post through application)

and the other option is that by filtering and searching by location and the user will find the profiles and then the user will contact them directly.

### **Filter & Search Feature**

For the ease of users, the application will have functionalities of filter and search. On the main page (the first main page when user logged-in to the application) the user will see the filter and search icons on the top. The App bar will be only dedicated to the filter and search functionality. The filter has some predefined locations names (right now it will be only for the towns and areas of Karachi city) in near future the filter will be worked for the different cities. The users can filter the locations and look for the companies/laborers/contractors and the users can filter the cities/areas/towns and the users will see the profiles from the nearest filter. The search functionality will also facilitate the users to not only search for the laborers or contractors but also the users can search for the particular profile, particular organization and particular location.

### **Easy apply & Applicants applied**

As users and organizations can post the jobs as per the needs and the contractors / laborers can apply on them easily through a single click. The concept of single is simply straight forward, its work in a way that if someone posted a job and then the laborers can apply them by clicking on the job and the user (labor) will see the button of ‘easy apply’ after clicking on this it will redirect on the mail box with predefined message and the user don’t need to much they just need to attach their portfolio or resume. All the process will be straight forward the user (the applicant) don’t need to do much, it will be done with few clicks and on top of that there would be a functionality for the applicants (contractors/laborers) can see the number of applicants who applied on that job before. The focus is to make the process as easy as possible, so the user doesn’t need to use the complexity of the application.

### **Add comments & posting scenarios**

When the user (laborers/contractors) land on the page where the user is interested in applying, that page will have a option to add comments on that post. The user can also view the previous comments that have been posted by other users. The comments will be added in real-time like other social media platforms. In comments the username and user picture will be appear along with the actual comment. Posting a job is another exciting and simple functionality for the users. Users/companies can post the job on the platform, and it will appear in the job feed on spot (within that time). For posting a job there are some requirements that they need to provide while posting a job like job title number of persons, description and the deadline for applying on that job post.

### **Profile**

The profile page will be developed directly when the user is firstly registering on the application but when registering on the application there are some optional things that the user can add after the account creation but there are some necessary things like the name email/contact number, and password. The user can maintain the profile by providing the display picture along with necessary contact details. The contact details are essential so the other party (searcher) can search the profile through area wise and contact through the profile. Posting a job will be another great feature of our application and the user who needs laborers can post the requirements of work along with the prices and the days. The user will be more powerful that the user can add the deadline for that post for applying and let say if the user added deadline of 2 days and he get the right laborers and contractors within hour so he can turn off the post and the post will be disappeared from the job feed from all the users.

### **Navigation in the application**

The application will have a bottom navigation bar and the top app bar for navigating through the different parts of the application. In the app bar (on the top) there are two main components of the application which includes the filter and search functionality. The app bar will have only two



sections which is the core essential functionality of the application from which the user can go and find for the right choice of their interest. In the bottom navigation bar, the different components of the application will be accessible which includes user/company profile, the search, main feed section (main page), post (+ icon to write new posts) and the logout. The bottom navigation bar will be developed with the active icons so the users can easily navigate through the application for that purpose the icons will be used.

### **Focus**

The application will be user-centered and will handle all the user requirements with the perspective of ease of use and also the use of simple vocabulary for the illiterate and semi-literate people. The application will be designed with all the quality standards and best practices of software engineering. All the user requirements will be fulfilled in the light of modern design principles and the application will adhere all the user changes and will implement all these according to the research of different papers and applications. The main focus of application is the illiterate and semi-literate people, and the developers will be aware about the limitations of unskilled workers and will develop a application according to their level of knowledge.

### **Essentiality**

The application design (user interface) is the core of this project. The application should be easy to use with the ethnographic and proper guide approach and with the use of less English vocabulary (less textual approach) and in the application will use the of pictures and icons so that they (literate laborers) can navigate easily. The design of application should not be complex so the laborers/contactors can use the application easily.

### **Testing**

There should be several tests held at the time of completion of each component through the unit testing and integrated testing techniques, the application will follow the functional testing strategies and will need to clear all the five of functional testing. The test for each component will be held and if the error arises then it will be resolved at that particular moment when it occurs.

Also, the API, User Interface testing will be tested to check the flow of application and the working of application as a whole.

### **3.2 Non-Functional Requirements**

In nonfunctional requirements we will check the performance parameters of the application software which include the portability, reliability, the main objective, the maintainability part. The application is developed with a business logic rules and with a proper process of authentication and validation (when user tried to access the application). The authorization includes the logic behind, when the user accesses the application. As mentioned earlier, the application has a simplest of user interface to handle the lay man (common illiterate people) and the user interface screens will be developed with all these things in mind.

#### **Objective**

The application will work in a way that user/organization can hire the labors or contractors through the application by using the search functionality and the application will have the concept of hiring and the user/organization can hire them according to their need requirements. There are two methods of hiring like one on the fixed total cost and the other on the concept of daily wage according to the market price. The laborers can go to the work destination and decides what it costs and how many days the work will take and then they can add in the application and the contract will be started after the contract is completed the user will have a option of leaving a feedback for the laborers about the work that they have done.

#### **End Result**

Starting with the user interface (screens) as we are preparing the platform for the semi-literate or literate persons, the user interface will be simple and straight forward with a touch of user-friendliness. The application will use proper white space with simple color (the application will not have any fancy font, layout or any complex animation). The main focus is to use the simple fonts and colors that are easily readable and pleasing to the eye. The navigations will be through

the use of icons with text links with a good font size and the components of applications will have a similar theme throughout the application.

### **Focus**

The core focus of application is to fulfill the user expectations and respect their knowledge and limitations. The developers are well aware of this fact and know their limitations of usage of technology. From different research studies, we get the idea that there is a clear a gap of technology for the illiterate and semi-literate people. Our main focus is to handle all these users who have small or no knowledge regarding mobile applications. Our mobile application will satisfy all the needs of these users and they will use our application without any assistance or pre-knowledge.

### **Essentiality**

Application has all the necessary and functional things, and they are mandatory for our application but still there are some things that we might add in the future but for now, all the things that we mentioned in the modules are mandatory for our application. In future we will try to add the functionality of freelance marketplace, like we have many platforms for skilled workers, but we ignored the large portion of the people but in future we will try to incorporate them in our platform. The aim will be to enhance the application and currently it is catering only the labors specifically related to construction work and in future we desire, and we will categorize the fields and add the majority of the fields for literate and semi-literate people.

### **Origin Type**

The application will be created using Google Flutter technology and Google Firebase will be used as a Database and Dart will be used as a official programming language with open source packages. The application will be developed with all the modern design principles along with the quality standards and best practices of software engineering. The origin of our application is local business model that our application will be worked as a solution to that problem.

## Reliability

**Title:** The Application Reliability

**Description:** The reliability of the application is that it would act as desire, the user action will perform according to the user actions. The user can post the request easily without any delay and have the applicant right to apply on these through single click. The searchers and the filter features should be enabled when user enter a single character. The searchers will show the 99% of the correct results and if there is no result related to search then it would show some predefined search results.

## Availability

**Title:** Availability and Connection

**Description:** The application will be available all the time (not considering the internet connection for using the application the internet connection is must). The application will not work when there is no internet, as the application will be there 97% of the time and we wish it would be there 100% of the time. The internet is necessary for the application in order the application can communicate with the database.

## Maintainability

**Title:** Application maintainability and scalability

**Description:** The application is created with all the best practices of software engineering and all the quality standards defined by the international standards and the application will be extendable in the future and will be easy to maintain if something bad happens. The application can go to the next version with the old features in the working monitoring and will work according to the plan structure. The application will be tested through different tests so it will adhere all the modern updating in the application.

## Portability

**Title:** The Application Portability

**Description:** The mobile application will be portable with both the operating systems android OS and IOS, and it will be run with real ease with the minimum requirements. The application will run smoothly on the modern versions of android and iOS and will be compatible to all the old devices (the updated android) with the minimum system (mobile) requirements. The goal is to develop a platform where people can connect with the labors and contractors and hire them according to the need.

### 3.3: System Configuration

The app will run smoothly run on the devices with 1.8 GHz or more with minimum requirements of 2GB space for ram and 8gb Rom space and the app will be compatible with the latest android and iOS updates.

Processor: 1.8 GHz or more

Ram: 2GB or more

Rom: 8GB or more

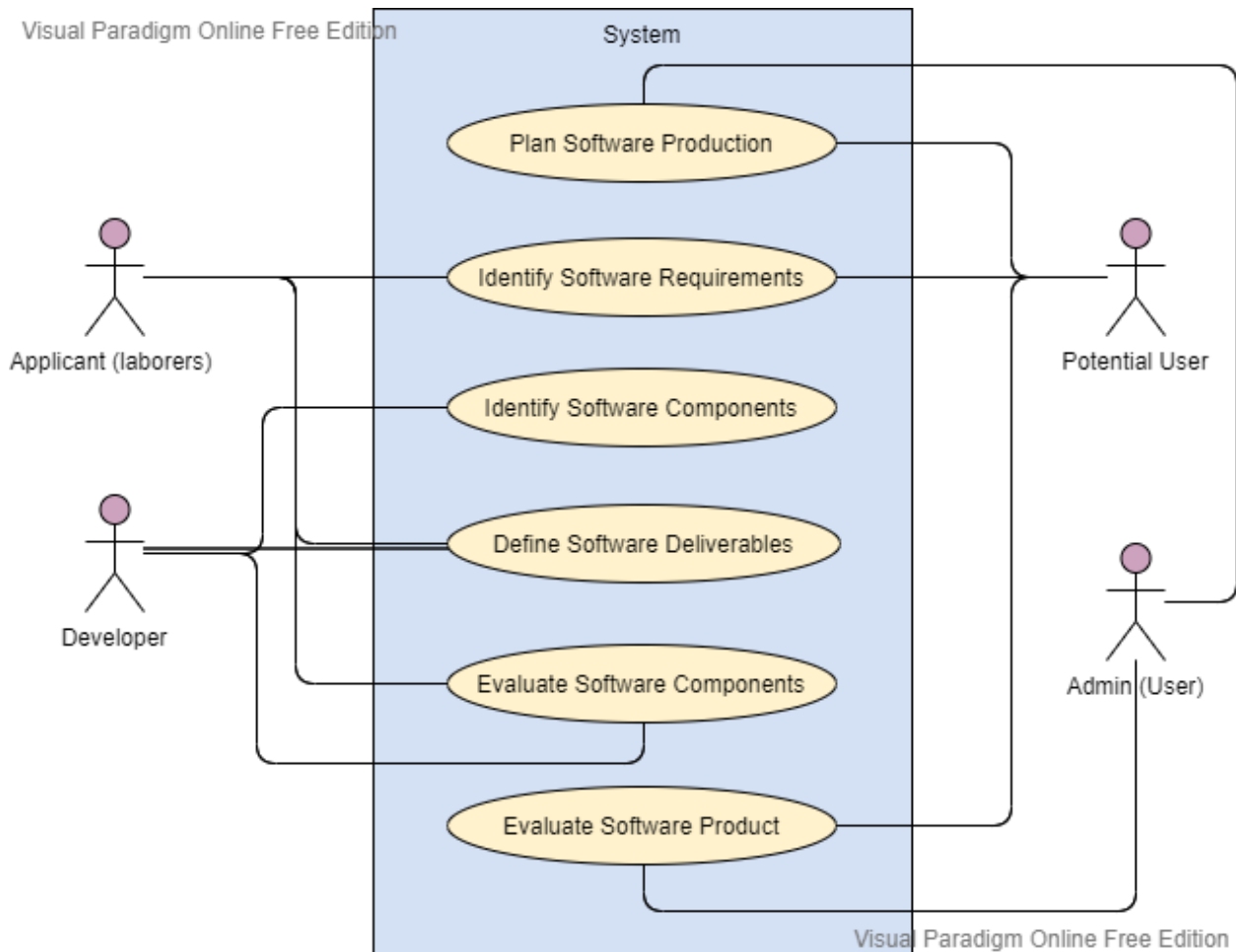
Operating Systems: Android & iOS

### 3.4 Use Cases

In the use-case scenarios and diagrams we tried to convey the basic idea of the application flow and how the system will work, in which several components of the application are involved. The use cases illustrate the features that are essential in controlling the data flow of the application software, the use cases scenarios and diagrams are described below.

#### Use-Case: 01

##### High Level Overview



### Figure 3.1: High Level Overview

#### Use Case: 02

**Use Case UC02:** Posting the work requirements

**Primary Actor:** The Applicant (the laborers/contractors)

**Secondary Actor:** The user (the one who is looking for the laborers)

#### Pre-Condition:

The applicant must login into the application.

The applicant must complete his profile, so the user can complete

The applicant must need to incorporate the user requirements.

The job must be posted by the user who is looking for workers.

#### Post-Condition:

Server must submit the applicant request through mail server.

The applicant must fulfill the user requirements.

The applicant data will be stored in the database.

The comments from the applicants must be added in real time.

#### Main Success Scenarios:

The applicant request should be forwarded to the next phase.

The user can turn off the applicants' requests when the user is satisfied or find someone.

The user can review the applicant request and find the right choice for their work.

The decision will be made from the several to recent searches from the user.

Their would-be deadline from the user to apply on that job post.

The applicant can directly apply on the post through the search or filter feature.

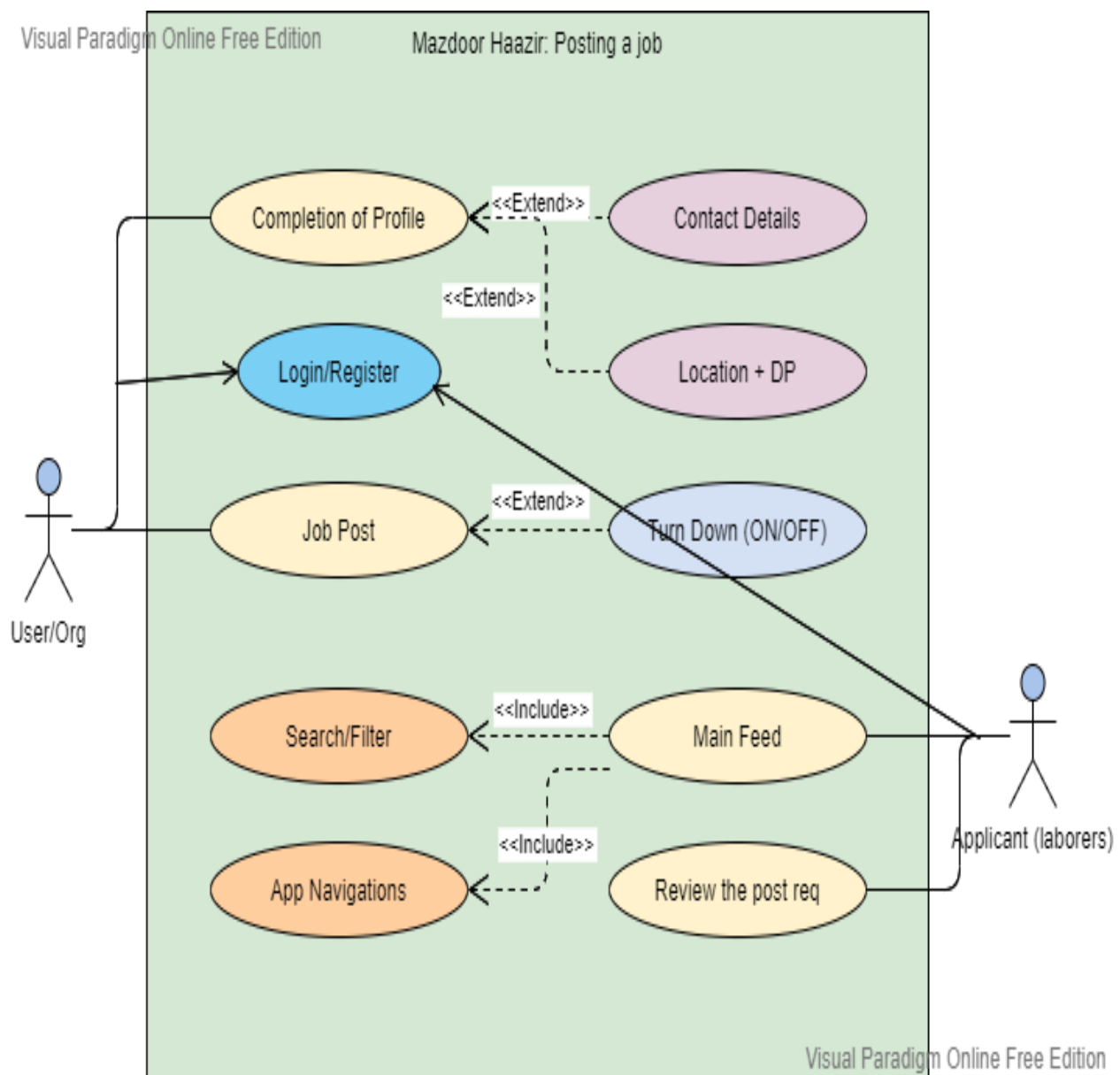
#### Exceptions:

If the applicant applied on the job and the user is satisfied with the requests and find someone, he can opt out his/her request.

The post will immediately disappear from the application when the use is turn off the request.

## Use-Case: 02

Following pictorial view showing the job posting use case.





## Figure 3.2: Posting a Job Use Case

### Use Case: 03

#### Use Case UC03: Hiring Concept

**Primary Actor:** The Applicant (the laborers/contractors one's who is looking for contract job)

**Secondary Actor:** The user (the one who is interested in hiring)

#### Pre-Condition:

The applicant must login into the application.

The applicant (laborers/contractors) must complete their profile so the users can contact them through the contact details.

The user should need to contact them before proceedings into the details.

The job must be posted by the user who is looking for workers along with the location and the number of laborers he is looking for.

#### Post-Condition:

The user can turn down the post if something goes wrong or he changed his requirements.

The user's needs to hire someone through the mutual agreement or through fixed rates.

The applicant can apply on the job once and see the number of applicants who applied before.

#### Main Success Scenarios:

The applicant and the user party can communicate and comes to the point of business.

The user can review the applicant request and find the right choice for their work.

The user can also search for the location wise if he wants to someone in quick.

The user can turn off the applicants' requests when the user is satisfied or find someone.

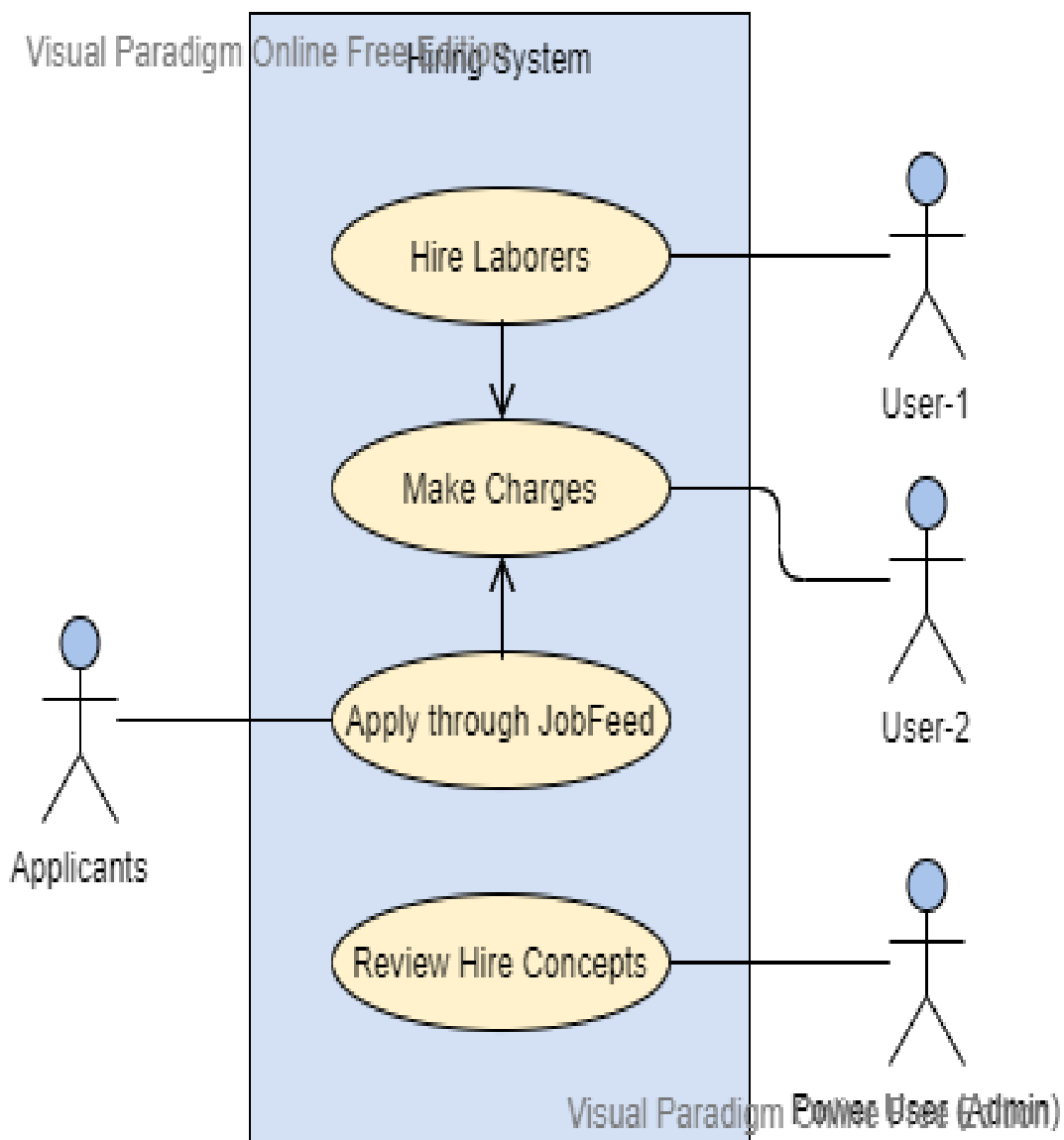
**Exceptions:**

The applicants if does not agree to the price and then the contract only will be cancelled through mutually agreement.

The daily wages should be set according to the market prices and cannot be changed if someone hires on the concept of daily wage.

**Use-Case: 03**

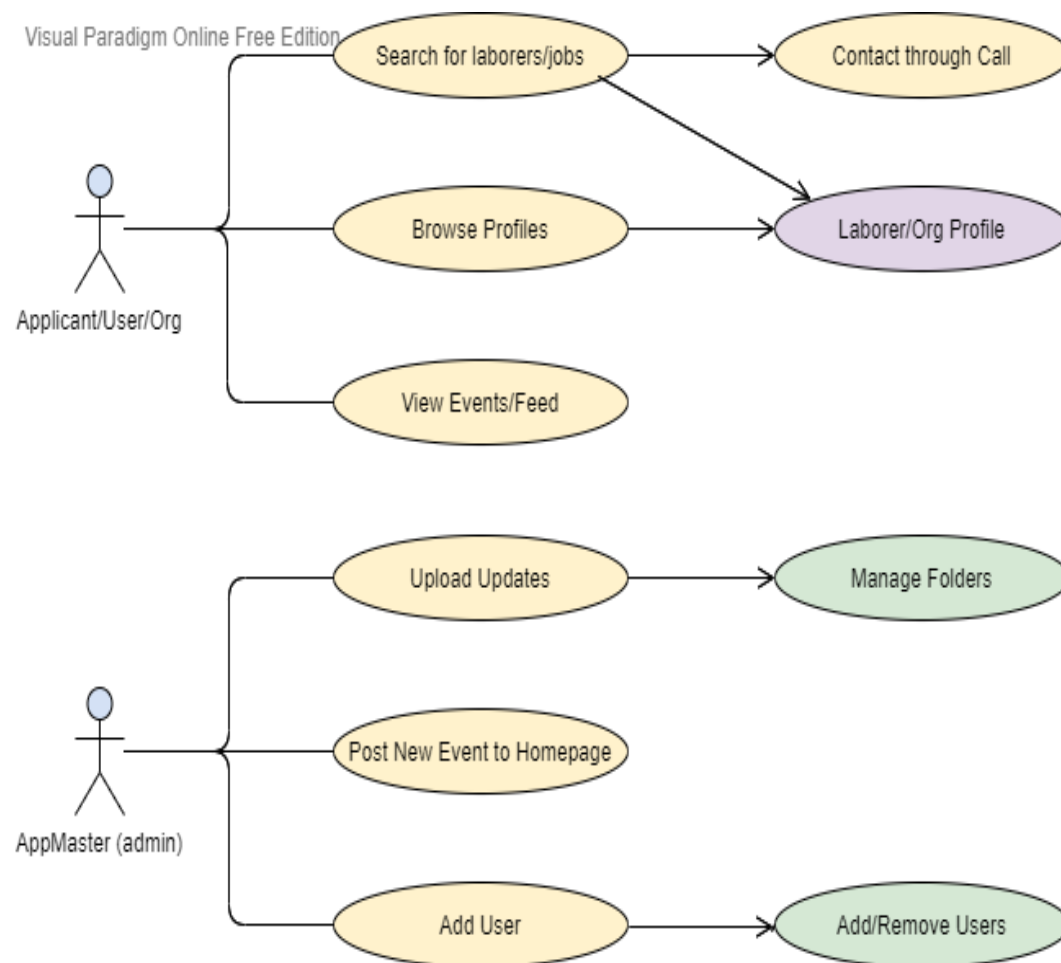
Following pictorial view showing the job posting use case.



**Figure 3.3: Posting a Hiring Concept Use Case.**

**Use-Case: 04**

Following is the pictorial view of accessing the information.



**Figure 3.4: Accessing the Application Software**

Source: <https://online.visual-paradigm.com/>

## Chapter 04

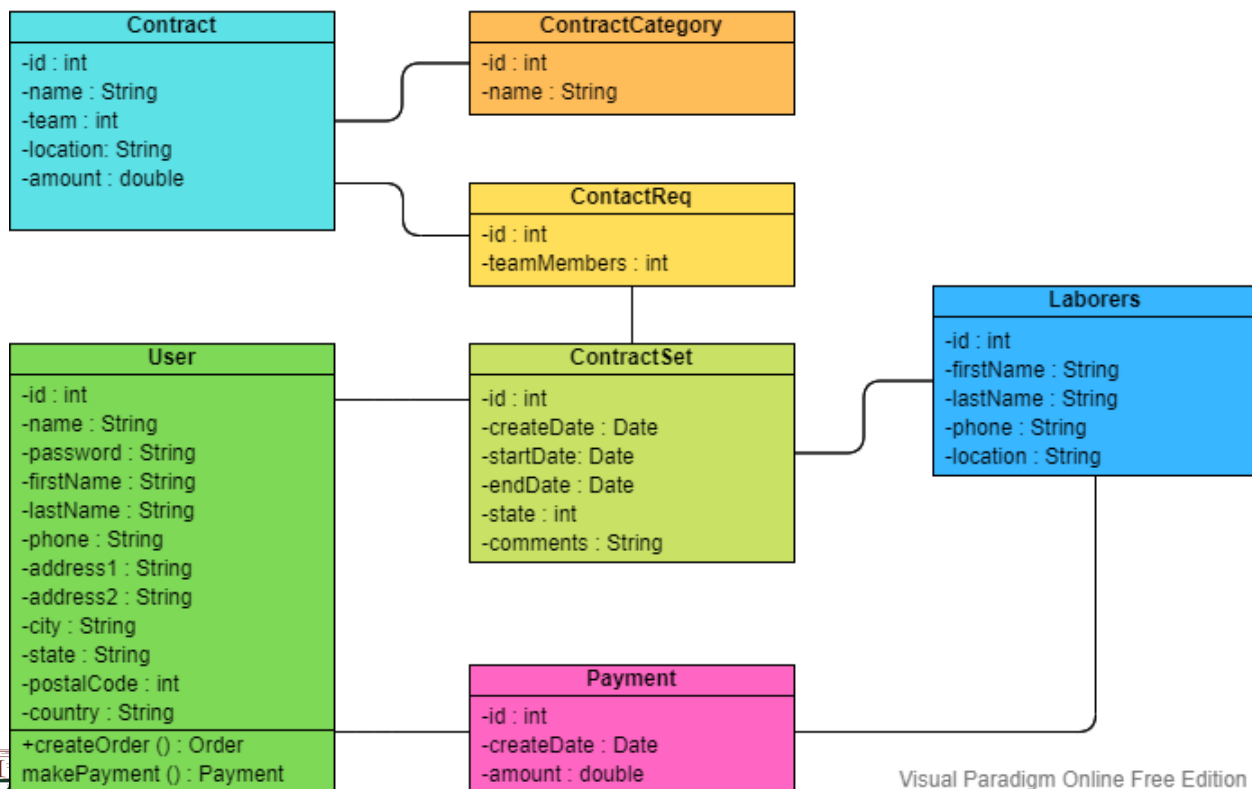
### System Design

#### Class Diagram

This Entity Relationship (ER) Diagram shows the model working of MazdoorHaazir mobile application. The entity relationship diagram represents all the optical important of database tables as well as the relations between the id, Name, Profile Type, Team Members, Phone Number, Email and Location etc. It uses the structure data for defining the relationship between the structured data groups of functionalities.

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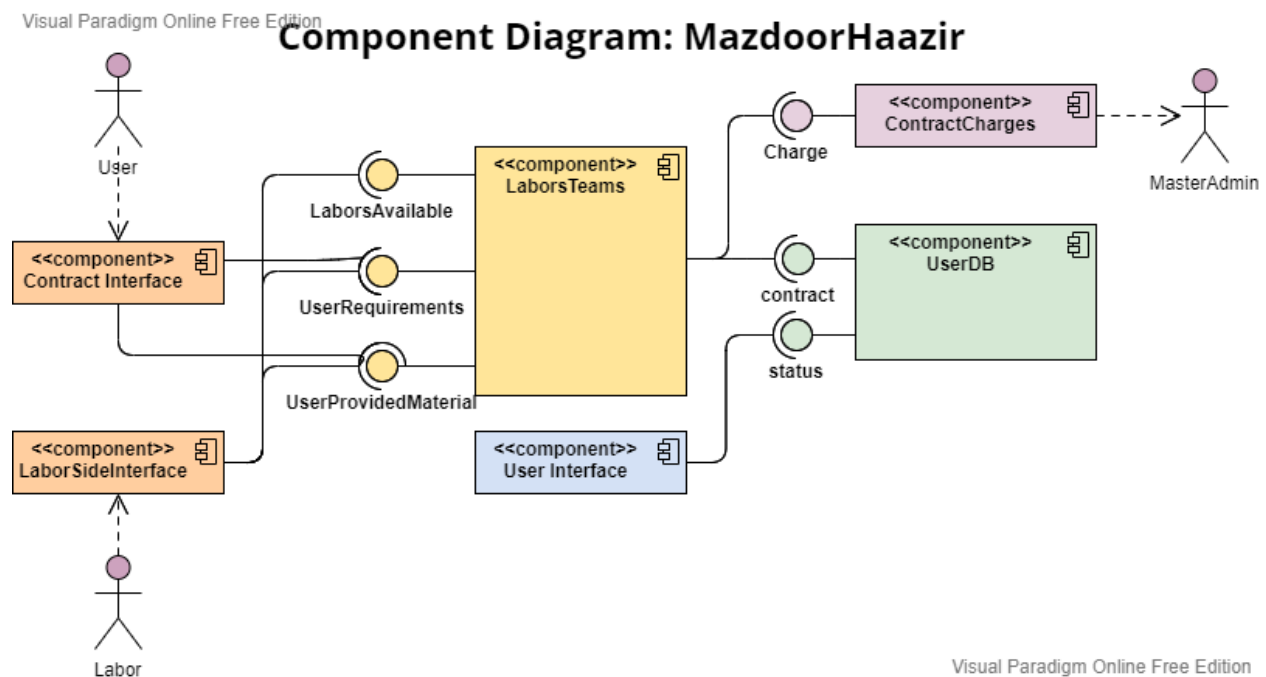
#### Class Diagram: MazdoorHaazir



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## Component Diagram

This Entity Relationship (ER) Diagram shows the model working of MazdoorHaazir mobile application. The entity relationship diagram represents all the optical important of database tables as well as the relations between the id, Name, Profile Type, Team Members, Phone Number, Email and Location etc. It uses the structure data for defining the relationship between the structured data groups of functionalities.

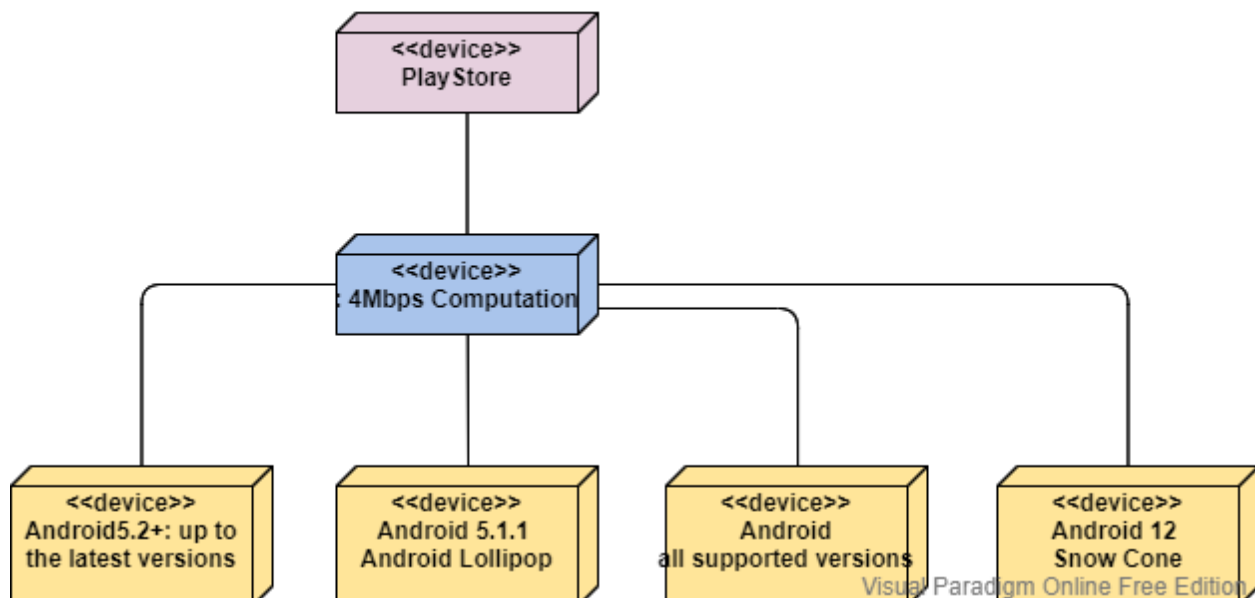


## Deployment Diagram

This Entity Relationship (ER) Diagram shows the model working of MazdoorHaazir mobile application. The entity relationship diagram represents all the optical important of database tables as well as the relations between the id, Name, Profile Type, Team Members, Phone Number, Email and Location etc. It uses the structure data for defining the relationship between the structured data groups of functionalities.

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### Deployment Diagram: MazdoorHaazir



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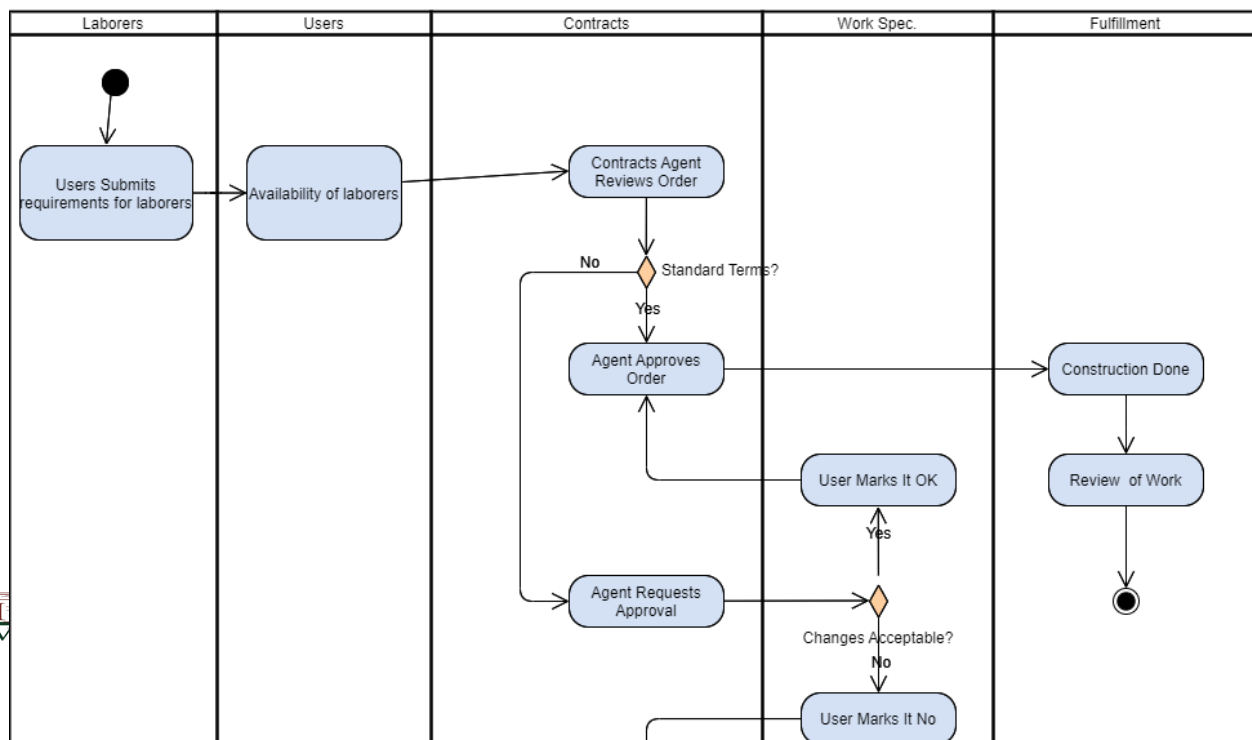
## Use Case Diagram

This Entity Relationship (ER) Diagram shows the model working of MazdoorHaazir mobile application. The entity relationship diagram represents all the optical important of database tables as well as the relations between the id, Name, Profile Type, Team Members, Phone Number, Email and Location etc. It uses the structure data for defining the relationship between the structured data groups of functionalities.

## Activity Diagram

This Entity Relationship (ER) Diagram shows the model working of MazdoorHaazir mobile application. The entity relationship diagram represents all the optical important of database tables as well as the relations between the id, Name, Profile Type, Team Members, Phone Number, Email and Location etc. It uses the structure data for defining the relationship between the structured data groups of functionalities.

### Activity Diagram: MazdoorHaazir

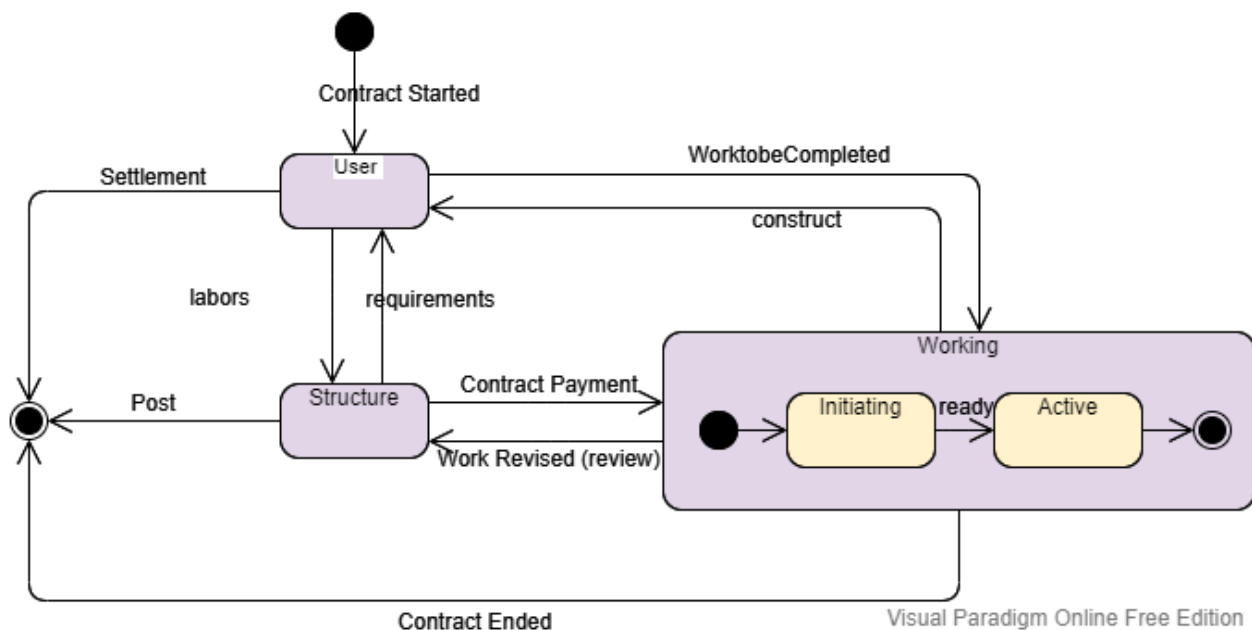


## State Machine Diagram

This Entity Relationship (ER) Diagram shows the model working of MazdoorHaazir mobile application. The entity relationship diagram represents all the optical important of database tables as well as the relations between the id, Name, Profile Type, Team Members, Phone Number, Email and Location etc. It uses the structure data for defining the relationship between the structured data groups of functionalities.

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### State Machine Diagram: MazdoorHaazir



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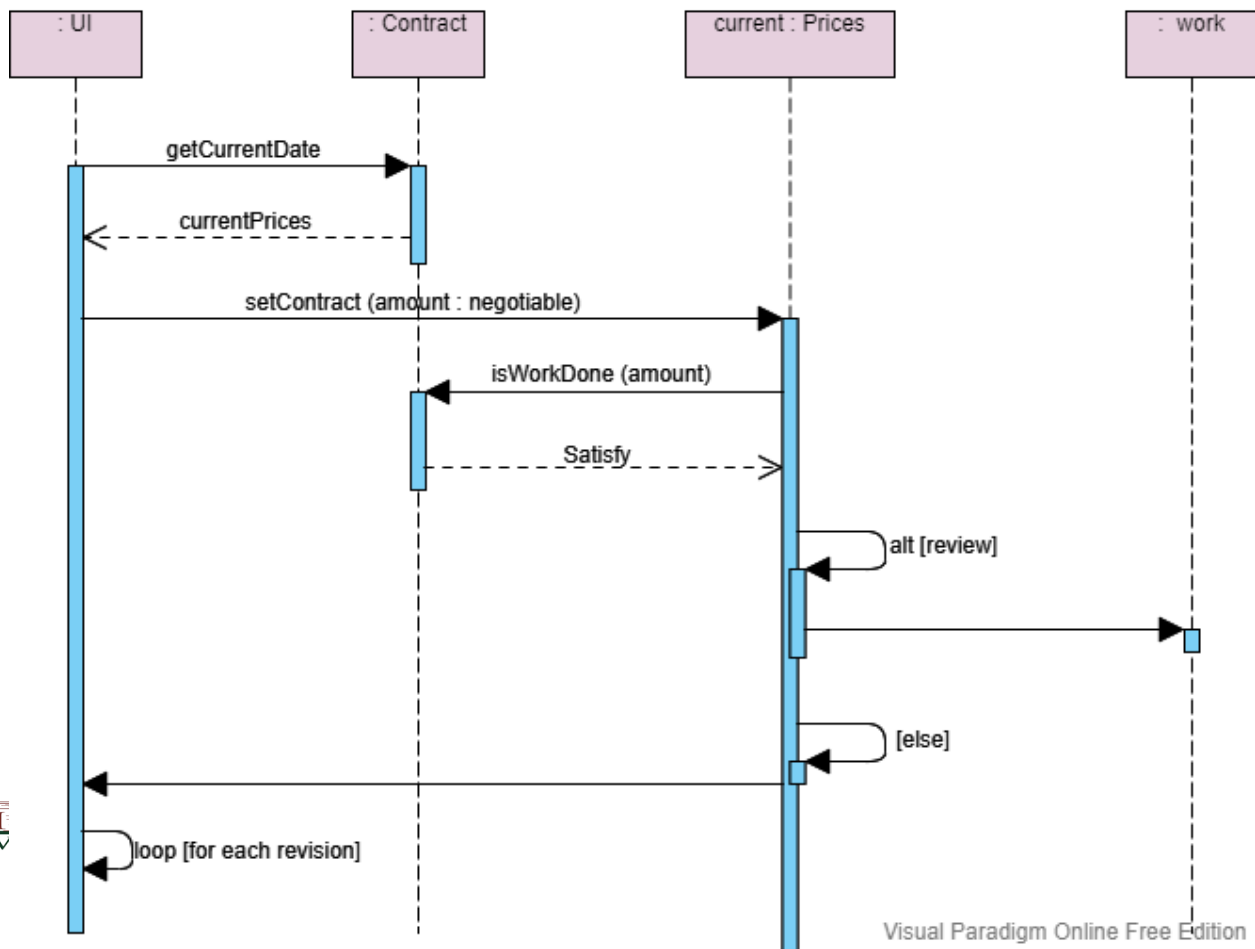


## Sequence Diagrams

This Entity Relationship (ER) Diagram shows the model working of MazdoorHaazir mobile application. The entity relationship diagram represents all the optical important of database tables as well as the relations between the id, Name, Profile Type, Team Members, Phone Number, Email and Location etc. It uses the structure data for defining the relationship between the structured data groups of functionalities.

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### Sequence Diagram: MazdoorHaazir



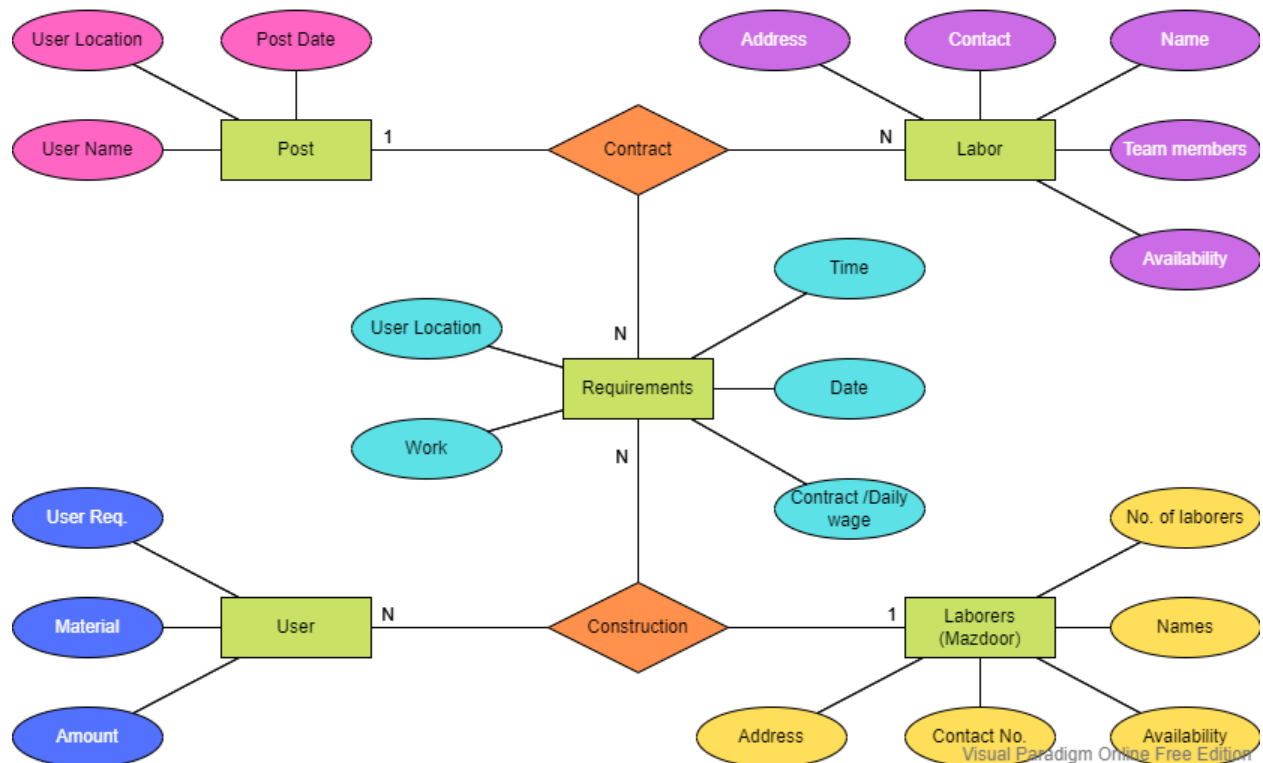
Visual Paradigm Online Free Edition

## Entity Relationship Diagram

This Entity Relationship (ER) Diagram shows the model working of MazdoorHaazir mobile application. The entity relationship diagram represents all the optical important of database tables as well as the relations between the id, Name, Profile Type, Team Members, Phone Number, Email and Location etc. It uses the structure data for defining the relationship between the structured data groups of functionalities.

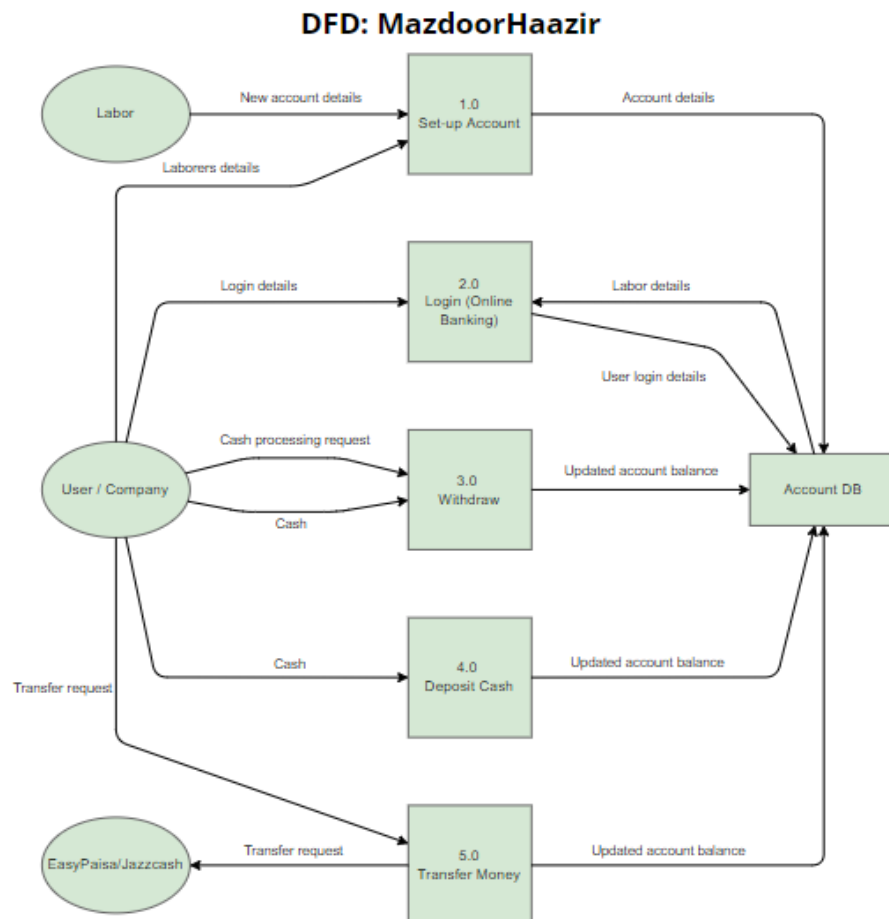
Visual Paradigm Online Free Edition

ERD: MazdoorHaazir



## Data Flow Diagram

This Entity Relationship (ER) Diagram shows the model working of MazdoorHaazir mobile application. The entity relationship diagram represents all the optical important of database tables as well as the relations between the id, Name, Profile Type, Team Members, Phone Number, Email and Location etc. It uses the structure data for defining the relationship between the structured data groups of functionalities.



#### **4.11.1 EXTERNAL ENTITY**

External entities are on the outside of system or process working of MazdoorHaazir mobile application which gets the data from the structured system. They also send the data to the structured system. They are also called the sources, terminators, actors as well as sinks. An external entity, they are also the sources of information as well as destination of information. They are sited on the edges of the diagram.

#### **4.11.2 PROCESS**

It is a procedure or plan which operate or handle the data as well as its flow through taking, changing as well as constructing the next data. The process will do this by using logic as well as performing the computation to classify the data as well as change its flow of the direction. Processes will normally begin from the top left of the dataflow diagram finish on the bottom right of the dataflow diagram.

#### **4.11.3 DATA STORE**

Data store is used for holding the details to use. For example, the file is staying to be prepared. Data input flows by the process and then the data stores. Data output flows out from the data store and then by the process.

#### **4.11.4 DATA FLOW**

Data flow is avenue the information of system which is taken from the external entities by the processes and then the data stores. By using the labels as well as arrows, the dataflow diagram can display us the indication of the dataflow. We must follow the 4 thumb rules to make a valid dataflow diagram before we start the mapping dataflow diagrams.

### Order flow of the mobile application

- User will create job
- Labor will apply to the job on applying to job
- User will get notification
- User will accept or reject the application
- On accepting the application, labor will get notification
- On accepting the application, job will move to accepted state
- On rejecting the application, job will move to rejected list

## Chapter 05

### System Implementation

#### 5.1 Project Architecture

The architecture for this project consists of:

##### 5.1.1 Labor Profile

- **Input:** Labor Name, Labor Contact, Team members, Location, Availability
- **Read** user input for the labor profile specification
- **Validate** user inputs; if valid, proceed
- **Establish** connection to database
- **Store** the user or laborers profile data in database

This page considers various types of user input, including text, numbers, and image files. Users are able to create their profile and manage their profile and users have a functionality to add the post to the platform and labors will see them on their application interfaces.

MHP									
<a href="#">My Profile</a> <a href="#">Dashboard</a> <a href="#">Profiles</a> <a href="#">Categories</a> <a href="#">Manage Admins</a> <a href="#">Reviews</a> <a href="#">Live Site</a> <a href="#">Logout</a>									
Laborers Profiles									
<a href="#">Add New Profile</a> <a href="#">Add New Category</a> <a href="#">Add New Admin</a> <a href="#">Approve Reviews</a>									
#	Title	Category	Date & Time	Author	Banner	Comments	Action		Live Preview
1	Umar Akmal	Homes	June 02, 20..	danish..		2 1	<a href="#">Edit</a>	<a href="#">Delete</a>	<a href="#">Live Preview</a>
2	Ahmed Shahzad	Building..	June 02, 20..	danish..		3 1	<a href="#">Edit</a>	<a href="#">Delete</a>	<a href="#">Live Preview</a>
3	Haris Sohail	Homes	June 02, 20..	danish..		2	<a href="#">Edit</a>	<a href="#">Delete</a>	<a href="#">Live Preview</a>
4	Shan Masood	Shops	June 02, 20..	danish..		2	<a href="#">Edit</a>	<a href="#">Delete</a>	<a href="#">Live Preview</a>
5	Junaid Khan	Homes	June 02, 20..	danish..		1 1	<a href="#">Edit</a>	<a href="#">Delete</a>	<a href="#">Live Preview</a>
6	Yasir Shah	Homes	June 02, 20..	danish..		2 2	<a href="#">Edit</a>	<a href="#">Delete</a>	<a href="#">Live Preview</a>
7	Azhar Ali	Homes	June 07, 20..	Danish..			<a href="#">Edit</a>	<a href="#">Delete</a>	<a href="#">Live Preview</a>

### 5.1.2 Customer Registration Page

This page has the name, email, profile picture as well as password. These all attributes are design for the creating for profile but importantly user/labor have to separately entered the details to register their profile for the view on the application. This information will help the user to hire/connect with the labors through their profile data.

### Sign Up

User Name

Email

Password

Confirm Password

SIGN UP

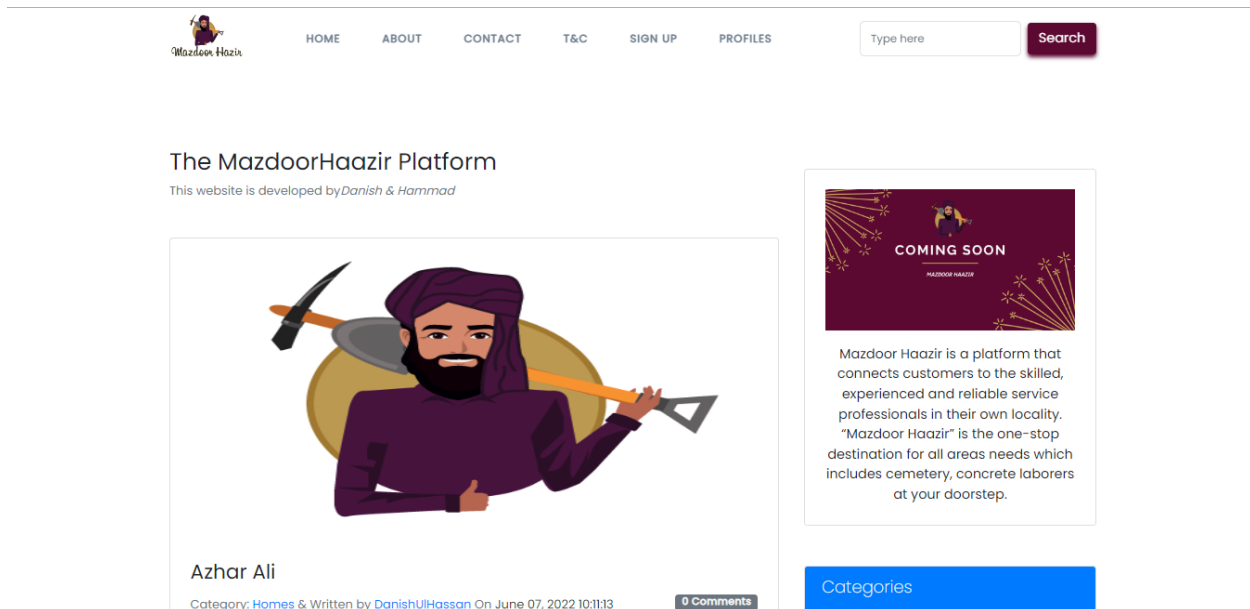
### One of us ?

MazdoorHaazir Platform, to connect with top profiles of laborers.

SIGN IN

### 5.1.3 Laborers Profile Page

This page has the mail as well as password fields. User will write the mail and password which they have given in the time of registration. The email as well as password which he/she gave matched with the stored data in the database so they can access with their account.



### 5.1.4 User Interface (GUI)

This is the Graphical user interface of the profile creation which contains the user profile picture and information of labor which has its name, location, contact number and number of team members.





**MHP** Hire **online** labours with few clicks

## Contract your | with MazdoorHaazir

"Mazdoor Haazir" is a platform that connects customers to the skilled, experienced and reliable service professionals in their own locality. "Mazdoor Haazir" is the one-stop destination for all areas needs which includes cemetery, concrete laborers at your doorstep.

[Hire Labour Team](#)



### About Our Story

Start finding labours with **MazdoorHaazir**, we provide you the experienced labour teams at your doorstep.

Mazdoor Haazir is a platform that connects customers to the skilled, experienced and reliable service professionals in their own locality. "Mazdoor Haazir" is the one-stop destination for all areas needs which includes cemetery, concrete laborers at your doorstep.

- ☒ Search your locality
- ☒ View the profile
- ☒ Hire the labourers
- ☒ Share your experience

[Contact Us >](#)

### 5.1.5 Laborers Profile Section

This section will contain the laborers profile that is selected by the user this pic will show in this section so that the system can view the profile and contact them.

### 5.1.6 Job Post Section

This section will allow the users to post their job requirements and this job will be appeared to the laborers. Labors will be able to apply on these job posts according to the criteria set by the user.

MHP
My Profile
Dashboard
Profiles
Categories
Manage Admins
Reviews
Live Site
Logout

Dashboard
Add New Profile
Add New Category
Add New Admin
Approve Reviews

Profiles  
7

Categories  
4

Admins  
2

Reviews  
17

### Top Profiles

No.	Title	Date & Time	Author	Comments	Details
1	Azhar Ali	June 07, 2022 10:11:13	DanishUllHassan		<a href="#">Preview</a>
2	Yasir Shah	June 02, 2022 17:15:33	danishulhassan	2	<a href="#">Preview</a>
3	Junaid Khan	June 02, 2022 17:15:16	danishulhassan	1	<a href="#">Preview</a>
4	Shan Masood	June 02, 2022 17:14:50	danishulhassan	2	<a href="#">Preview</a>
5	Haris Sohail	June 02, 2022 17:14:25	danishulhassan	2	<a href="#">Preview</a>

### 5.1.7 Logo

The logo of our project is a character which holds the tools which help him in construction work and also our project title is also their “MazdoorHaazir”. It is designed in the photoshop.



### 5.1.8 Admin Panel

This section will be managed by the admins of the “MazdoorHaazir”. By the admin, the profiles, jobs or other information can be updated. All the application/website data will be handled by the admin. This section will allow these operations.

**MHP** My Profile Dashboard Profiles Categories Manage Admins Reviews Live Site Logout

**Dashboard**

Add New Profile Add New Category Add New Admin Approve Reviews

**Profiles** 7

**Categories** 4

**Admins** 2

**Reviews** 17

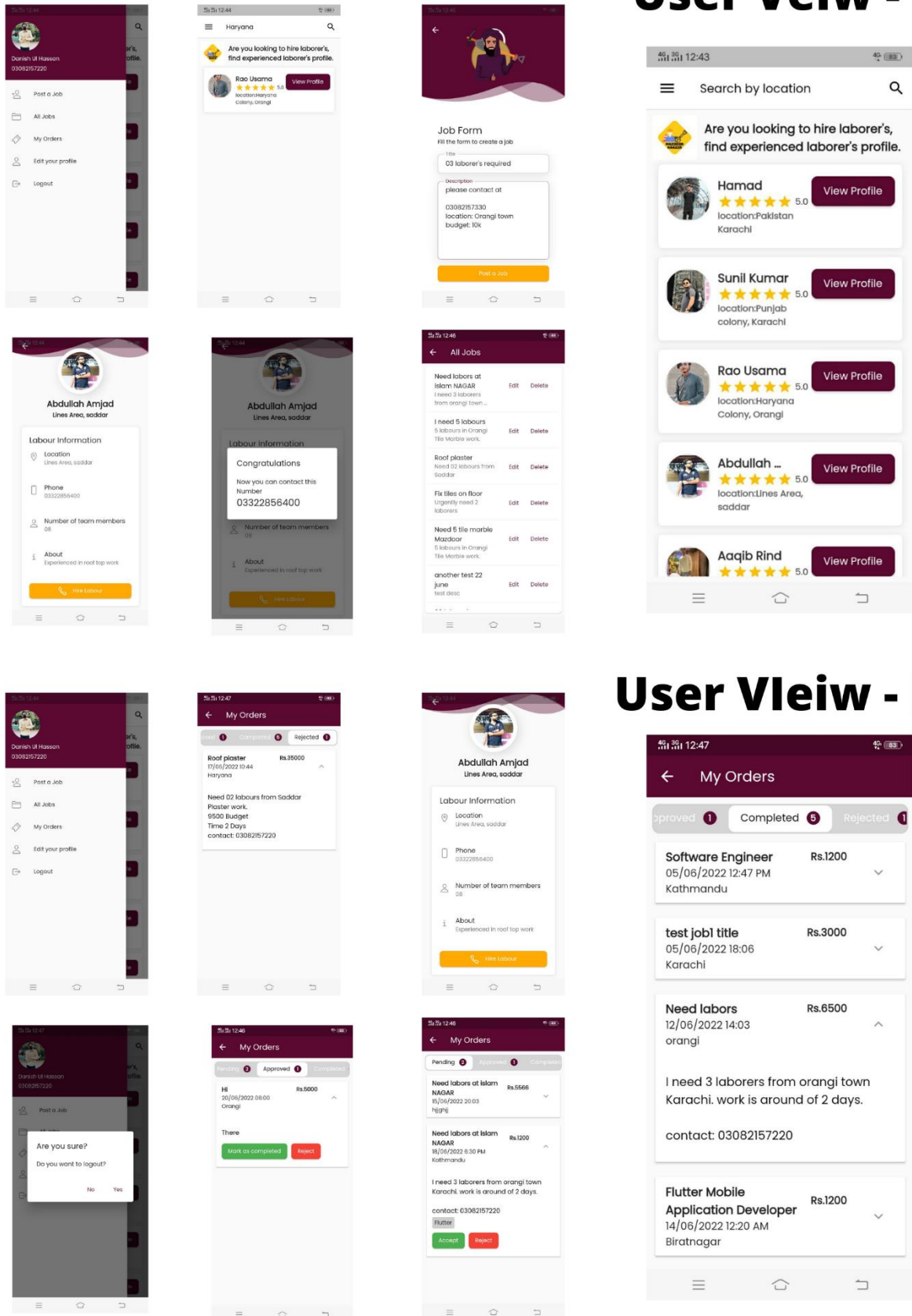
### Top Profiles

No.	Title	Date & Time	Author	Comments	Details
1	Azhar Ali	June 07, 2022 10:11:13	DanishUIHassan		<a href="#">Preview</a>
2	Yasir Shah	June 02, 2022 17:15:33	danishulhassan	2	<a href="#">Preview</a>
3	Junaid Khan	June 02, 2022 17:15:16	danishulhassan	1	<a href="#">Preview</a>
4	Shan Masood	June 02, 2022 17:14:50	danishulhassan	2	<a href="#">Preview</a>
5	Haris Sohail	June 02, 2022 17:14:25	danishulhassan	2	<a href="#">Preview</a>

## 5.2 Coding Section

This is the coding section which has the user panel as well as labor view. There are 2 different interfaces of the application. We have added dependencies in pubspec.yml file because this is the file which is our application totally depends on.

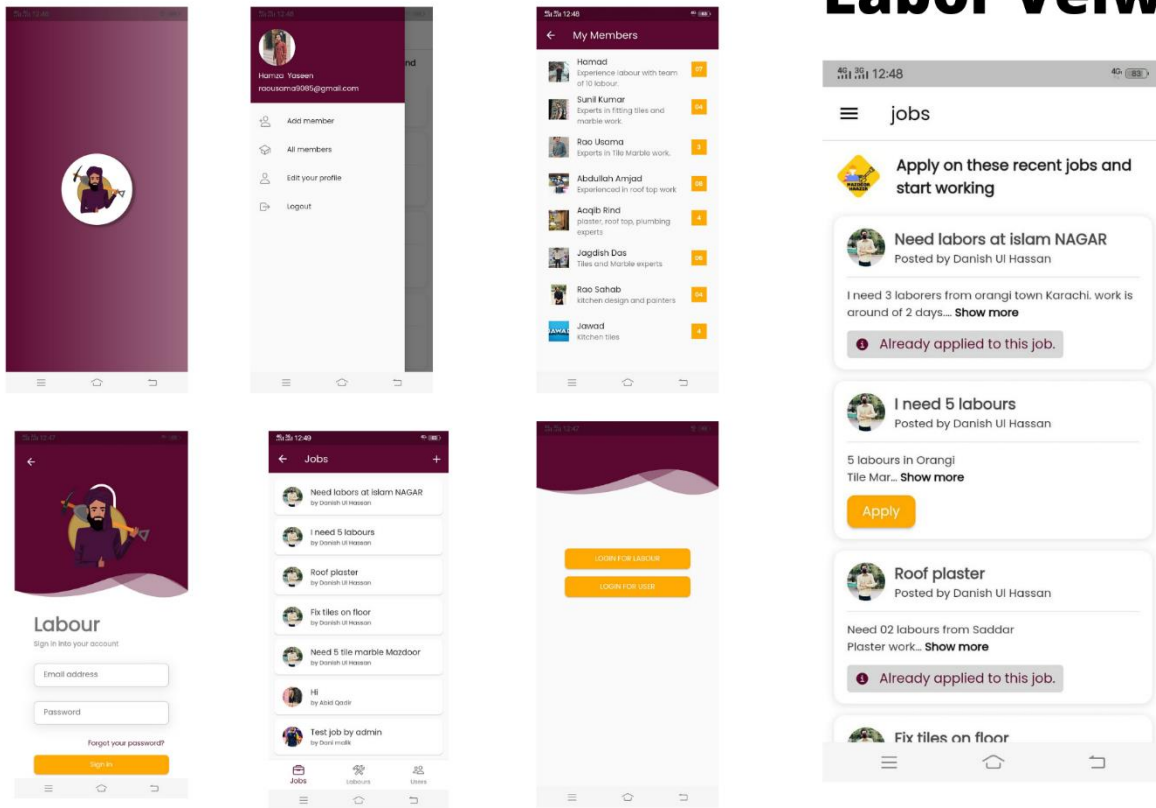
## 5.2.1 Mobile App Screens



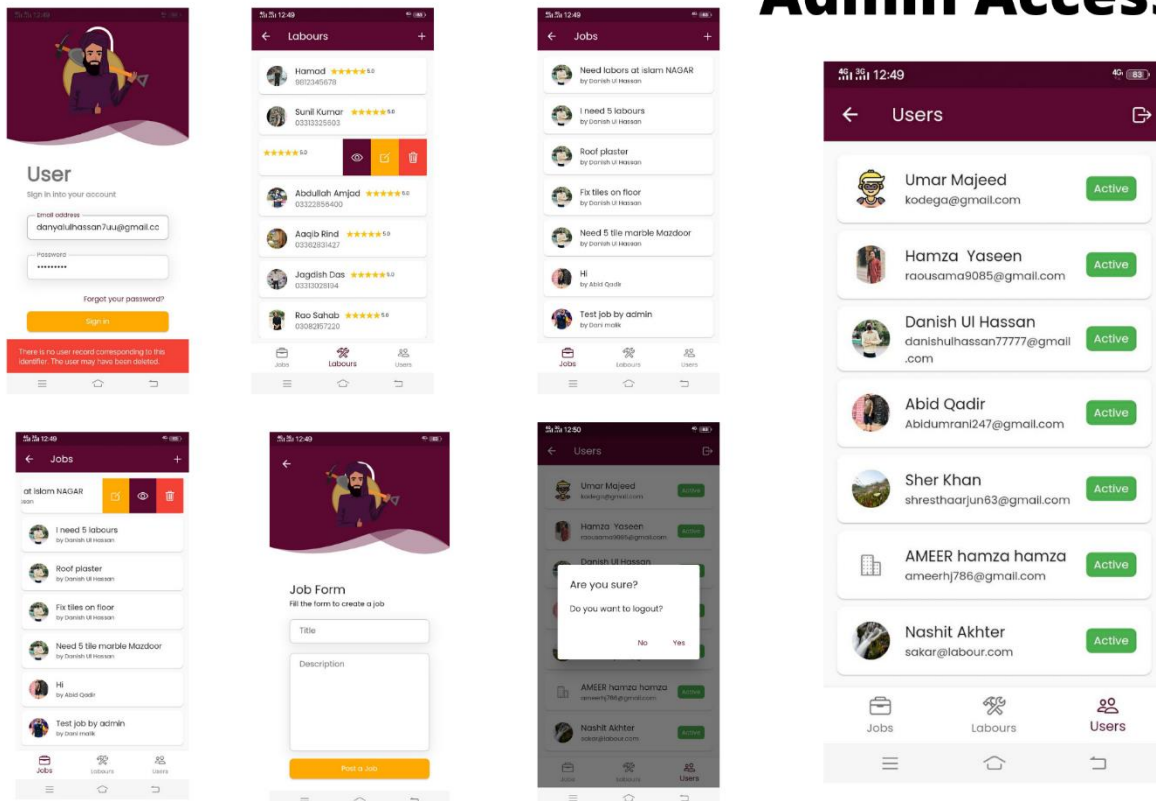
## User Veiw - I

## User Vleiw - II

# Labor View



# Admin Access



## Chapter 06

### System Testing

In this chapter, we will substantiate and validate our application system. To do this, we will use many different techniques of testing. Oversetting, we will check either our system is working well or not. We will set some testing criteria to assess the system. We will give some inputs and then check their productivities. This chapter will be consisted of test plan, unit testing, system testing, integration testing as well as test cases, etc.

#### 6.1 Test Plan

Testing plan has the great importance, and it is one of the modules of the design analysis as well as module of the system. Testing is an evaluative phase. The system will go for the testing if the system is ready. The developer of the system needs to undertake that which thing will not be avoided before the final implementation of the system.

If the testing will be completed successfully so it means that the system has no error. Furthermore, the testing also displays that the functions of the software represent to be the working according to the requirements of the user as well as specifications. Secondly, the information or detail which is gathered as testing, gives the acceptable demonstration of reliability of the software and some demonstration of quality of the software.

Testing is able to show us the errors which will be in the software. It cannot show us the absence of faults. Before beginning the testing, the testing should be designed. After completing the coding phase, testing phase will start.

During the testing of the software, the software will be used provisionally so that we can assure that the software is not fail, connections are fine, the result is inspected as well as the test information are input.

#### 6.2 Resources

We discussed various resources which are used in testing phase like what human resources are needed? What will be testing environment? Tools and other resources.

### 6.2.1 Human Resources

In this part, we will discuss about their sources about testing. Unit testing, integration testing will be covered by me (Danish Ul Hassan), I am responsible to prepare, design, manage, execute, resolving the related issues as well as test activities.

### 6.2.2 Testing Environment

All stuff related to testing environment (such as developers, testers, operations staff, testing services, etc.) will be done according to the flutter official documentation, which mainly includes the Flutter widget test which is separately done by flutter for each widget.

### 6.2.3 Testing Tools

Flutter allows us to write unit tests as well as integration test, but the best part is that it has the functionality to check each widget using widget test which verifies the working of each widget. All testing methods or levels will be covered as under (manually).

## 6.3 Test Schedule

A test schedule species the tasks and related dates and modules.

Tester Name	Module	Schedule
Danish Ul Hassan	Main forms	January 2022
Danish Ul Hassan	Collecting data	January 2022
Danish Ul Hassan	Code writing (UI)	February 2022 to March 2022
Danish Ul Hassan	Code writing (Backend)	March 2022 to April 2022
Danish Ul Hassan	Finding bugs	April 2022
Danish Ul Hassan	Finding errors	May 2022
Danish Ul Hassan	Running proper code	May 2022
Danish Ul Hassan	Finalizing the code	June 2022



## 6.4 Testing Method

We conducted Black-Box testing throughout testing phase.

### 6.4.1 Black Box Testing

Black box testing is the technique in which the internal design or structure of the product, which is to be tested is not familiar with the tester. These tests will be functional or nonfunctional. Black box testing is also called the Behavioral testing.

## 6.5 Level of Testing

There are couple of testing levels which are mentioned below

- ❖ System testing
- ❖ Integration testing
- ❖ Unit testing
- ❖ Widget testing (by Flutter)

### 6.5.1 Unit Testing

When smallest unit of code of our project is developed, then we can test this smallest unit of testing. This testing will be called as unit testing.

**EXAMPLE:** first we will apply unit testing on sign-in module whether it is behaving according to requirements or not?

Then we will consider sign-up module for unit testing, and so other core modules will be gone through unit testing.

### 6.5.2 Integration Testing

If developer's team is developed some unit of codes, then first we will test separately each unit of code and then we will integrate these unit of codes and perform integration testing.

In unit testing we were testing each module separately, now in integration-testing, we will combine modules (like sign-in & sign-up module) and then apply integration testing, and in this manner, we will go through all other core modules.

### 6.5.3 System Testing

When your complete project is completed in terms of code, now here is a time to test whole system, called as system testing.

Now we will combine all modules (such assign-in, sign-up modular module, user module & admin module and other modules) as whole system and will apply system testing.

### 6.5.4 Gantt Table

Task	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan
Do the Literature Survey	✓	✓	✓	✓								
Analyzing Classified website	✓	✓	✓									
Planning Language to be used		✓	✓									
Planning Platform used to Create website	✓	✓	✓									
Planning Data Mining Algorithms			✓	✓	✓							
Planning User Interface		✓	✓	✓								
Analyzing Users of Our website					✓	✓						
Analyzing Server & Hosting					✓							
Developing Graphical Interface(UI/UX)	✓	✓	✓	✓	✓	✓						
Integrating Server to GUI					✓	✓						
Building Database					✓	✓						

<b>Building Data and collecting data</b>					✓	✓						
<b>Black-Box Testing</b>				✓	✓							
<b>Integration</b>				✓	✓	✓						
<b>Validation</b>				✓	✓							
<b>Deployment</b>						✓	✓					
<b>Write the Final Report</b>		✓	✓	✓	✓	✓	✓					
<b>Prepare for the Presentation</b>					✓	✓	✓					
<b>Design the Project Poster</b>							✓					

## 6.6 Test Cases

A test case is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly. The process of developing test cases can also help find problems in the requirements or design of an application. We have written some test cases too through which we have tested our application as per the test steps.

TC ID	DESCRIPTION	TEST-STEPS	EXPECTED RESULT	PASS/FAIL
TC_001	Slider of product images is working fine or not? Can it be hovered and clicked	Home page	Each image is slided line by line and it is hovered as well as clicked form going on the order page	Passed.
TC_002	Images of the profile, detail of laborers, price and location information are related to the goal.	Labor Profile detail page	All information is related to the laborers profile and GUI is best based on the application successfully	Passed
TC_003	Adding profile to the platform, with name, contact no, location, profile picture functionality is working fine?	Profile Data	Platform is able to add in the profile and name, location, contact no, profile picture functionality will work according to the data.	Passed
TC_004	Post the jobs, and labors can view the job on their interfaces	After Job Posted	The job posted by the user will enable the laborers to see the job and then they can apply on them based on the criteria set by the user.	Passed
TC_005	Login, FAQs, contact-us page and customer services section will tested	Other tests	All pages and sections are related to the website as well as product which is selected by us.	Passed
TC_006	Membership or login page testing that the user who is logging, is a part of membership.	Membership or login	Verified that the user is member of website or not by their username and password	Passed

## Chapter 07

### Conclusion & Future Work

#### 7.1 Conclusion

The concept of “**MazdoorHaazir**” is to create work opportunities for the illiterate community, The MazdoorHaazir platform is for the people who are struggling to find good Mistry’s and Labors to build their house. The aim is to set up a platform where people can connect with the labors and contractors and hire them according to the need. In “**MazdoorHaazir**” platform (application), in which they (mistris and labors) can register their self along with their other team members (labors and workers) and get the jobs (work contract) through the application just creating and managing their profile. They can share their contact details, area preference of work (availability where they are looking for work). “**MazdoorHaazir**” is a platform that connects customers to the skilled, experienced and reliable service professionals in their own locality. “Mazdoor Haazir” is the one-stop destination for all areas needs which includes cemetery, concrete laborers at your doorstep.

#### 7.2 Future Work

The future work which we must do in our website is a mentioned below:

- We have a plan to implement make a database in which system will show the different categories of laborers which includes painters, plumbers, electricians, motor or bike mechanics etc.
- We will work on interface and will make it more elegant and user friendly.
- We will also add trending features on the system.
- We will reduce the manual labor or human efforts.
- Major operations which are done manually, we will do within a matter of second.
- On plus the potential org/companies can display their ads on the platform who are looking for laborers (Ad-based)
- Other types of laborers profile section

## References

- [1]. Harshithraj, Ashitha, Arpitha, Ramana, and Manohar Singh. "Job Portal for Unskilled Workers." *International Research Journal of Engineering and Technology (IRJET)* e-ISSN: 2395-0056 Volume: 08 Issue: 07 | July 2021
- [2]. Jan, Sadeeq, Imran Maqsood, Iftikhar Ahmad, Majid Ashraf, Fazal Qudus Khan, and M. I. K. Khalil. "A systematic feasibility analysis of user interfaces for illiterate users." *Proc. Pakistan Acad. Sci Part A* (2019): 75-91.
- [3]. Friscira, Elsa, Hendrik Knoche, and Jeffrey Huang. "Getting in touch with text: Designing a mobile phone application for illiterate users to harness SMS." In *Proceedings of the 2nd ACM Symposium on Computing for Development*, pp. 1-10. 2012.
- [4]. CHAN, Hoi Shou Alan. "A Review on Voice User Interface for Illiterate People." In *3rd South East Asian Network of Ergonomics Societies International Conference 2014, Singapore (ISBN: 978-981-07-7758-6)*. 2014.
- [5]. Pataca, Daniel, Sônia Kutiishi, Esther Menezes, and Graziella Bonadia. "An e-gov service for retirement applying by illiterate and disabled people." In *Proceedings of Workshop on Design & Evaluation of e-Government Applications and Services (DEGAS'2007)*, p. 7. 2007.
- [6]. Deo, Shaleen, David M. Nichols, Sally Jo Cunningham, Ian H. Witten, and Maria F. Trujillo. "Digital library access for illiterate users." (2004): 506-516.
- [7]. Hamzi, Morteza, and Abdolreza Hajmoosaei. "Web interface design for academic institutions." In *2014 IEEE Conference on e-Learning, e-Management and e-Services (IC3e)*, pp. 7-11. IEEE, 2014.
- [8]. Takada, Haruhiko, and Incheon Paik. "Design of general user interface for automatic Web service composition." In *2008 Japan-China Joint Workshop on Frontier of Computer Science and Technology*, pp. 75-78. IEEE, 2008.

- [9]. Cuddihy, Elisabeth, and Jan H. Spyridakis. "From web designer to researcher: Using experiment patterns to research web design decisions." In *2012 IEEE International Professional Communication Conference*, pp. 1-10. IEEE, 2012.
- [10]. Safavi, Roshanak. "Interface design issues to enhance usability of e-commerce websites and systems." In *2009 International Conference on Computer Technology and Development*, vol. 1, pp. 277-281. IEEE, 2009.
- [11]. Kiruthika, Jay, Souheil Khaddaj, Darrel Greenhill, and Jarek Francik. "User experience design in web applications." In *2016 IEEE Intl Conference on Computational Science and Engineering (CSE) and IEEE Intl Conference on Embedded and Ubiquitous Computing (EUC) and 15th Intl Symposium on Distributed Computing and Applications for Business Engineering (DCABES)*, pp. 642-646. IEEE, 2016.
- [12]. Ahmed, Md Arman, Muhammad Nazrul Islam, Fatima Jannat, and Zinia Sultana. "Towards developing a mobile application for illiterate people to reduce digital divide." In *2019 International Conference on Computer Communication and Informatics (ICCCI)*, pp. 1-5. IEEE, 2019.
- [13]. Islam, Muhammad Nazrul, Md Arman Ahmed, and AKM Najmul Islam. "Chakuri-bazaar: A mobile application for illiterate and semi-literate people for searching employment." *International Journal of Mobile Human Computer Interaction (IJMHCI)* 12, no. 2 (2020): 22-39.
- [14]. Lalji, Zereh, and Judith Good. "Designing new technologies for illiterate populations: A study in mobile phone interface design." *Interacting with computers* 20, no. 6 (2008): 574-586.
- [15]. Khan, Iftikhar Ahmed, Syed Sajid Hussain, Syed Zafar Ali Shah, Tassawar Iqbal, and Muhammad Shafi. "Job search website for illiterate users of Pakistan." *Telematics and Informatics* 34, no. 2 (2017): 481-489.

[16]. Medhi, Indrani, Aman Sagar, and Kentaro Toyama. "Text-free user interfaces for illiterate and semi-literate users." In *2006 international conference on information and communication technologies and development*, pp. 72-82. IEEE, 2006.

[17]. Rahman, Asifur, and Akira Fukuda. "User Interface Design of E-Learning System for Functionally Illiterate People." *Int. J. Adv. Comput. Sci. Appl* 6 (2015).

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