

Interaction Design Degree Project- Stage 2

Employment Finder for Low Income group



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The Interaction Design Degree project 2 entitled “ Employment finder for Low Income group” by Vinay Ahuja (07633001) is approved, in partial fulfilment of the requirements for Master of Design Degree in Interaction Design.

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Vinay Ahuja, April '09

This Project is an attempt to study the means and methods that various people like carpenter, plumber, electrician, maids (all the people under low income group) follow to find work and to study their problems related to employment and faced while finding employment opportunities. The aim of the project is to design a system, or to find a solution to help all the people under low income group in finding employment opportunities.

There are not much means available for people under low income group to find employment. My contribution to solve this problem is by designing a system called 'Kalpataru'. People under low income group registers with the system and they get updates regarding employment opportunity related to the preferred profession from the specified area through a mobile application and an IVR system that are the services provided by this system.

This solution caters to both the employers and the employees, by helping employees in finding employment and by helping employers in finding employees through an automated system.

Introduction.....	10	Use Cases	286
Design Methodology	12	Prototype of IVR system	287
Contextual Enquiry	16	Future Scopes	288
Background Study	18	References	290
Affinity Analysis.....	22		
Target Users.....	34		
Design Goals.....	36		
Ideation	37		
Information architecture	38		
Screen Prototype.....	39		
Final concept	40		
Scenario 1	44		
Scenario 2	96		
Scenario 3	152		
Scenario 4	196		
Scenario 5	228		

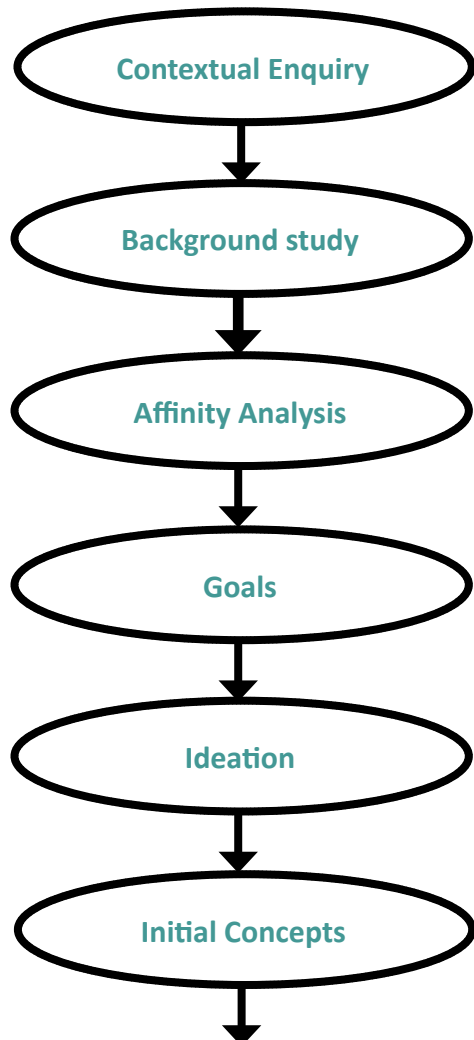
A large number of Indian population living in rural areas are illiterates and their livelihood is earned mainly by farming, poultry farms etc. These people migrate to cities for work and as they are illiterate they end up learning small skills, and work as a carpenter, plumber, electrician, mechanic, driver, security guards, housekeeper, caretaker etc. They earn their bread out of these professions only.

These people under low income group face many problems in finding employment opportunities and also there are hardly any means available for these people to find employment. These people are under such kind of jobs, that their earning is not much, and also they are not employed on a permanent basis. So it becomes very difficult for them to run their families.

Some of these people under low income group specially women, have constraints of location as they cannot go far to work, due to family responsibilities and many other reasons. At times these people are cheated by the employers, so employment security is also a factor that is very important for them.

The aim here is to design a system to help these people under low income group to find employment opportunities easily. And the attempt is to use the existing technology and means used by these people and to help them find employment.

The target users of the proposed designed are both the Employee and the Employer. Employers face equal problems in finding the employees for their various works whenever required. So considering the various problems and the difficulties faced by the employers, an attempt has been made to solve the problems and meet both the ends.



Data Collection: It included the study of various web sites through which people under low income group find Employers and vice versa and it also included visits to various NGO's to see what kind of work they are doing to help low income group and it also included visit to the office of 'BharatMazdoor.com'.

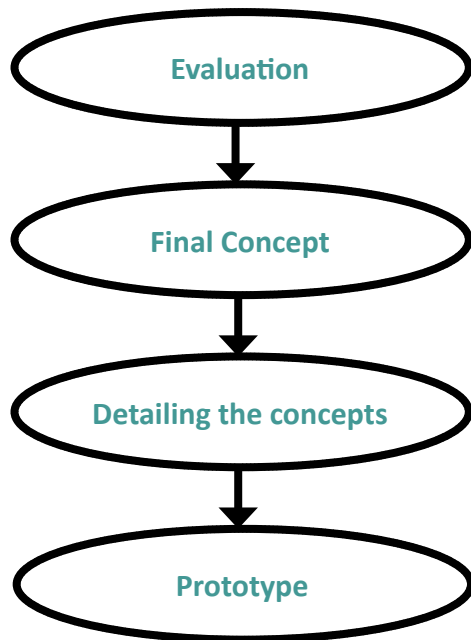
Contextual Enquiry: Next step was to study and find out actual means through which people under low income group find customers, to study this Contextual Enquiry was conducted with total 11 people, out of which 8 people were the Employees with different professions and 3 were the Employers.

Affinity Analysis: After Data collection and Contextual enquiry, Affinity analysis was done and Insights, Observations and Design ideas were created.

Goals: After finalizing the target user, User goals were created i.e. separate goals for Employees and separate goals for Employers to start with ideation.

Ideation: started with ideation by developing an IVR(Interactive Voice Response) system for the Employers to find Employees and vice versa.

Initial Concepts: From an IVR system concepts further developed into a mobile application to help the Low Income group to find Employers and basic paper prototypes were created.



Evaluation: After all the paper prototyping, screen prototypes were created and they were explained by creating Scenarios and personas and they were evaluated.

Final Concept: After all the evaluation, concept of an IVR(interactive voice response) and a Mobile application was finalized.

Detailing the final concept: After concept finalisation, it was detailed out with a scenario and five different games were added into it, three based on learning, and two based on fun and paper prototype of all the games was prepared.

Prototype: After taking the user feedback some modifications were made and then the final flash prototype was made.

The aim of contextual enquiry was to find out the various ways or means by which people under low income group(employees) find work or employers and the same way,the various means by which employers find or hire these employees for work. In total 11 people were interviewed, out of which 8 were employees, all from different professions and 3 employers, out of which 2 were housewives and one Senior engineer working in Mahindra's.

Users Interviewed:

User 1

Age : 70 years

Profession : Garbage Collector

He is working as a garbage collector since last 55 years in IIT. He has two sons and they earn quite well, though there is no need for him to work at this age, but he is working just to remain fit. Since last so many years he's working in IIT, so he has never faced any problem in finding employment because of his contacts. He lives near IIT and has never worked anywhere else, because his wife remains unwell, so he need to work nearby only.



User 2

Age : 25 years

Profession : Sweeper

He is working as a sweeper and is also doing a part time job as an LIC agent. He got all his jobs till now, with the help of his friends. Once he went for an interview after looking an advertisement from a newspaper, but was there he was asked to submit Rs.30,000 in order to get that job. This incident made him believe, to just accept opportunities offered through friends rather from any other source.



User 3

Age : 27 years

Profession : Gardener

He is working as a gardener since last two years and before that he was working as a security guard. He got both his jobs from the contacts of his friends. He keeps on checking marathi, hindi newspapers for employment opportunities and recently he has filled a form of board security. He has completed his studies till ninth standard but he has no idea of what kind of opportunities are available for him.



User 4

Age : 30 years

Profession : Driver

He is working as a driver since last 5 years. First he started his own Taxi business at his village, but later he shifted to Mumbai. One of his friend who is working as a driver in mumbai, told him about the opportunities and now he is earning well. Carries a cell phone and maintains contacts of friends and customers in it. He has lots of opportunities available around and doesn't sit idle even for a single day.



User 5

Age : 32 years

Profession : Construction worker

He is working as a construction worker since last 8 years. He has completed his studied till HSC, but is not awared about the opportunities available. First he was working at his village but later shifted to Mumbai, because opportunities are more and even labor charges are high. He shift to other contractor, if the current contractor makes any delay in the daily wages.



Contextual Enquiry

User 6

Age : 27 years

Profession : Carpenter

He is working as carpenter since last years 8 years in Mumbai, because here opportunities are more and also labour is paid more. He is always looking for opportunities and is ready to go anywhere for work. He gets opportunities on sight, while working for some other person. He maintains a small diary of contacts and also uses his brother's cell phone find opportunities.



User 7

Age : 18 years

Profession : Newspaper seller

He is student of HSC and goes to evening college and during the day helps his brother in selling newspaper. He works to help his family and regularly check classified to find work. He is always discouraged because he is always rejected at every place because he is too young for any work.



User 8

Age : 31 years

Profession : Plumber

He is into this profession since last 6 months. He has learned all the skills from one of his friend who is already in this profession from last one and half year. Difficult and complex jobs are given to him by the contractor because he is not expert till now. He is paid by the contractor according to the amount of work he do. According to him one always comes to know about the job opportunities from the known friends.



User 9

Age : 49 years

Profession : Engineer

He is working as an engineer in Mahindra's. Whenever something goes wrong at home, its his responsibility to get it repaired. He requires electrician quite frequently like one in two months for some repair, so he has saved the number or an electrician and of the nearby electrical shop in his cell phone. Whenever electrician is required he gives a call to electrician or otherwise at the shop to get the job done.



User 10

Age : 45 years

: Housewife

She has a small family of four members and manages home quite well. She is very much concerned about the security of her house and selects a maid who should be little elder in her age, because according to her they are more reliable and sincere and should be working at 3,4 houses in the neighbourhood.



User 11

Age : 28 years

: Housewife

She is mother of 2 years old daughter and she is totally dependent on maid for her household work. So for her thinking of a single day without a maid is impossible. Whenever one of her maid is about to leave work, she asks her only to send a replacement for herself and then only leaves because its quite difficult to find a maid.





[R1.a]



[R1.b]



[R1.c]

After the contextual enquiry started with Data Collection by studying the various existing means through which Employers find Employees and vice versa. Started with the study of web portals, though there were lots of them but all of them were for US, UK and other markets, in Indian context there were just four web sites that were quite relevant and have quite nice features suitable for Indian users, but still in India they are still used quite less, but they are upcoming medium.

Some of the important Indian web sites:

www.entegramam.gov.in: These are the community web portals created by the state govt. of Kerela, in total there are 1,100 such web portals created by the govt. in kerela. All these web portals are maintained by an NGO- Akshaya, these portals provide information regarding fields like agriculture, health, education, tourism, employment etc. Each of these portals have information specific to that particular area.

www.babajob.com : This is a web portal where employers can post a job for free and one can register on the web site with their email id and cell number and can receive the alerts on cell phone. This web site also uses google maps and shows dynamically the opportunities available, when one clicks on them, it shows the address of the employer, timings, salary etc.

www.goforads.com : This web portal also provides the facility to the employers to post a free ad and the advertisement will be listed on the web site for 15 days and they can post their requirements for maids, driver, cook etc. One can also find part time jobs, government jobs etc.

Existing Similar products

www.Bharatmazdoor.com: This web portal allows the employer to view the profiles of various employees, registered with the web site, one can see their address, their religion, their past experience, their earning, also their contact numbers are also given on the web site, so employer can take their contact number and directly employ them.

Visit to the office of Bharatmazdoor.com:

Its a part of charity work of three people, who work for this and who maintain this web site. They have started this in 2007, they have around 1000 people from different areas of mumbai, registered with them. They take help form different NGO's and go to different slum areas of mumbai and make people register with them. The aim of visiting their office was to see how they work, how they make people register with them, how and who maintains the profiles, to understand their whole system and to find what kind of problems they face.



[R1.d]



[R1.e]



[R1.f]



DNA Infoline 0222 6666666 (Toll free)

Its a service, where one can find carpenters, plumbers, packers and movers, information regarding hospitals, schools, electronics shops etc in a particular area.

System Flow:

- After dialling the toll free number, an executive picks up the call and asks, what are you looking for-
- Asks that are you in Mumbai-
- Which area-
- Asks your name-
- Contact Number-
- Employer immediately starts receiving messages mentioning the contact numbers and the names of the required employees demanded from the system
- Employer start receiving calls from employees, asking for work.

This is a system for helping employers to find employees, and employees to find employers and employment.

Issues with the product:

- The employer is not able to see the whole list of employees, that can be found through the system. In this case, an executive takes the call, and it is really difficult for the executive to read the whole list of the employees of various professions to the employer if required.
- The message that the employer receives regarding the specified employee, doesn't have the demographics of the employee like the age, skills, rating, experience, location and some information regarding the past experience or current employer etc.

- The application doesn't show any feedbacks from the previous employees and employers.
- This application doesn't allow area specific search of the required employees or employers.
- **It doesn't allow to find a user for a specific day and time**

After contextual enquiry, analysis was done to create insights, observations and Design ideas out of them.

User Statements

- User 10 got her first maid from her friend, who was staying in that locality since long.
- User 4 got his job in Mumbai through the contact of his friend.
- User 2 got his job through his friend, whom he had asked to talk to supervisor for his job.
- User 5 got his first job in Mumbai through his friend.

Observation : Friend is the most reliable, trustworthy source in finding a job.

Insight : Friends are the main source of finding job

Design Idea 1:

System should allow the user to maintain networking with friends, known and unknown people.

User Statements

- User 4 get calls from the people, who are his friend's friend and they tell him about the job opportunity.

Insight : Unknown people of the same profession helps in finding job

Design Idea 2:

The system should allow its users to post a job to a particular category of users or to all the users of the system.

Analysis

User Statements

- User 2 left his previous job because he was overburdened and was paid less.
- User 5 said that he shifts the job if the contractor doesn't pay properly.

Observation : They don't take exploitation and leave the job as they have good number of opportunities available.

Insight : Leaves the job if they are overburdened or not paid on time

User Statements

- User 5 says "HSC hi to kia hai, ye karke aur kya kaam milega, aur kuch seekha bhi to nahi hai"
- User 7 is also looking for job, but is always disappointed because everyone rejects him because he's too young for any job and is not

Insight : Lack of visibility regarding the opportunities available

Design Idea 3:

System should inform the user regarding the opportunities available according to his profile and requirements.

User Statements

- In case of the construction worker contractors of the nearby construction sites, comes and gives offer to work on their site.
- Carpenter also gets job opportunities while working at a site and is not experienced
- Mrs.Surekha got her first maid from her friend, who was staying in that locality since long.
- Contractors goes to different sites to hire labors for their own site.
- Mr.Subhash, went to the electrical shop to get the contact number of the electrician.

Insight : **Physical proximity**

Design Idea 4:

System should give updates to the user regarding the opportunities available in the nearby area.

Analysis

User Statements

- User 4 was asked by his friend working in Mumbai, that he's earning more and there are more job opportunities in Mumbai, motivated him to come to Mumbai and work.
- User 8, shifted to Mumbai, because he has one of his friend, settled and working in Mumbai as a Plumber.
- User 5 worker shifted to Mumbai, because here labor is paid more.
- User 6 said " I am ready to work anywhere, I just want to earn, but I should have the right address and should know the right location, pahari pe bhi hoga to mein jaunga".

Observation : People agree easily to shift to a new place when they have some known person settled there.

Insight : Profit or more opportunities motivates people to migrate

Design Idea 5:

System should inform the user regarding the profits and opportunities available at different areas. Updates regarding the Friends or known ones living in that area, should also be mentioned.

User Statements

- User 8 was learning the skills so he was sent to those sites by his contractor where the work was not that complicated.

Observation : Experience in a particular profession, helps earn more

Insight : Skilled= More work, more money, higher preference

User Statements

- User 3 at some other place in the evening and still searches for the similar job.
- User 5 said that he shifts the job if the contractor doesn't pay properly.

Observation : They don't have time and source to learn new skill.

Insight : People prefer multiple jobs, but in the same profession

Design Idea 6:

System should also inform the user regarding all full time and part time opportunities available.

User Statements

- User 1, the 70 year old garbage collector preferred job in the nearby area, because he is old and is not able to travel to far off places for work and also he has wife whom he has to look after.

Observation : Age and responsibilities, plays a role in deciding the place of work.

Insight : Preference of job in the Local or nearby area

Design Idea 7:

Along with the job opportunity , the name of the known person or friend expert in that profession should be updated by the system.

Analysis

User Statements

- User 6 maintains a dairy of all the contact numbers of family members, friends, contractors and unknown people.

Insight : **Maintaining all contacts**

Design Idea 8:

System should allow the user to maintain his contacts, alphabetically and according to profession.

User Statements

- User 4 has a cell phone , in which he maintains all his contacts and also it's a quick medium of knowing employment opportunities.

Observation : **Person with a cell phone, gets quick updates regarding employment opportunity.**

Insight : **Mobile phone helps in getting quick opportunities and maintaining contacts**

Design Idea 9:

System should allow the user to maintain his contacts, alphabetically and according to profession.

User Statements

- User 2 was asked to pay Rs.30,000 to get the job, where he went for the interview after referring an advertisement in the newspaper.
- User 10 keeps the maid that has some link with the known source.
- User 11 keeps the new maid for a weeks trial period and then only she makes her permanent.
- User 9 has saved the number of the electrician in his phone book, and always call him whenever required.

Observation : It is generally difficult to trust an unknown person.

Insight : Trust on the employer/employee

Design Idea 10, 11:

System should allow the user to view the employees/employers location through a map and should show the contacts of the other employees working under the employer and contacts of the last or current employers of the employee.

System should allow one employer / employee to see the preferences and feedbacks added to the profile

Analysis

User Statements

- User 10 always keeps an elderly lady as her maid because she thinks that they are more reliable , skilled and sincere in their work.

Insight : **Employee should be skilled and reliable**

Design Idea 12:

System should show the age, skills etc along with the feedback from the previous employers.

User Statements

- User 9 calls the same electrician again, whose number is saved in his phone book, whenever needed.
- User 10 always asks her watchman to send the plumber, electrician etc whenever they are required because they are an employee of the society and goes to everyone's place around when needed.

Insight : **Employee once known is demanded again**

Design Idea 13:

System should allow the employer to add preference to the known or skilled employee.

User Statements

- User 10 always keep a maid that must be working at around 3-4 houses in the locality, may be at her friend's place or of some known or familiar person.
- User 10 always asks her watchman to send the plumber, electrician etc whenever they are required because they are an employee of the society and goes to everyone's place around when needed.
- Shopkeeper gives the contact number of the electrician to User 9
- Watchman sends the electrician and the plumbers when they are required by User 10

Observation : When the employee has some link with some known source than it becomes easy for the employer to trust.

Insight : Key person known to customers hwlps in finding jobs.

Design Idea 14, 15:

System should allow user to get numbers of the required employees or employers from known persons.

The system should allow its users to give feedbacks and view feedbacks from others.

Analysis

User Statements

- User 10 always keeps an elderly lady as her maid because she thinks that they are more reliable , skilled and sincere in their work.

Insight : **Employee should be skilled and reliable**

Design Idea 16:

System should show the age, skills etc along with the feedback from the previous employers.

User Statements

- User 8 was a mechanic, he shifted his job and became a plumber because one of his friend was a plumber, who taught him all the skills.

Insight : **People are ready to learn new skill, if they have some known person to teach them**

Design Idea 17:

Along with the job opportunity , the name of the known person or friend expert in that profession should be updated by the system.

User Statements

- User 3 checks various hindi and marathi newspapera to find employment opportunities.
- User 7 checks newspaper regularly to find a suitable job for him.

Observation : They have knowledge about classifieds

Insight : Ater friends, newspaper is another option for finding employment opportunities.

Design Idea 18:

System can also take RSS feeds from various classifieds.

Findings

- Trust on the employer/employee
- Maintaining all contacts
- Preference of job in the Local or nearby area
- Lack of visibility regarding the opportunities available
- Friend is the most reliable, trustworthy source in finding a job.
- Profit or more opportunities motivates people to migrate
- People prefer multiple jobs, but in the same profession
- Reference from others

After analyzing all the interviews and creating design ideas out of it, User Goals were created before starting with the Ideation.

Target User

The target user for the Project was the different **Employees** that come under low income group. The employees are:

Maid, Child care maid, Caretaker, Cook, Housekeeper, Plumber, Carpenter, Electrician, Painter, Mechanic, Mason, Driver, Peons, Security guards, Laborers, Caterers, Clerks.

Along with the employees, the **Employers** who face equal difficulties in finding these employees are also the target user for the proposed design.

Classification of Employees:

Employees are also divided into three different categories according to their term of employment.

Short term employment : These employees are employed for very short period of time and for very minute tasks, example - Electrician, AC mechanic etc.

Medium term employment: These employees are employed at times for few days, example - Carpenter, Laborers etc.

Long term employment: These employees are employed generally for regular work and for quite a long term like years or months, example - Maid, Driver etc.

User Goals

Goals of the Employees

Short term Employees:

- To find work everyday
- To earn a particular amount to run the family and for regular expenses
- To find more jobs to earn more
- To find opportunity irrespective of the location
- To know the exact location of the opportunity
- To learn more skills, to find multiple jobs

Medium term Employees:

- To find job regularly one after another
- To find multiple jobs if possible
- To find part time job
- To find job in the nearby area
- To find a bigger opportunity to become employed for long term

Long term Employees:

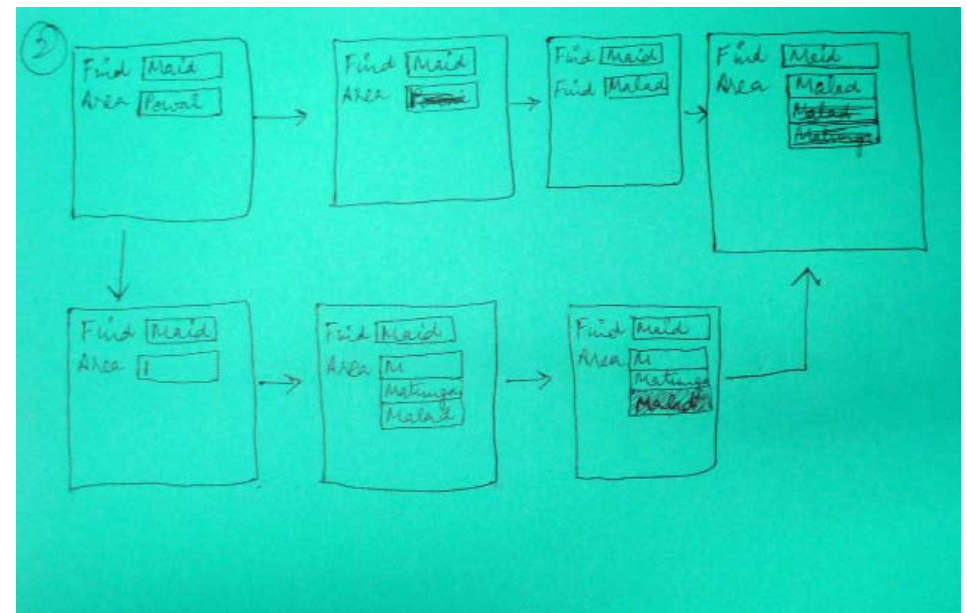
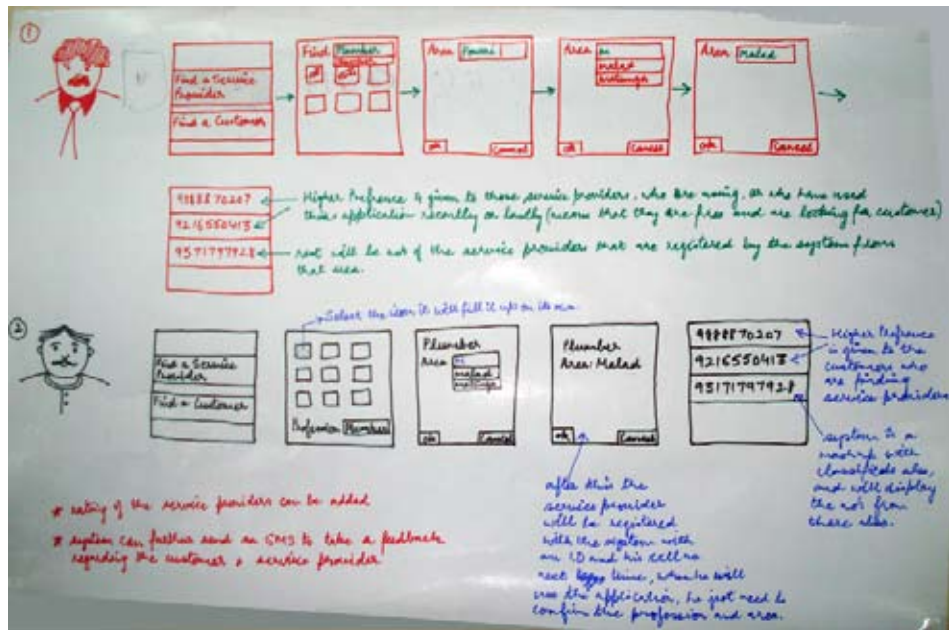
- To manage all the current employers properly
- To find a part time job or even a long term employment in the nearby area to earn more
- The employer should not be a fraud
- Not to loose the current long term opportunity because its little difficult to find one

Goals of the Employers

- To find an employee, when required
- The employee should be reliable, skilled
- The employee should charge a nominal amount
- The employee should not be a fraud

- To help the employer to find employee and to help employee to find employer.
- To help the users to do area specific search for required employee or employer.
- To help the users to find an employer or book an employee for a specific day and specific time.
- To show the feedback given to the employee and employer given by other employers or employees respectively.
- To help users to take reference from other users.
- To make the application customized according to term of employment of the employee

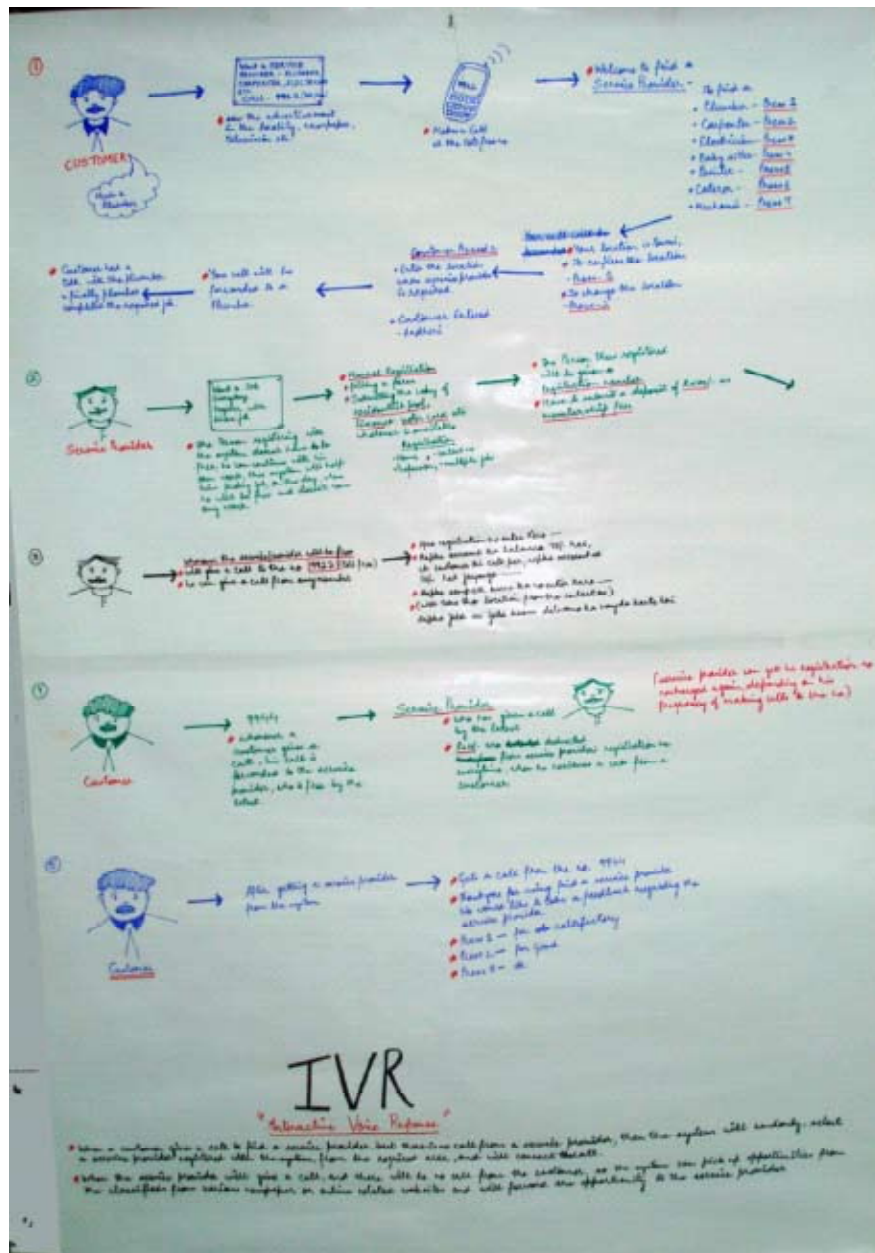
Ideation



The ideation was around the technologies that are used and are familiar to the people under Low Income group.

Mobile
Landline

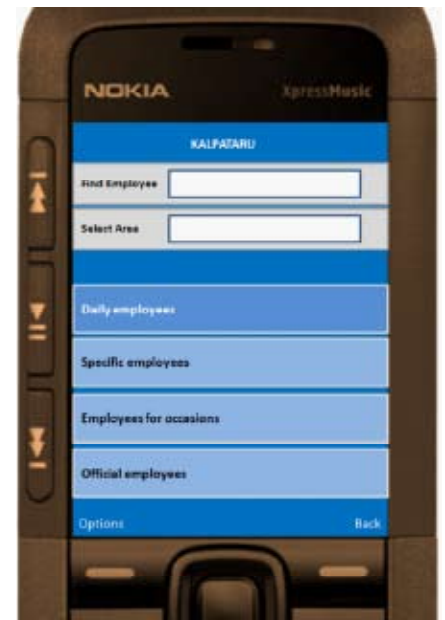
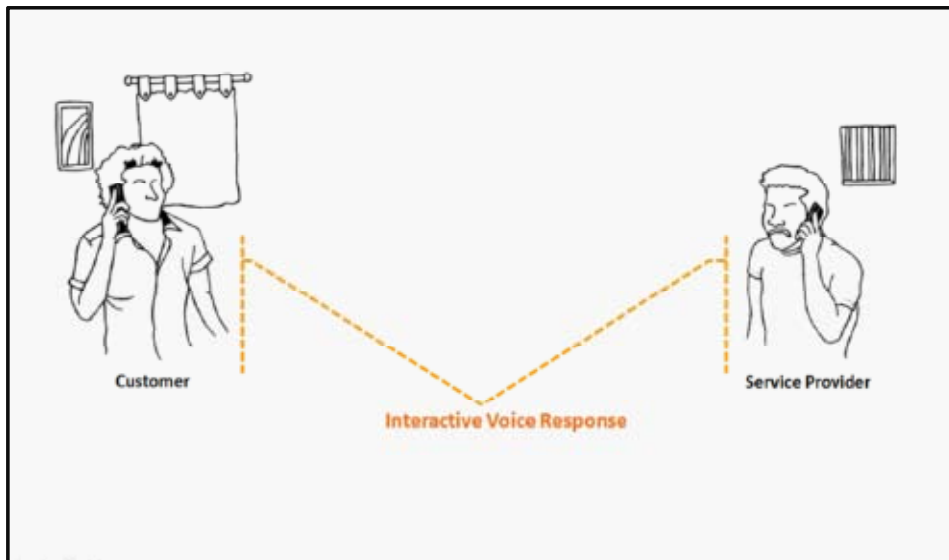
The output of ideation was:
Mobile Application
Interactive Voice response system



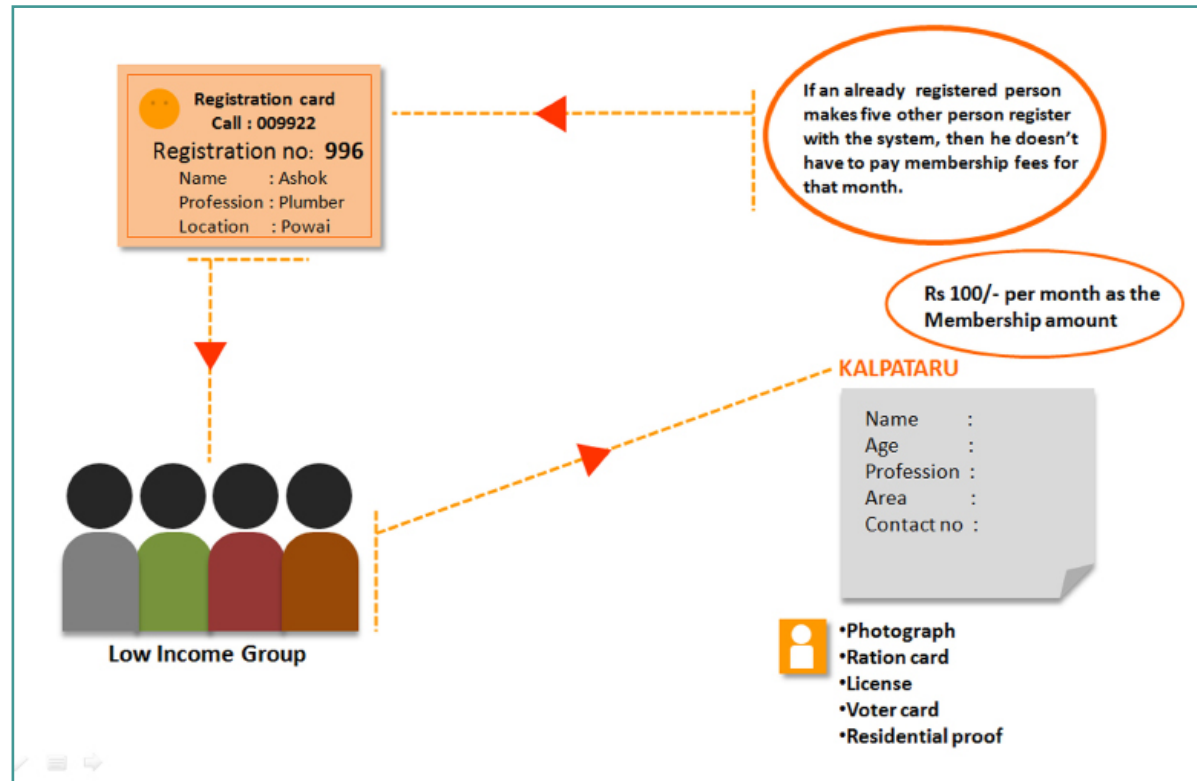
After ideation, Information architecture of the Mobile application and the Interactive voice response was created.

Screen prototyping

Screen prototype of the mobile application and Interactive Voice response system was prepared. After heuristic evaluation of the both the designs, three stage iterations were done.

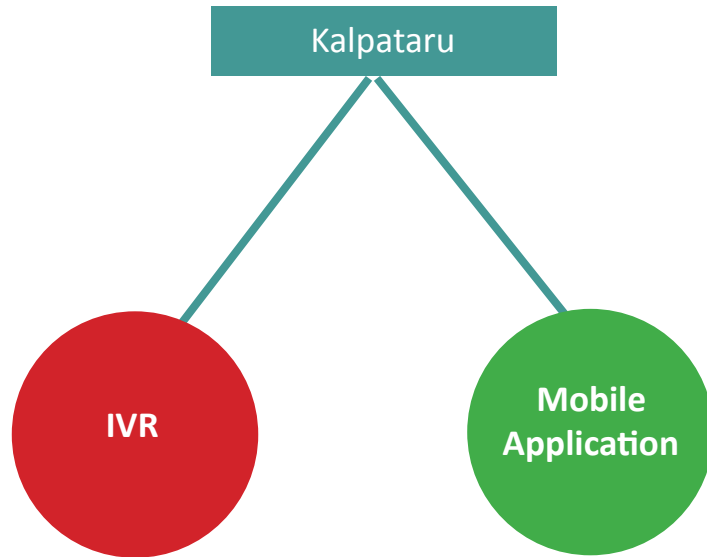


Final concept was a system and named it as Kalpataru(which is a holy tree, which fulfills all the wishes). The data of all the employees looking for employers will be registered with the system and the data with the system will be given to the employers looking for employees through different means.



KALPATARU

People under low income group will be registered with the system, for registration they need to fill a small form, giving some of their personal details, mentioning their name, age , profession, address, contact number etc. They also need to submit their photograph, along with a photocopy of either ration card, License, Voter card, Residential proof, any of the one. They also need to submit RS.100/- every month as their membership amount. The registered member who will bring five more of friends to the system, and will make them register doesn't have to pay his membership amount for that month. After registering with the system, the registered employee will get a registration card, which the registration ID.



The system Kalpataru will be a database of all the information related to all the registered employees and the information regarding these employees can be given to the employers through three different means.

- IVR(Interactive Voice Response)system
- Mobile Application

The data of all the employees with the system, will be divided into different lists, depending upon different areas. The employee who will inform the system that he/she is free or is looking for employer will be marked and will automatically be given a higher preference in the list. The Employees who will be free will be informed and connected first with an employer who will be looking for an employee.

Maid	Plumber	Carpenter	Electrician	Cook
● M001	● P004	● C001	● E001	● C001
● M005	● P005	● C002	● E002	● C002
● M006	P001	C003	E003	C003
M002	P002	C004	E004	C004
M003	P003	C005	E005	C005
M004	P006	C006	E006	C006

Employees looking for Employers

List of Employees registered from Bandra



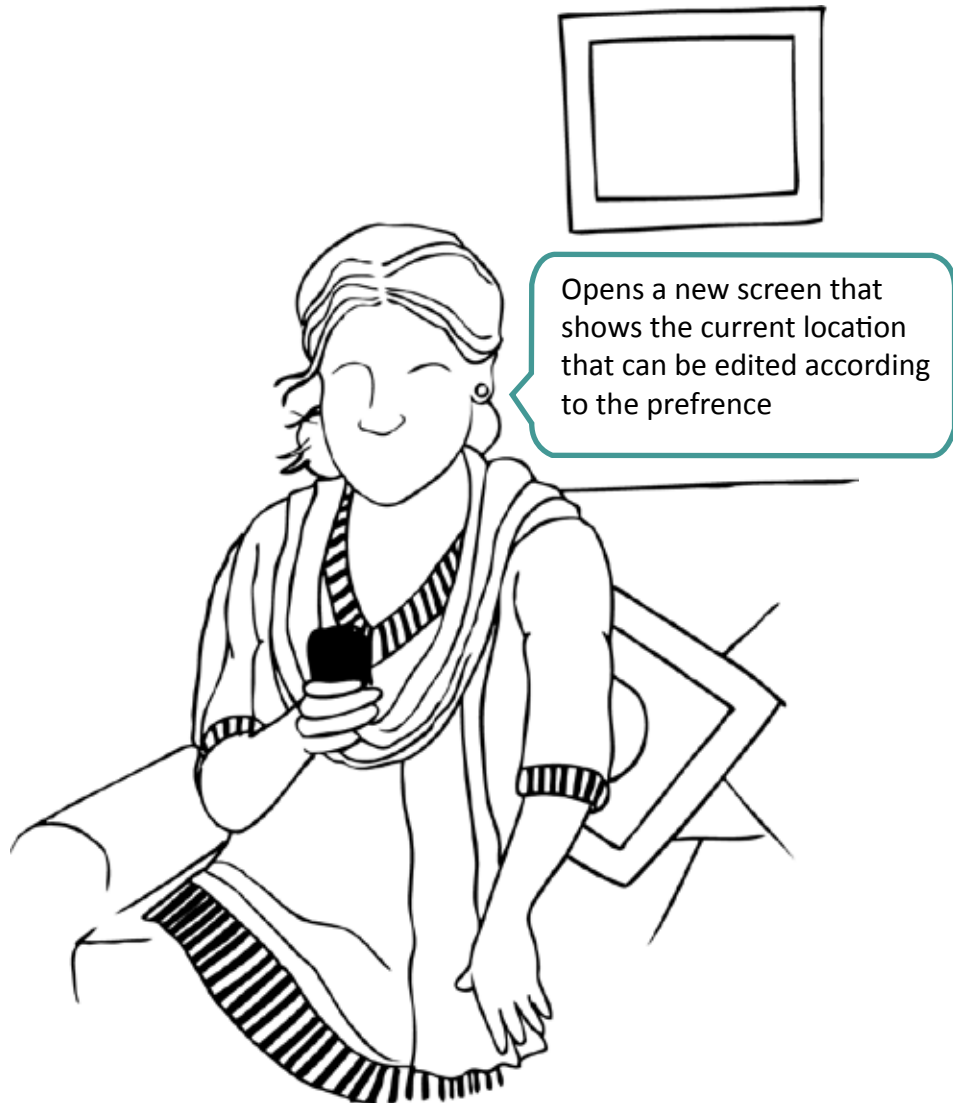
Mrs. Surekha is an HR in an IT company. She has a small family of three members. She takes care of every thing related to her household.

She was about to leave for an important meeting, and she suddenly saw that the drainage pipe of the kitchen is blocked, so she got worried that, but she cant stay back and get it repaired. Then she thought of booking a Plumber through Kalpataru for the evening, as she will be back home around 04:00pm.









The screenshot shows the 'Kalpataru' mobile application interface. At the top, there is a blue header with the app name and a back arrow. Below the header, there are three tabs: 'Search' (selected), 'History', and 'Pending'. The main form contains the following fields:

Select Employee	Plumber
Location	Bandra
Date of work	24 / 04 / 2009
Time of work	10 : 00 am
Type of work	

At the bottom of the form, there are two buttons: 'Options' and 'Clear'. The phone's physical keypad is visible at the very bottom of the screen.



Kalpataru

Search History Pending

Select Employee	Plumber
Location	Bandra
Date of work	24/ 04 / 2009
Time of work	10 : 00 am
Type of work	

Options Clear



The screenshot shows the Kalpataru mobile application interface. At the top, there is a blue header with the Kalpataru logo and a search bar. Below the header, there are three tabs: Search, History, and Pending. The main content area displays a form with the following fields:

Select Employee	Plumber
Location	Bandra
Date of work	24 / 04 / 2009
Time of work	10:00 am
Type of work	

At the bottom of the form, there are two buttons: Options and Clear. The mobile phone's physical keypad is visible at the bottom of the screen.

Scenario 1 - Finding a Plumber

The image shows a mobile application interface on a screen. At the top, there is a blue header with the text "Kalpataru" and a logo. Below the header, there are three tabs: "Search" (highlighted), "History", and "Pending". The main content area is a form with several fields: "Select Employee" with the value "Plumber", "Location" with the value "Bandra", "Date of work" with the value "24 / 04 / 2009", "Time of work" with a dropdown menu showing ":00 am", and "Type of work" which is currently empty. At the bottom of the form, there are two buttons: "Options" and "Clear". Below the screen, there is a physical keypad with a central square button and four smaller buttons around it.

Scenario 1 - Finding a Plumber

The image shows a mobile application interface for 'Kalpataru'. At the top, there's a blue header with the logo and name. Below it, there are three tabs: 'Search' (active), 'History', and 'Pending'. The main form contains several input fields:

- 'Select Employee' with the value 'Plumber'
- 'Location' with the value 'Bandra'
- 'Date of work' with the value '24 / 04 / 2009'
- 'Time of work' with the value '05 :00 am' (the time field is highlighted in blue)
- 'Type of work' (empty)

At the bottom of the form, there are two buttons: 'Options' and 'Clear'. Below the screen, the physical keypad of the mobile phone is visible, including a central navigation pad and several function buttons.

Scenario 1 - Finding a Plumber

The image shows a mobile application interface for 'Kalpataru'. At the top, there is a blue header with the 'Kalpataru' logo and name. Below the header, there are three tabs: 'Search' (highlighted in blue), 'History', and 'Pending'. The main content area is a form with several fields: 'Select Employee' with the value 'Plumber', 'Location' with the value 'Bandra', 'Date of work' with the value '24 / 04 / 2009', 'Time of work' with the value '05 : 00 pm' (highlighted in blue), and 'Type of work' which is currently empty. At the bottom of the form, there are two buttons: 'Options' and 'Clear'. Below the form is a physical keypad with a central square button and four surrounding buttons (top-left, top-right, bottom-left, bottom-right) with different colored indicators (blue, blue, green, orange).

Scenario 1 - Finding a Plumber

A screenshot of a mobile application interface titled "Kalpataru". The interface has a blue header bar with the app name and a search icon. Below the header, there are three tabs: "Search", "History", and "Pending". The "Search" tab is active. The main content area is a form with several fields: "Select Employee" with the value "Plumber", "Location" with the value "Bandra", "Date of work" with the value "24 / 04 / 2009", "Time of work" with the value "05: 00 pm", and "Type of work" with an empty input field. At the bottom of the form, there are two buttons: "Find" and "Back". The mobile phone's physical keypad is visible at the bottom of the screen.

Kalpataru	
Search History Pending	
Select Employee	Plumber
Location	Bandra
Date of work	24 / 04 / 2009
Time of work	05: 00 pm
Type of work	
Find Back	



Kalpataru

Search History Pending

Select Employee	Plumber
Location	Bandra
Date of work	24 / 04 / 2009
Time of work	05: 00 pm
Type of work	Pipe blocked

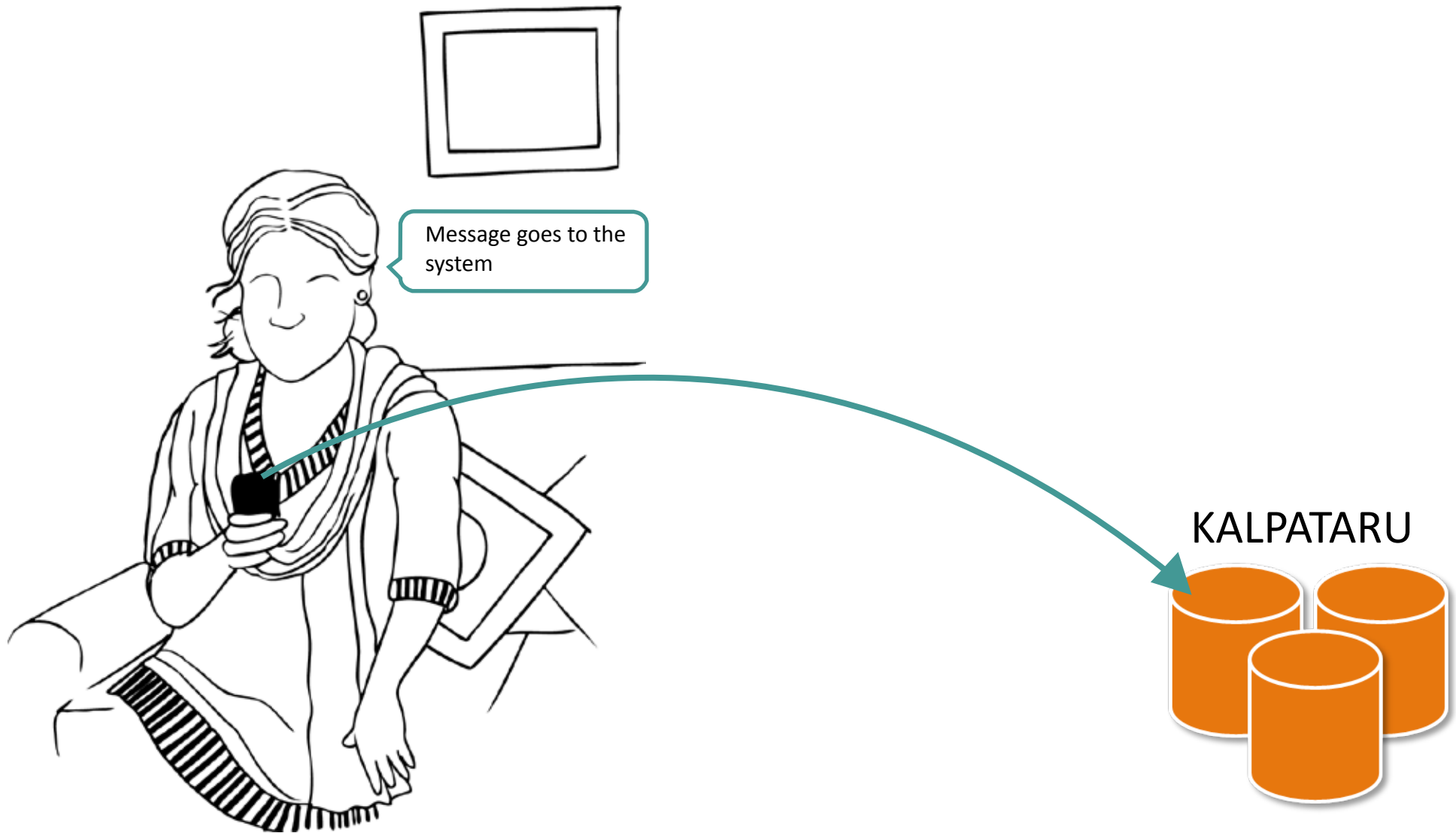
Find Back



The screenshot shows the Kalpataru mobile application interface. At the top, there is a blue header with the Kalpataru logo and a search icon. Below the header, there are three tabs: Search, History, and Pending. The Search tab is selected. The main content area displays a form with the following fields:

Select Employee	Plumber
Location	Bandra
Date of work	24 / 04 / 2009
Time of work	05: 00 pm
Type of work	Pipe blocked

At the bottom of the form, there are two buttons: "Find" (highlighted with a red border) and "Back".







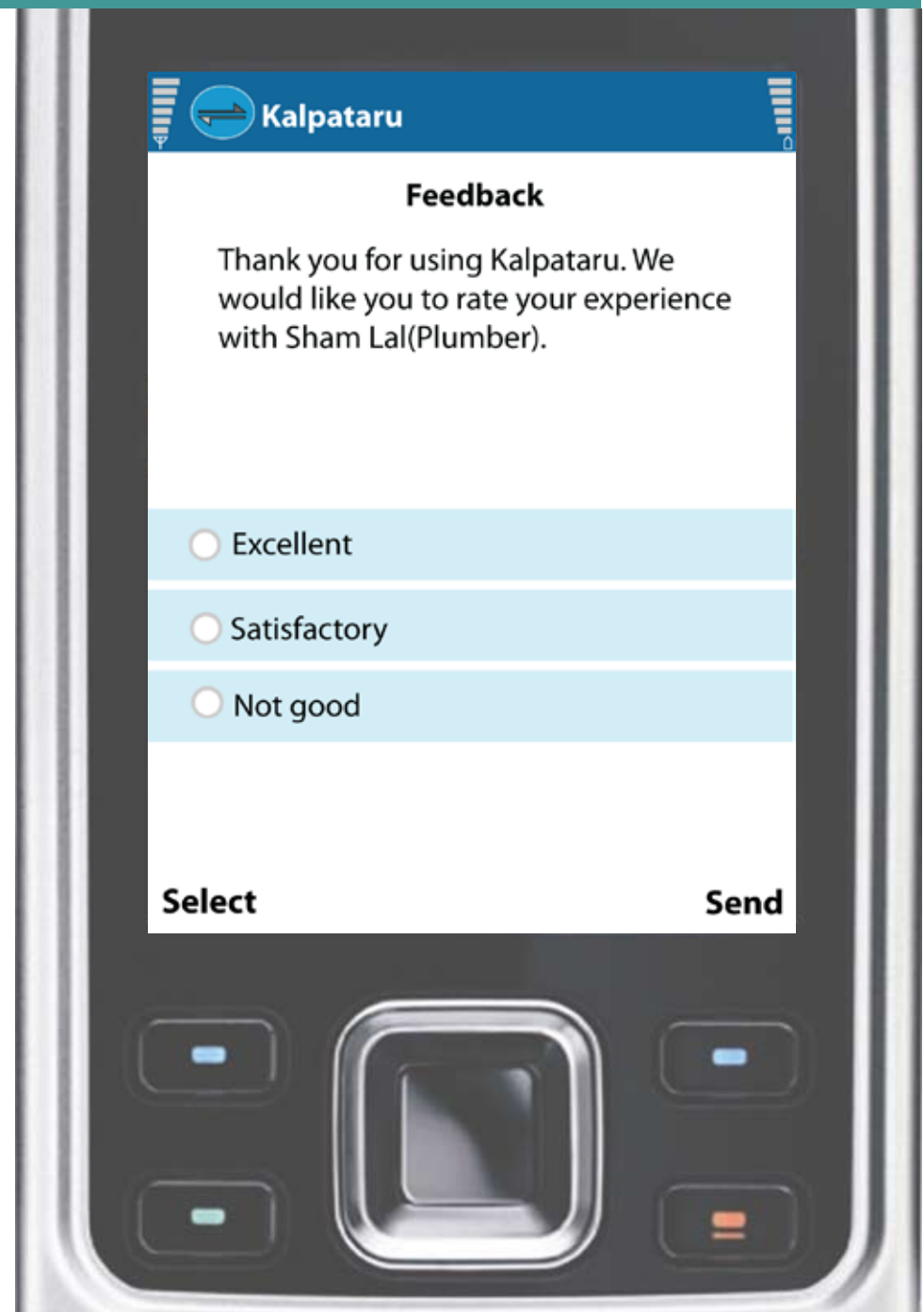


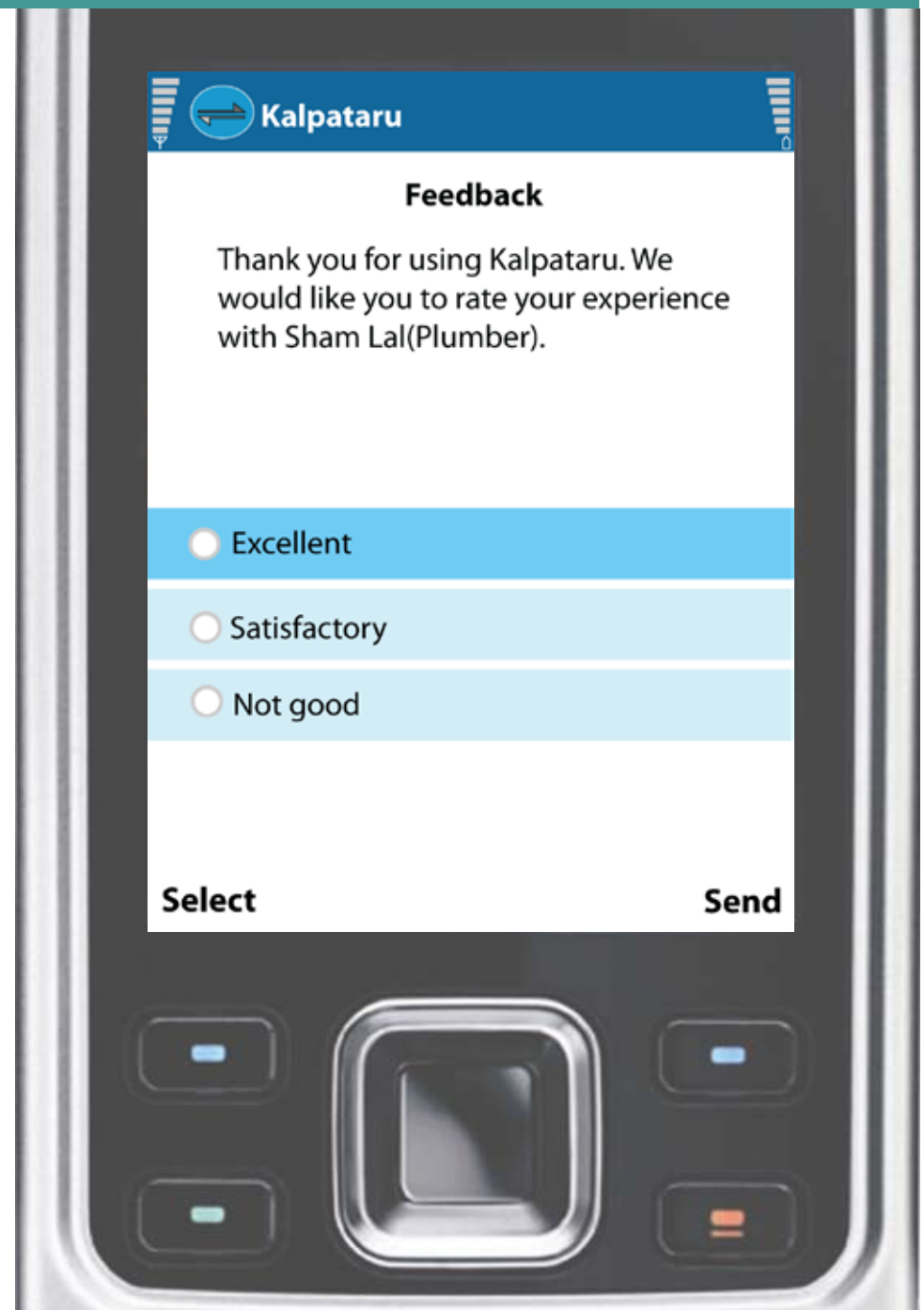


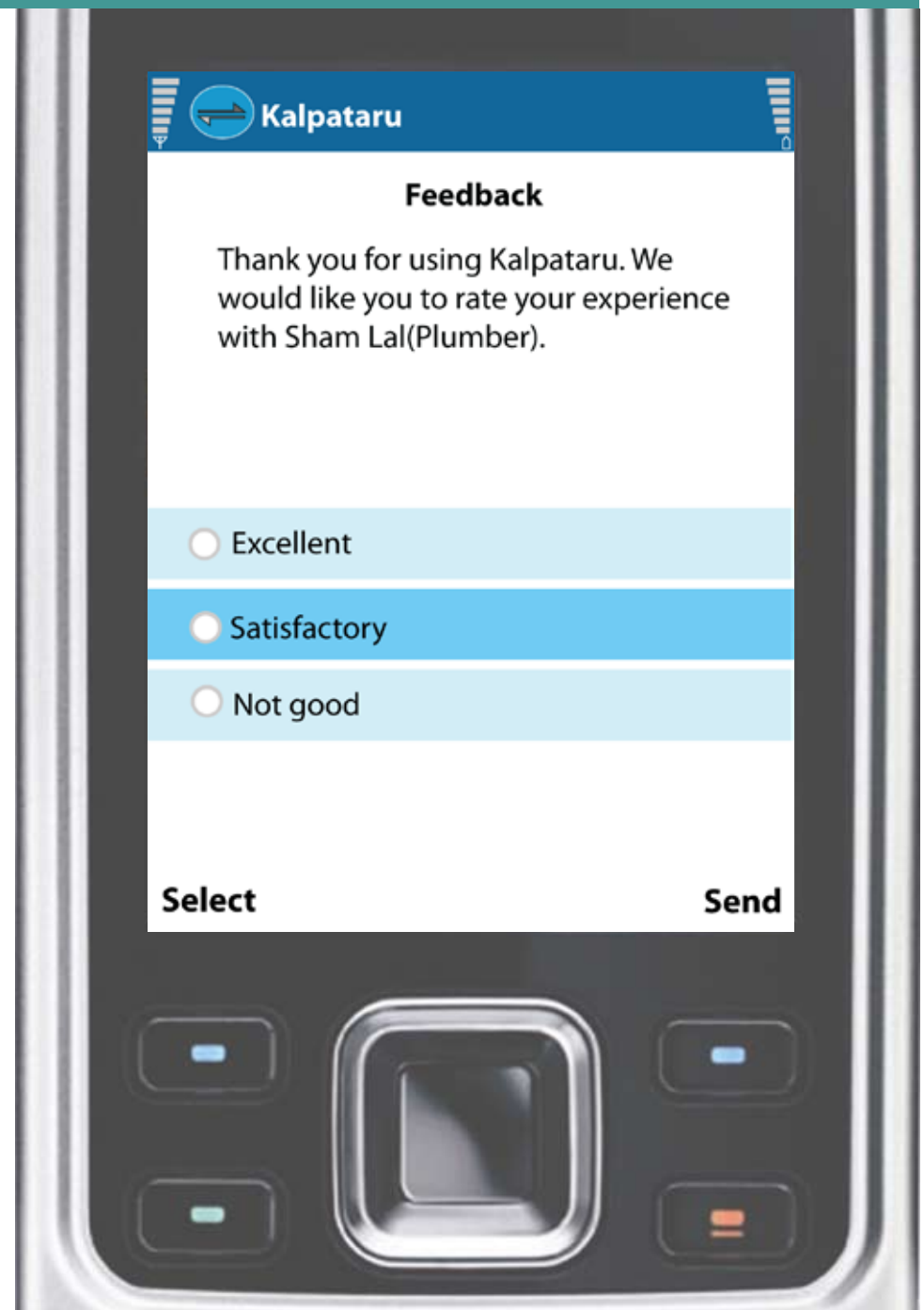


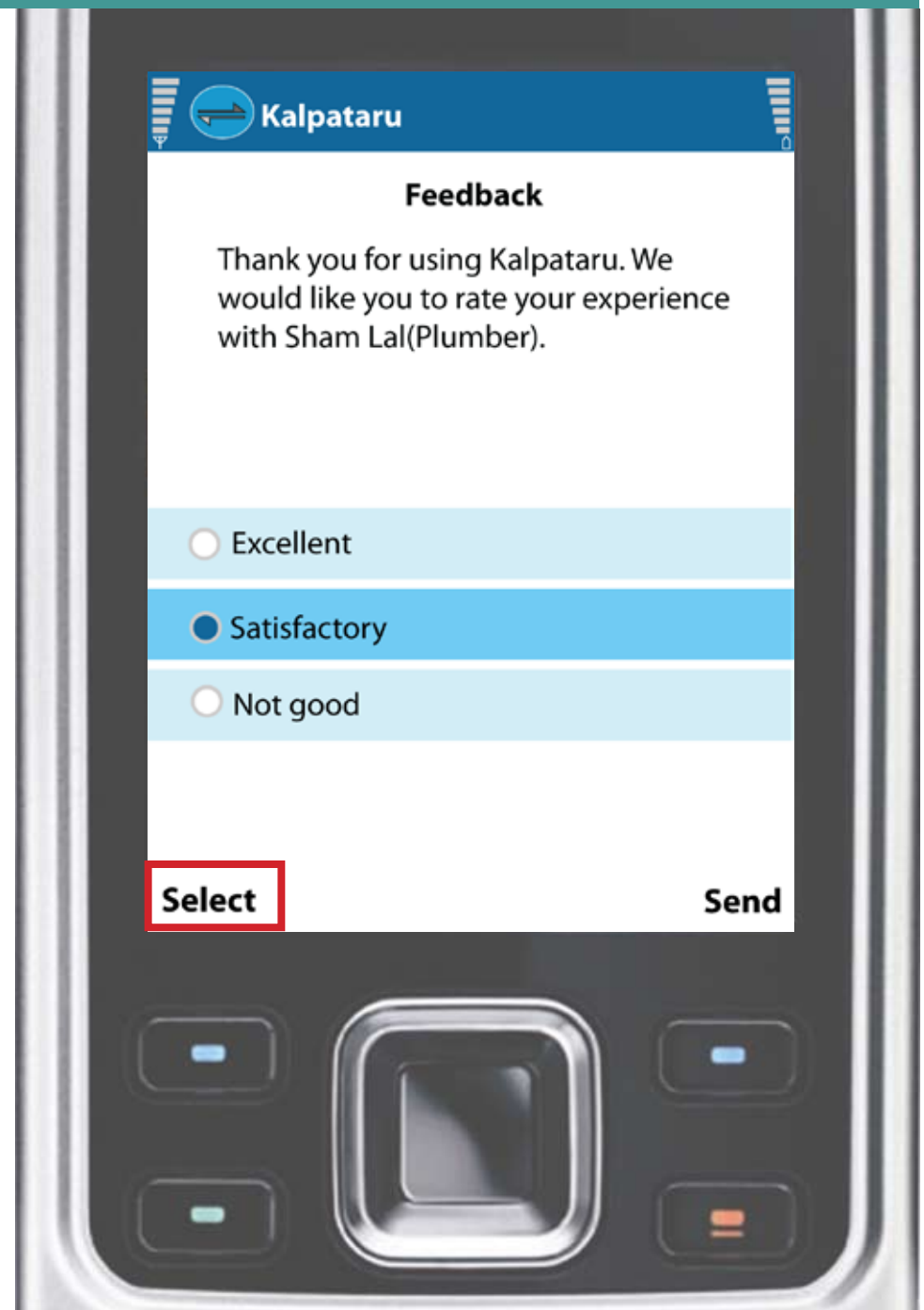














Mr.Hemanth has opened a small office in Mulund. He is looking for a carpenter who can make computer tables for his new office.

He came to know about this application and used it to find a carpenter.

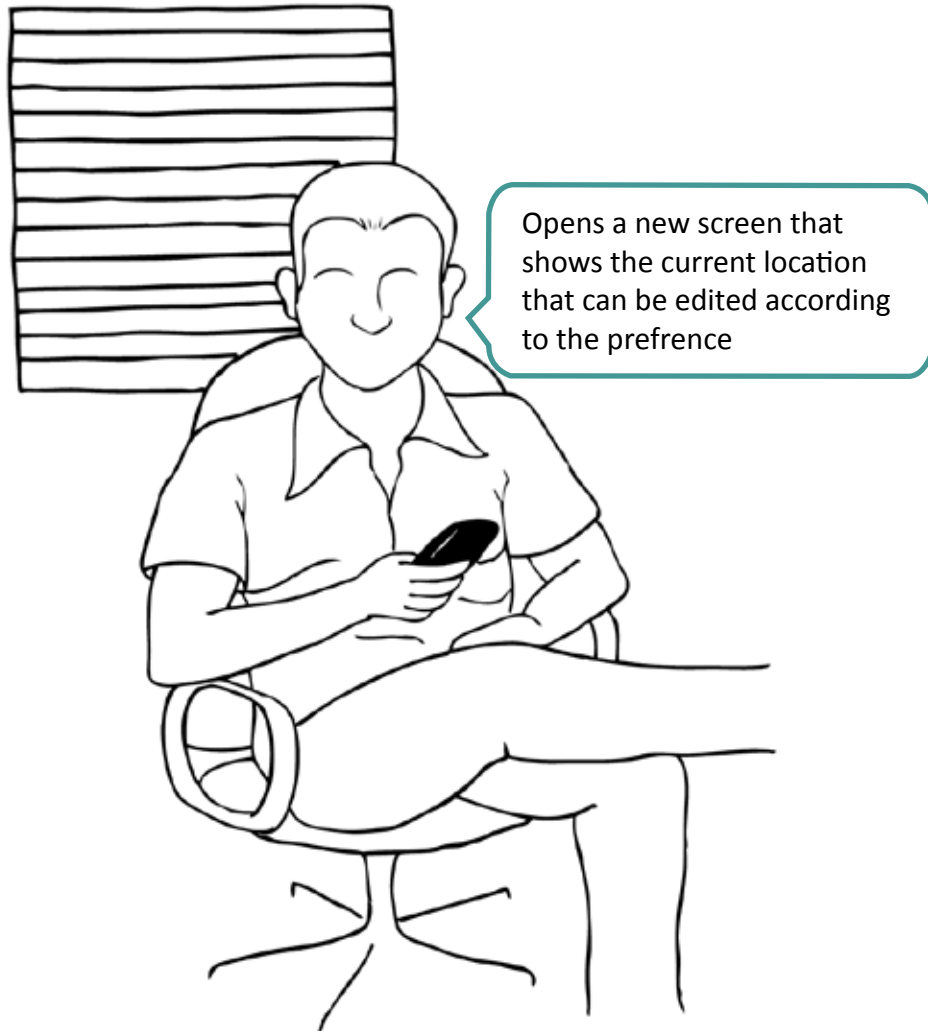












The screenshot shows the Kalpataru mobile application interface. At the top, there is a blue header bar with the Kalpataru logo and a search icon. Below the header, there are three tabs: Search, History, and Pending. The main form has the following fields:

Select Employee	Carpenter
Location	Mulund
Date of work	16 / 04 / 2009
Duration of work	
Type of work	

At the bottom of the form, there are two buttons: Options and Clear. The mobile phone's physical keypad is visible at the bottom of the screen.



Shows the current date in the date of work option

A screenshot of a mobile application interface titled "Kalpataru". The interface has a blue header bar with the title and a search icon. Below the header, there are three tabs: "Search" (highlighted), "History", and "Pending". The main content area is a form with several fields: "Select Employee" with the value "Carpenter", "Location" with the value "Mulund", "Date of work" with the value "16/04/2009", "Duration of work", and "Type of work". At the bottom of the form, there are two buttons: "Options" and "Clear". The interface is displayed on a mobile phone screen, with the physical keypad visible at the bottom.



Kalpataru

Search History Pending

Select Employee Carpenter

Location Mulund

Date of work 16 / 04 / 2009

Duration of work 5 days approximately

Type of work

Options Clear

The image shows a mobile application interface on a device. At the top, there is a blue header bar with the text "Kalpataru" and a circular icon containing a right-pointing arrow. Below the header, there are three tabs: "Search" (highlighted in blue), "History", and "Pending". The main content area consists of several light blue rows, each representing a search criterion. The first row is "Select Employee" with the value "Carpenter". The second row is "Location" with the value "Mulund". The third row is "Date of work" with the value "16 / 04 / 2009". The fourth row is "Duration of work" with the value "5 days approximately". The fifth row is "Type of work", which is currently empty. At the bottom of the form area, there are two buttons: "Options" on the left and "Clear" on the right. Below the screen, the physical keypad of the mobile device is visible, featuring a central square navigation pad and four surrounding function buttons (top-left, top-right, bottom-left, bottom-right).

The screenshot shows the Kalpataru mobile application interface. At the top, there's a blue header with the Kalpataru logo and a search icon. Below the header, there are three tabs: "Search" (selected), "History", and "Pending". The main content area displays search filters: "Select Employee" (Carpenter), "Location" (Mulund), "Date of work" (16 / 04 / 2009), "Duration of work" (5 days approximately), and "Type of work" (with an empty input field). At the bottom, there are "Find" and "Clear" buttons. The device's physical keypad is visible at the very bottom.

Scenario 2 - Finding a Carpenter

The image shows a mobile application interface on a device with a physical keypad. The app is titled "Kalpataru" with a logo featuring a blue circle and a white arrow. Below the title are three tabs: "Search" (highlighted), "History", and "Pending". The main form contains several input fields:

- "Select Employee" with the value "Carpenter"
- "Location" with the value "Mulund"
- "Date of work" with the value "16 / 04 / 2009"
- "Duration of work" with the value "5 days approximately"
- "Type of work" with the value "Computer table" (highlighted)

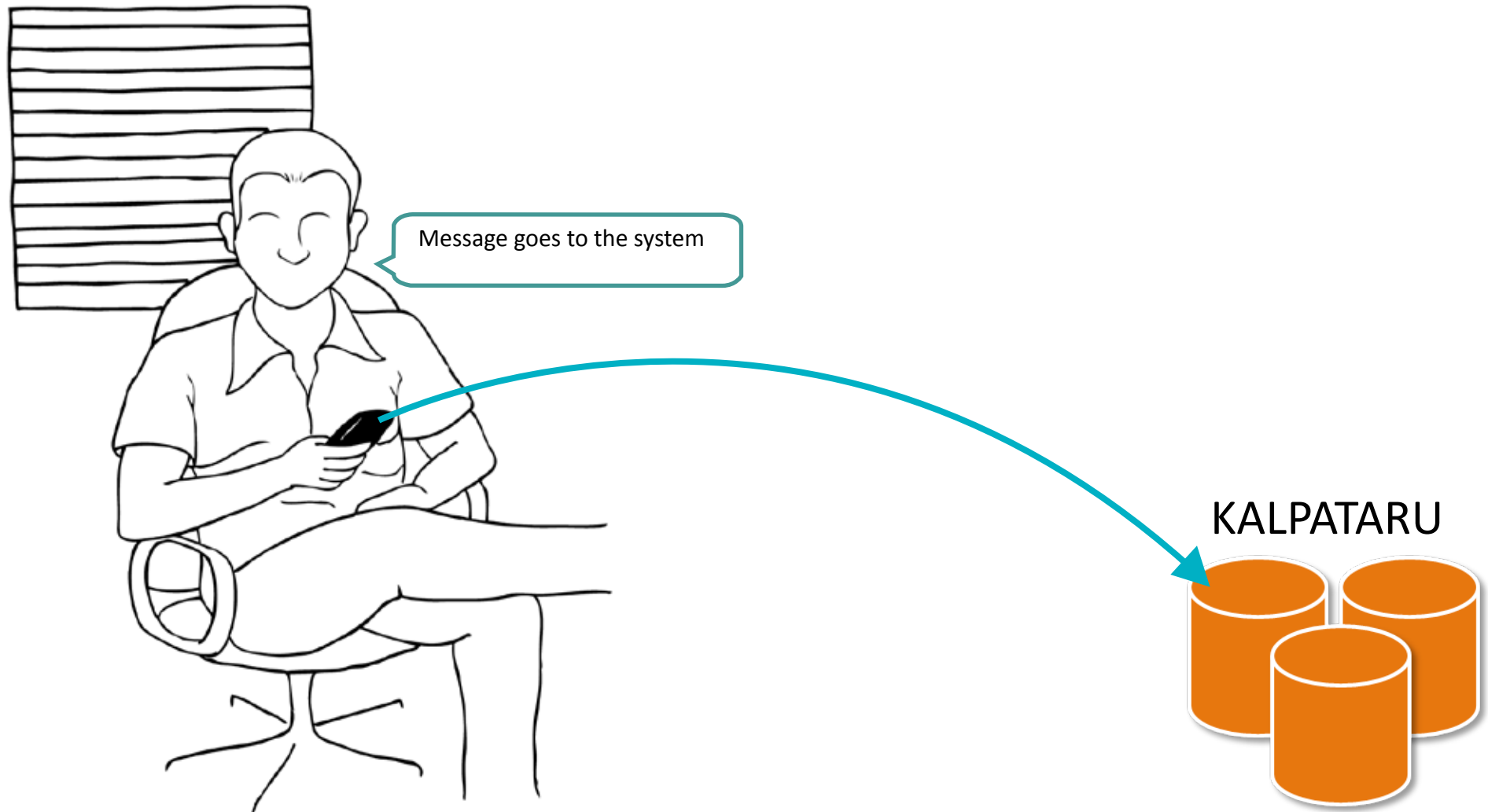
At the bottom of the form are two buttons: "Find" on the left and "Clear" on the right. The physical keypad at the bottom of the device includes a central square button, four smaller buttons (two blue, two orange), and a green button.



The screenshot shows the Kalpataru mobile application interface. At the top, there is a blue header with the Kalpataru logo and a search bar. Below the header, there are three tabs: Search, History, and Pending. The Search tab is selected. The search criteria are displayed in a table format:

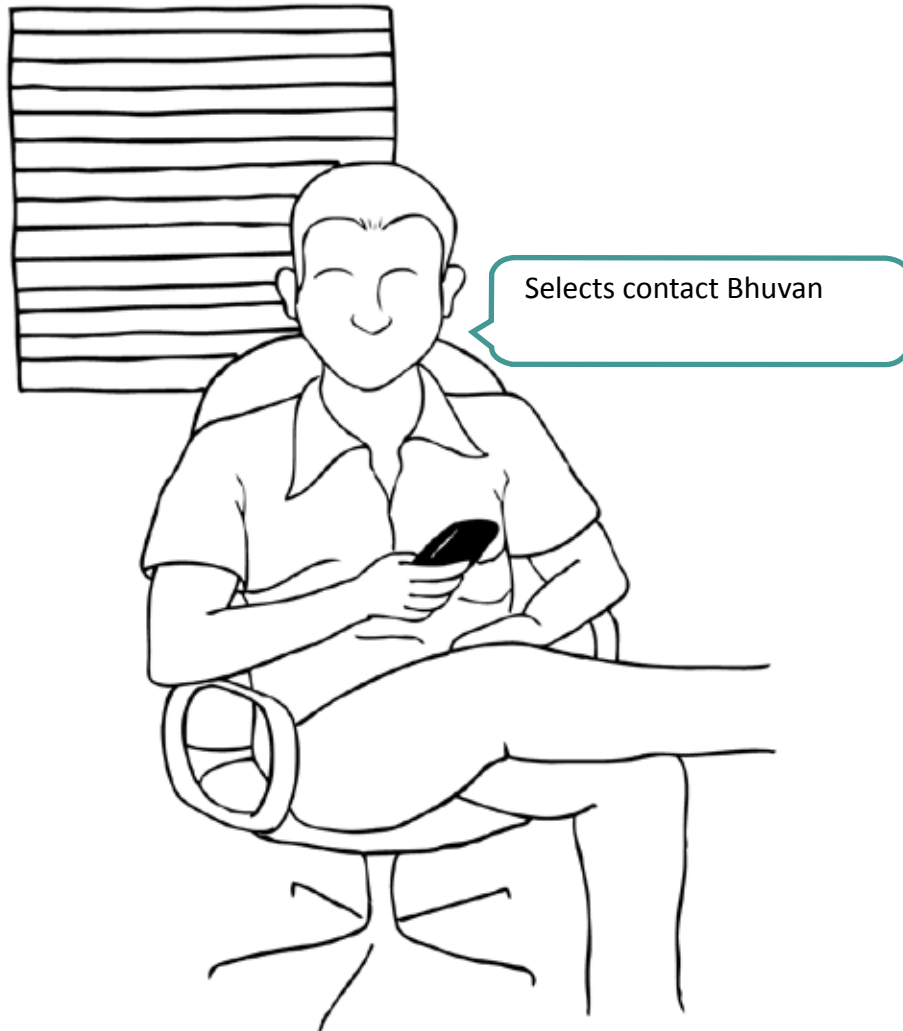
Select Employee	Carpenter
Location	Mulund
Date of work	16 / 04 / 2009
Duration of work	5 days approximately
Type of work	Computer table

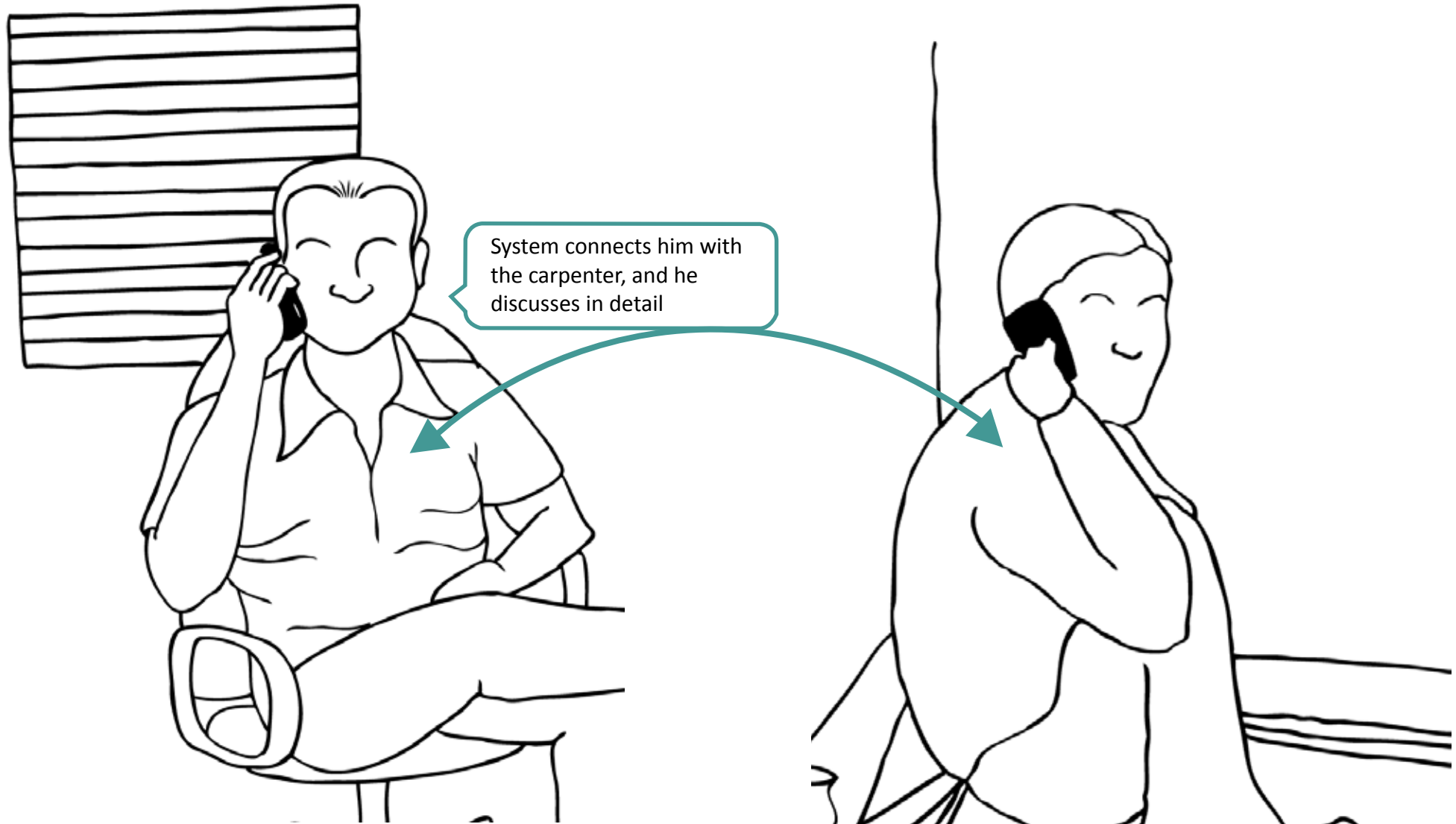
At the bottom of the screen, there are two buttons: Find (highlighted with a red border) and Clear. Below the buttons is a numeric keypad with a central square button and four corner buttons.



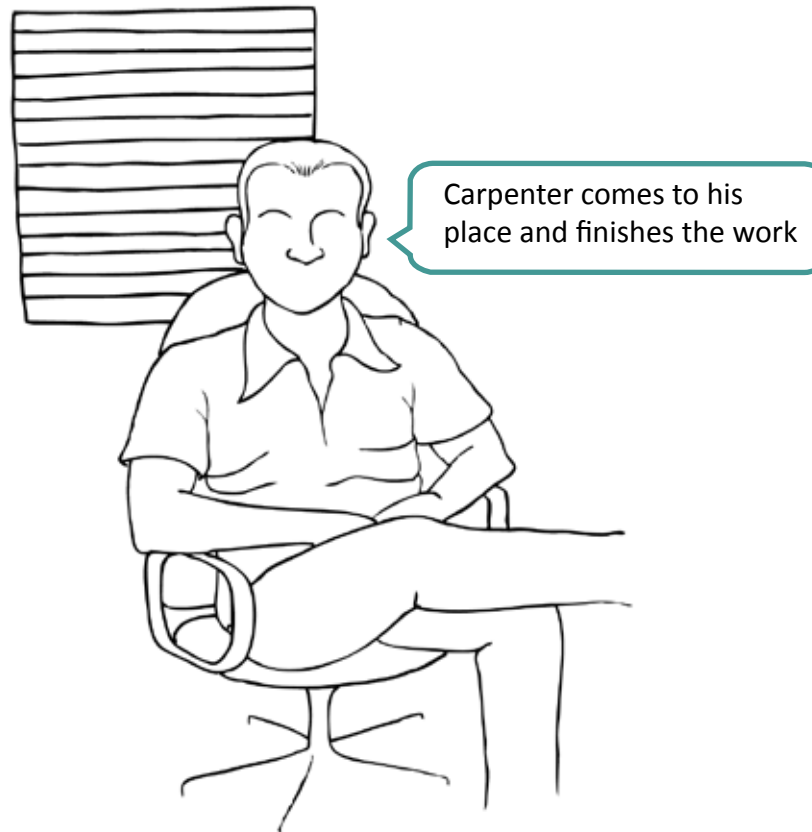




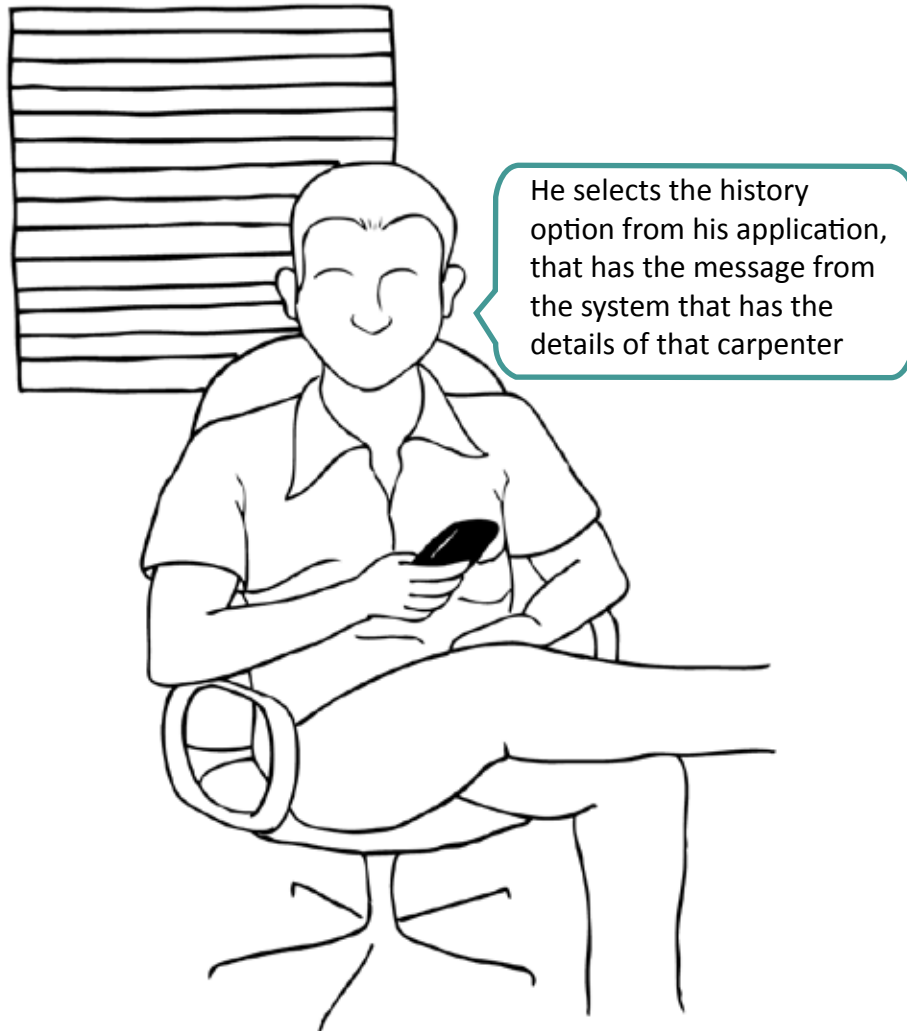






















Kalpataru

Feedback

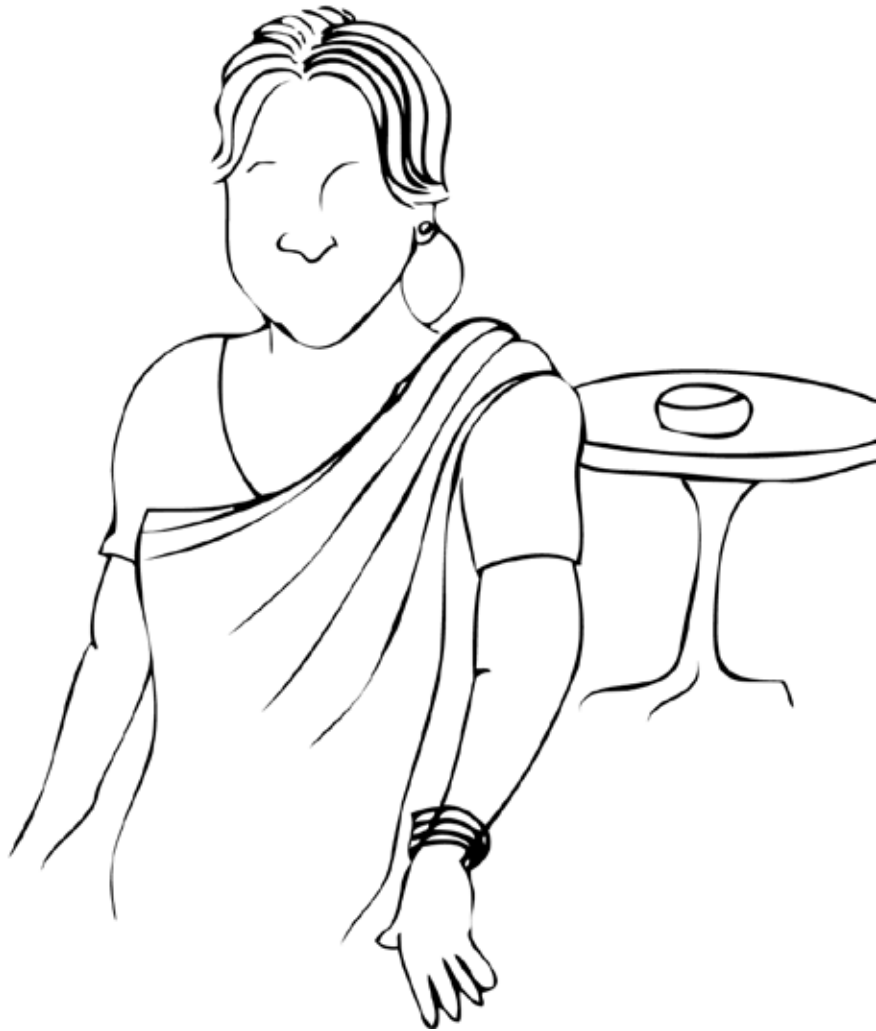
Thank you for using Kalpataru. We would like you to rate your experience with Bhuvan(Carpenter).

☐ Excellent

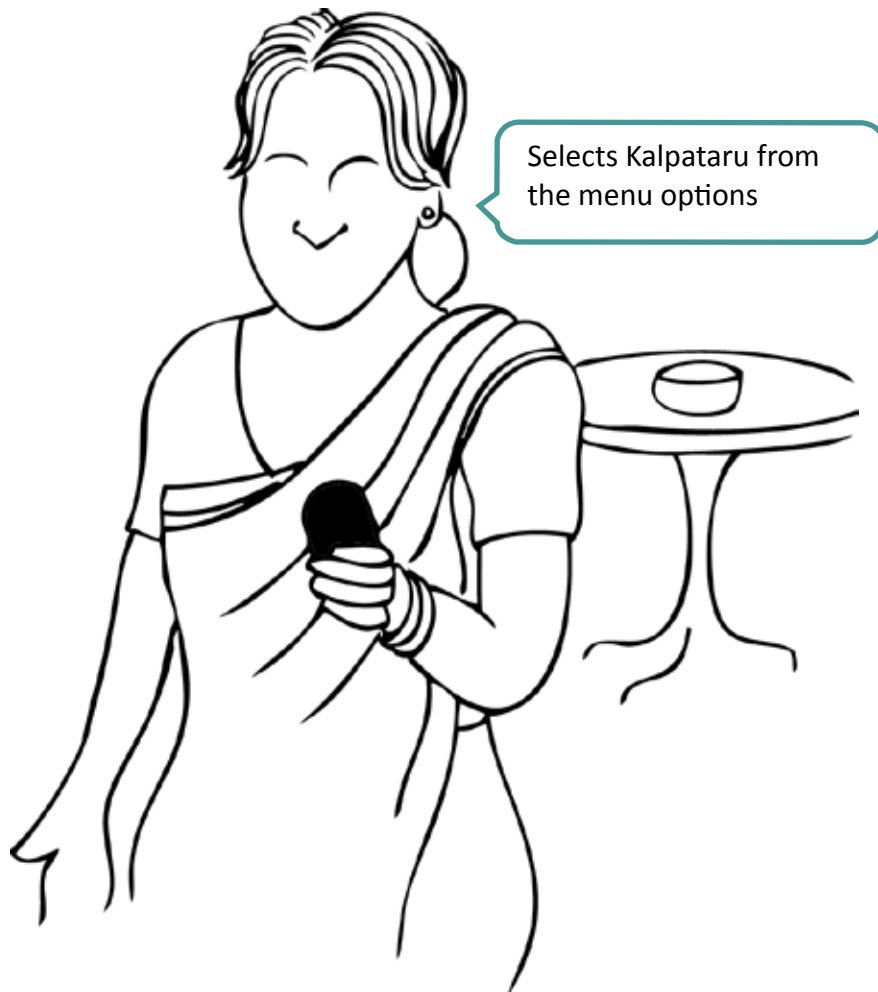
☐ Satisfactory

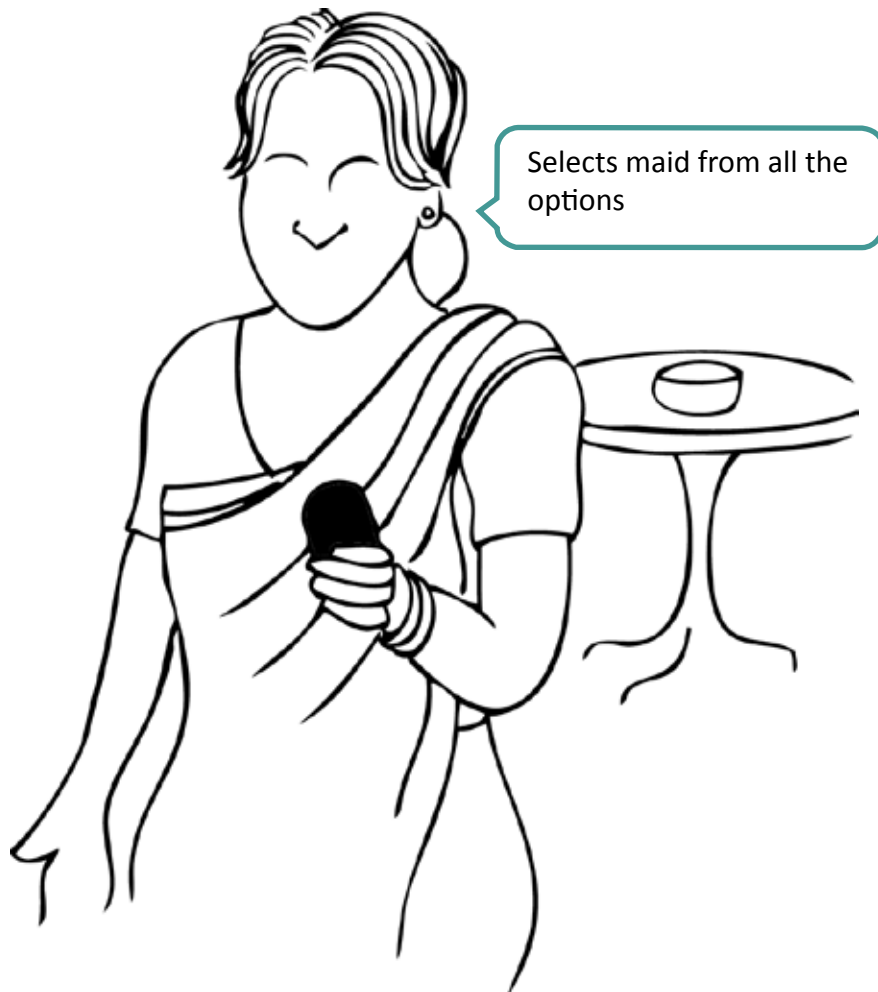
☐ Not good

Select **Send**



Mrs. Patvardhan is a housewife. Currently she is staying in Malad and after two days she is shifting to her new house in Bandra. She wants to find a new maid for her new house through Kalpataru.



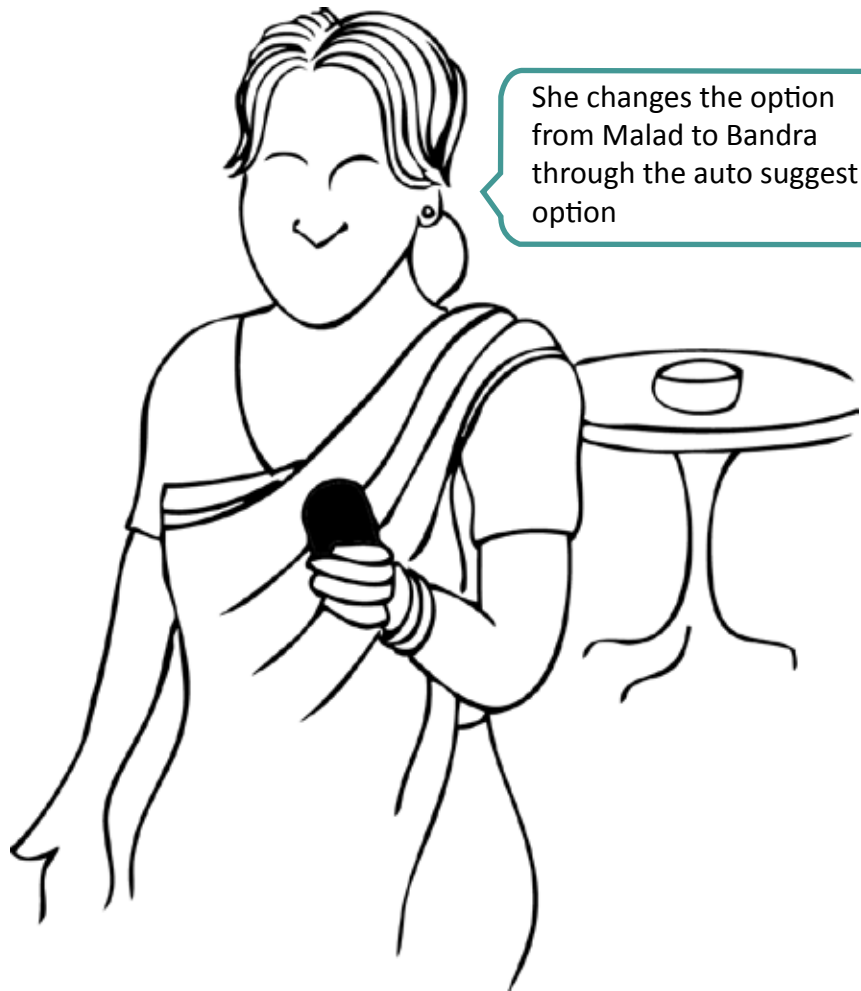










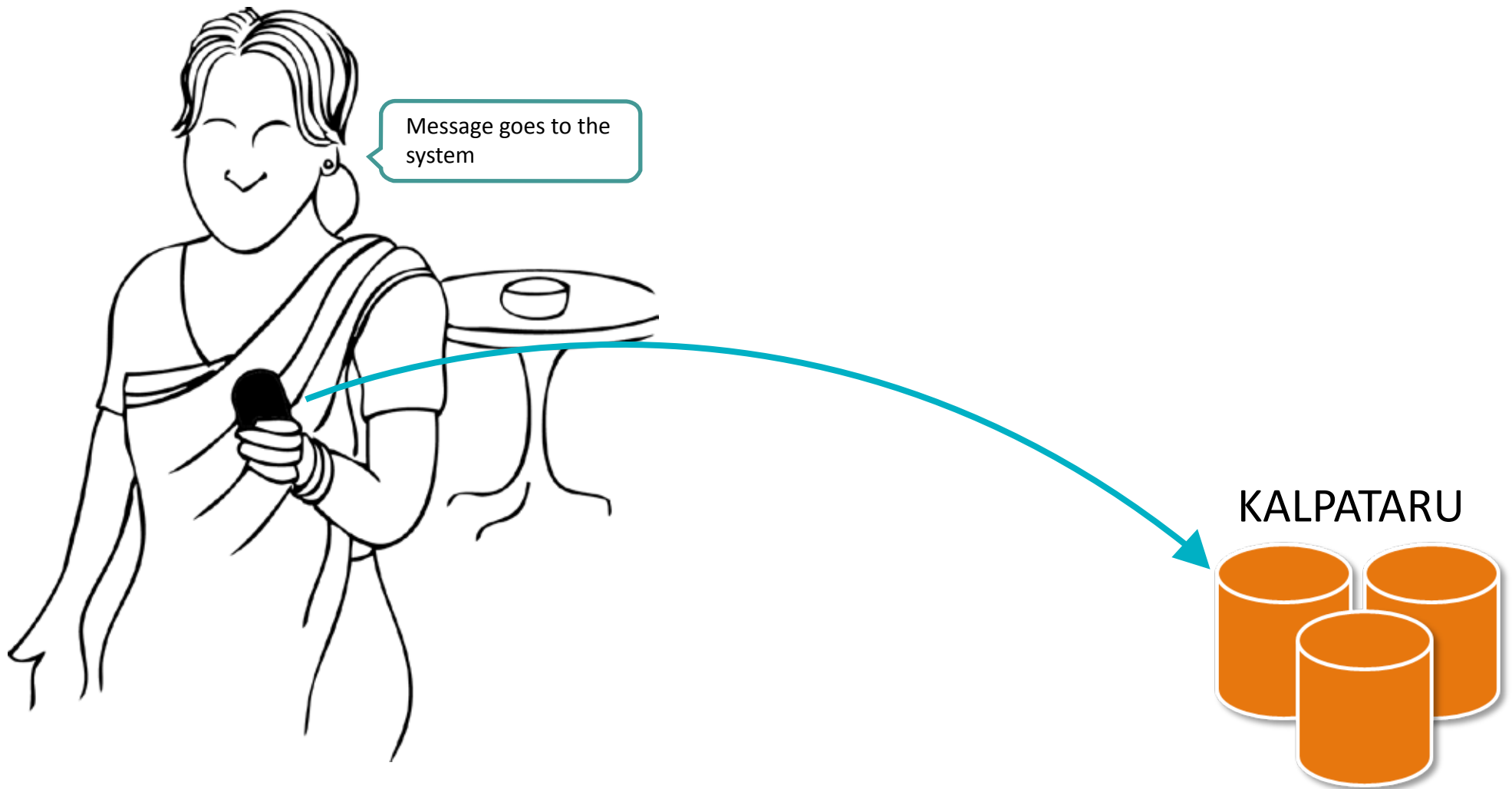










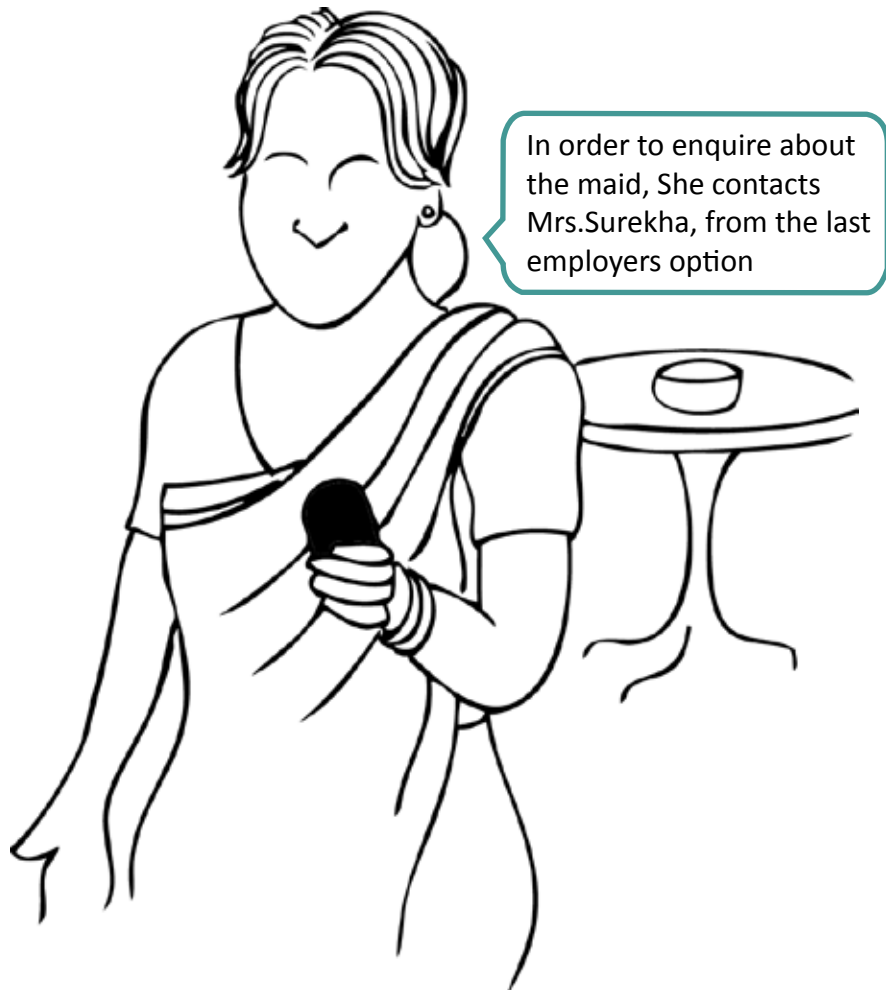


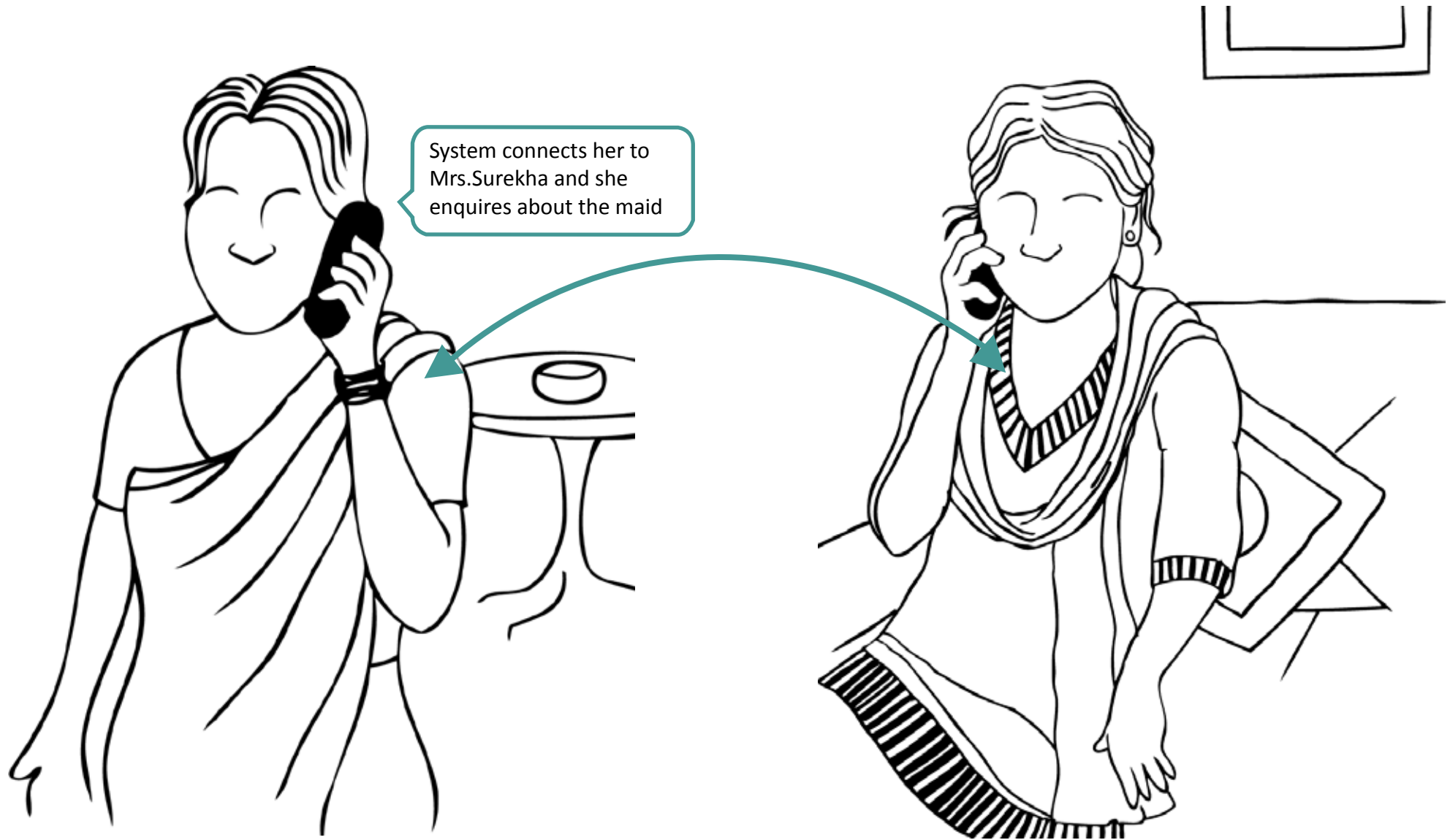


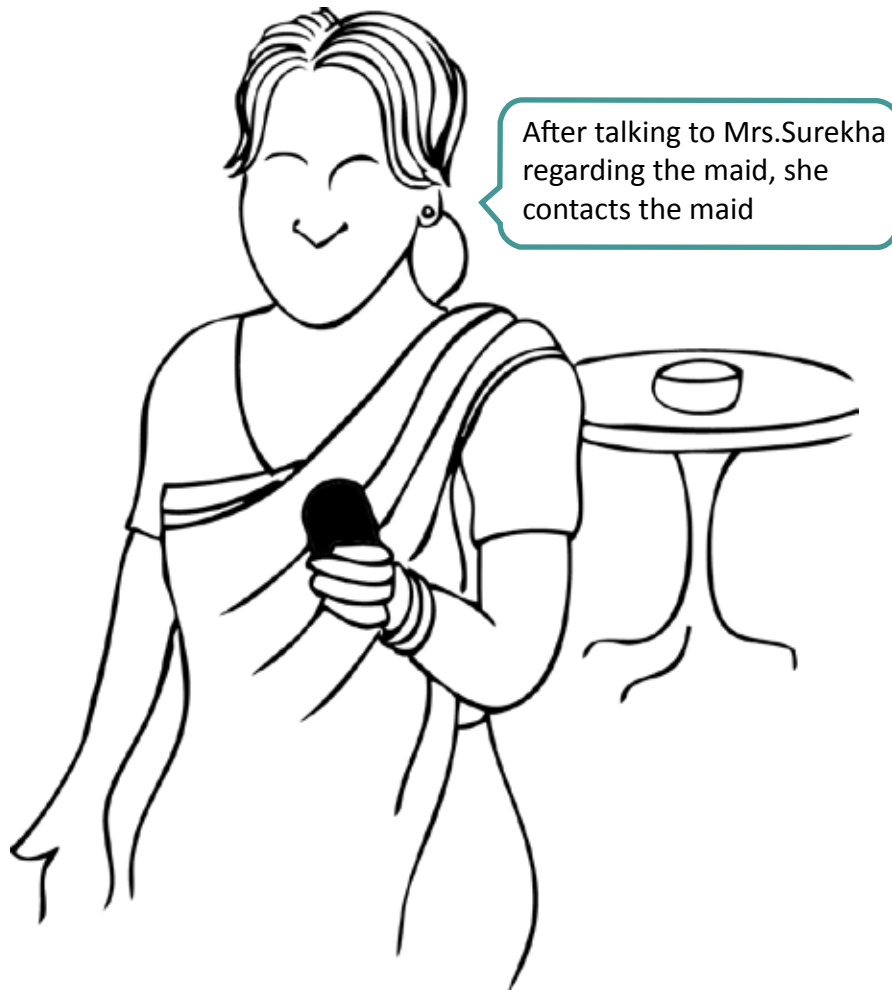
After few minutes, she receives a message from the system

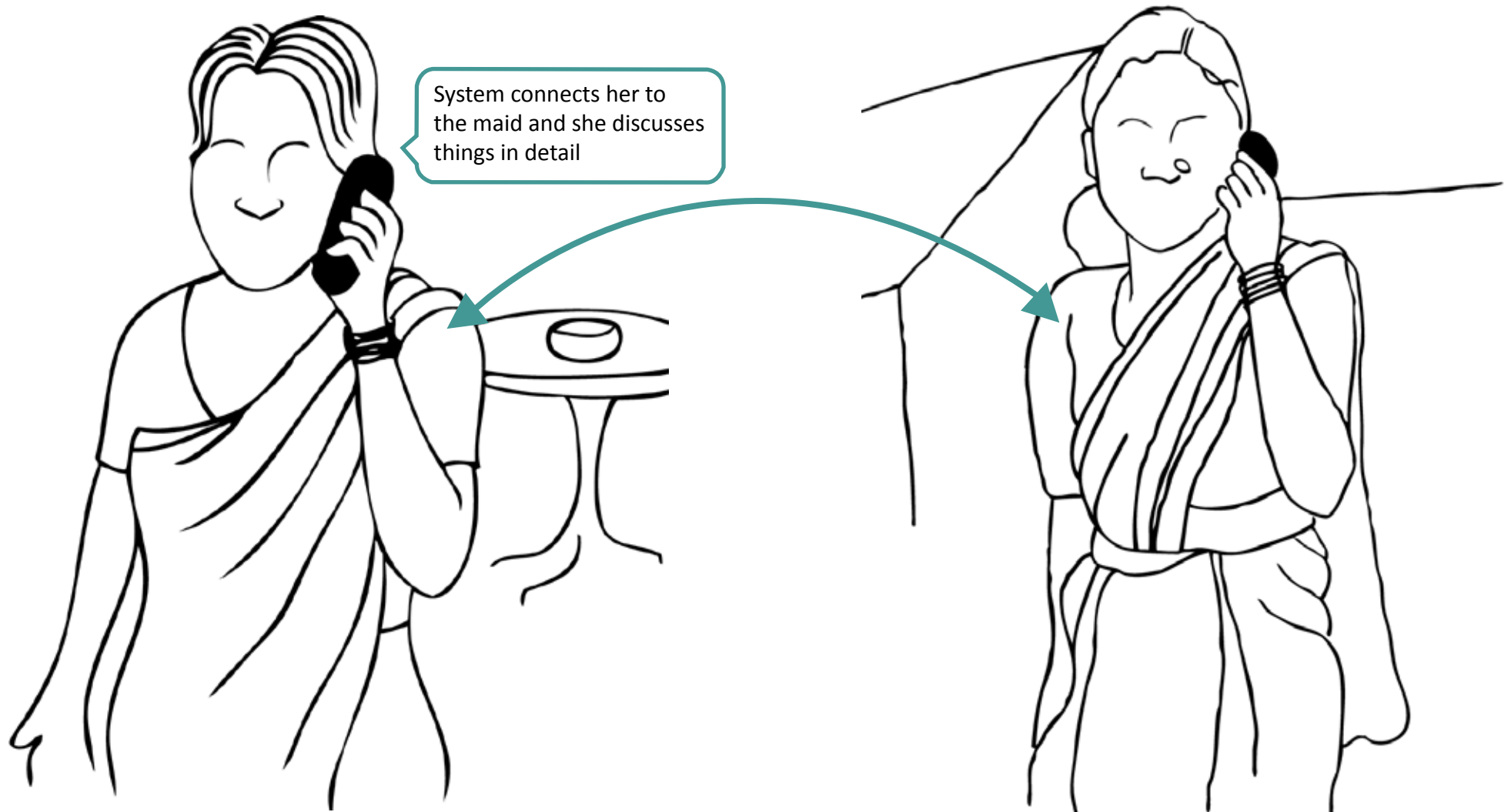




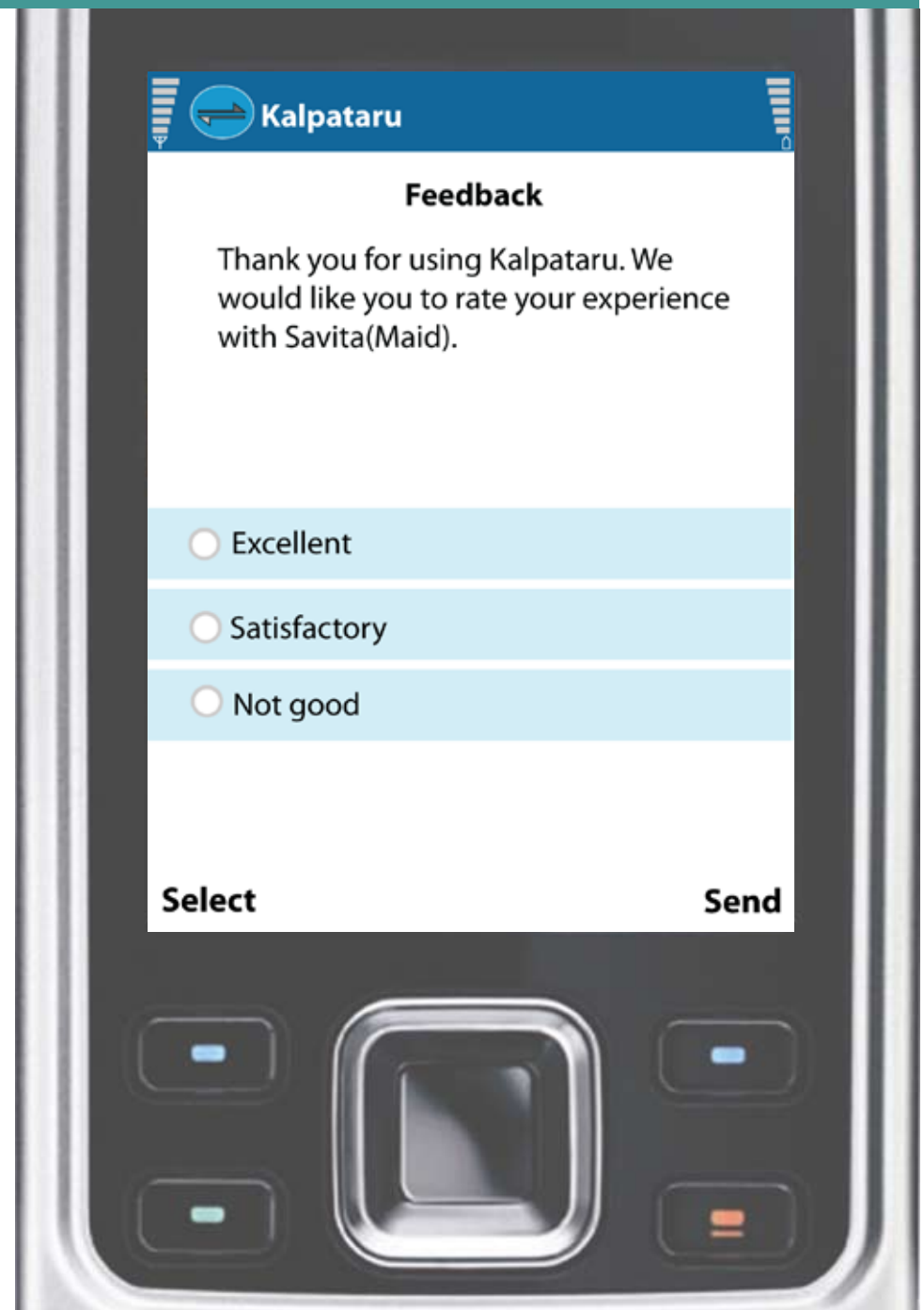








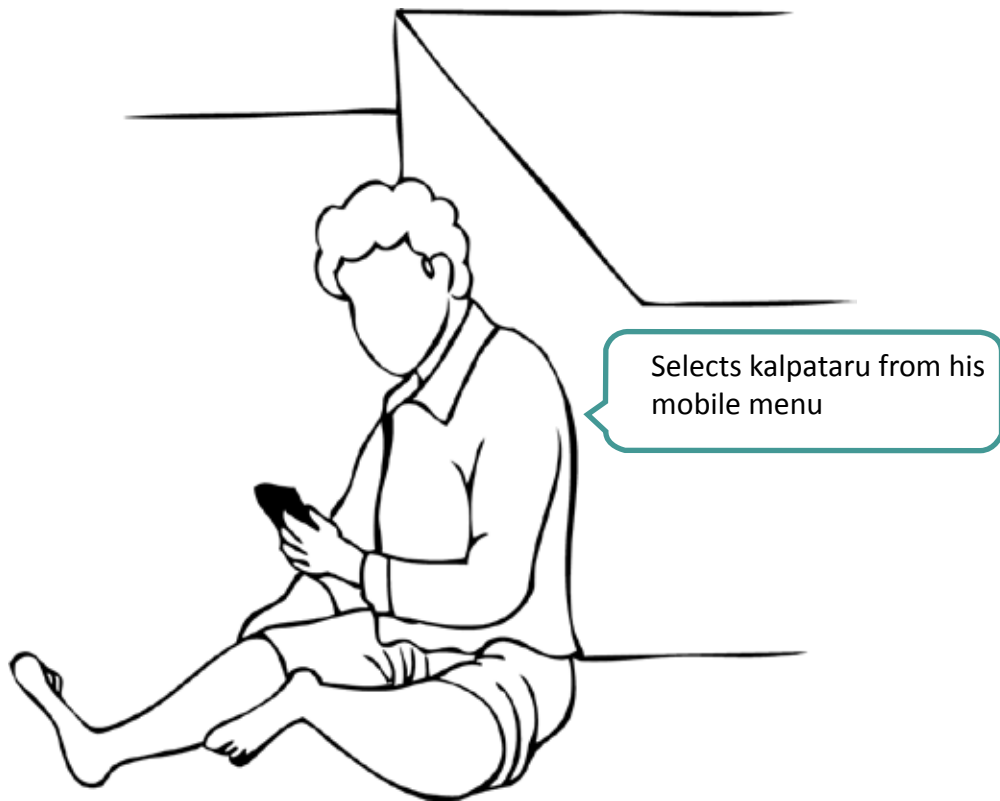


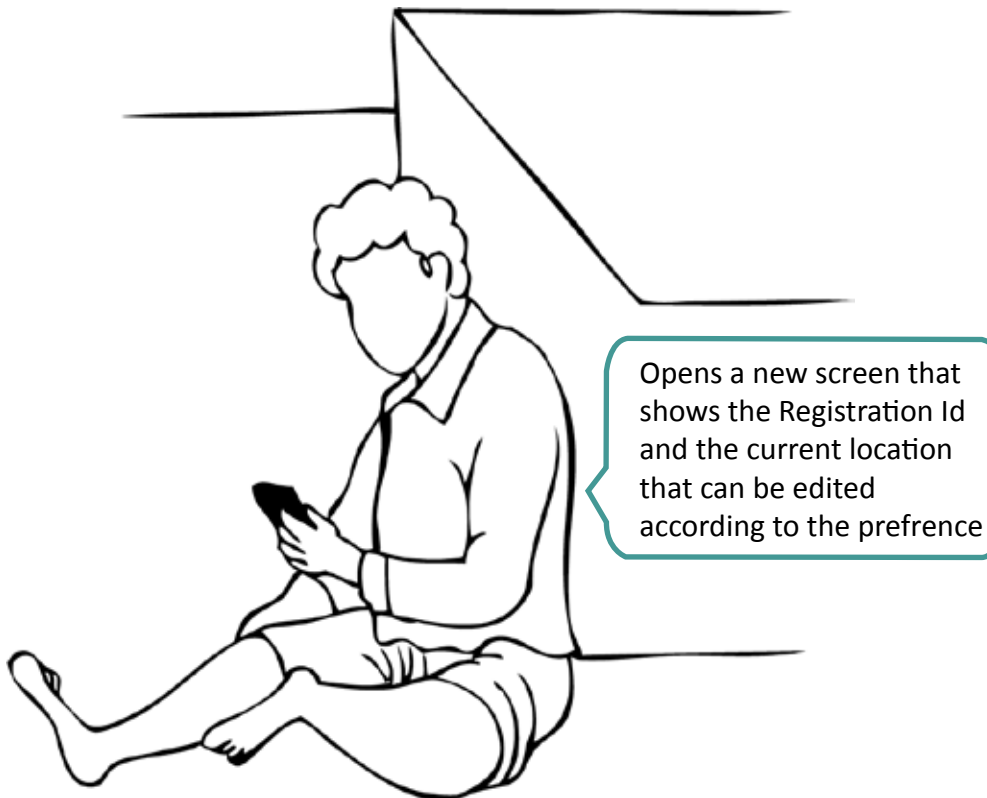


Scenario 4 - Employee finding an Employer



Bhuvan is a working as a plumber since last 4 years. He uses Kalpataru for finding employment.





The screenshot shows the Kalpataru mobile application interface. At the top, there is a blue header with the Kalpataru logo and name. Below the header, there are three tabs: Search, History, and Pending. The Search tab is selected. The main screen displays the following information:

- Find Employer**
- Registration ID**: P 1128
- Location**: Bandra

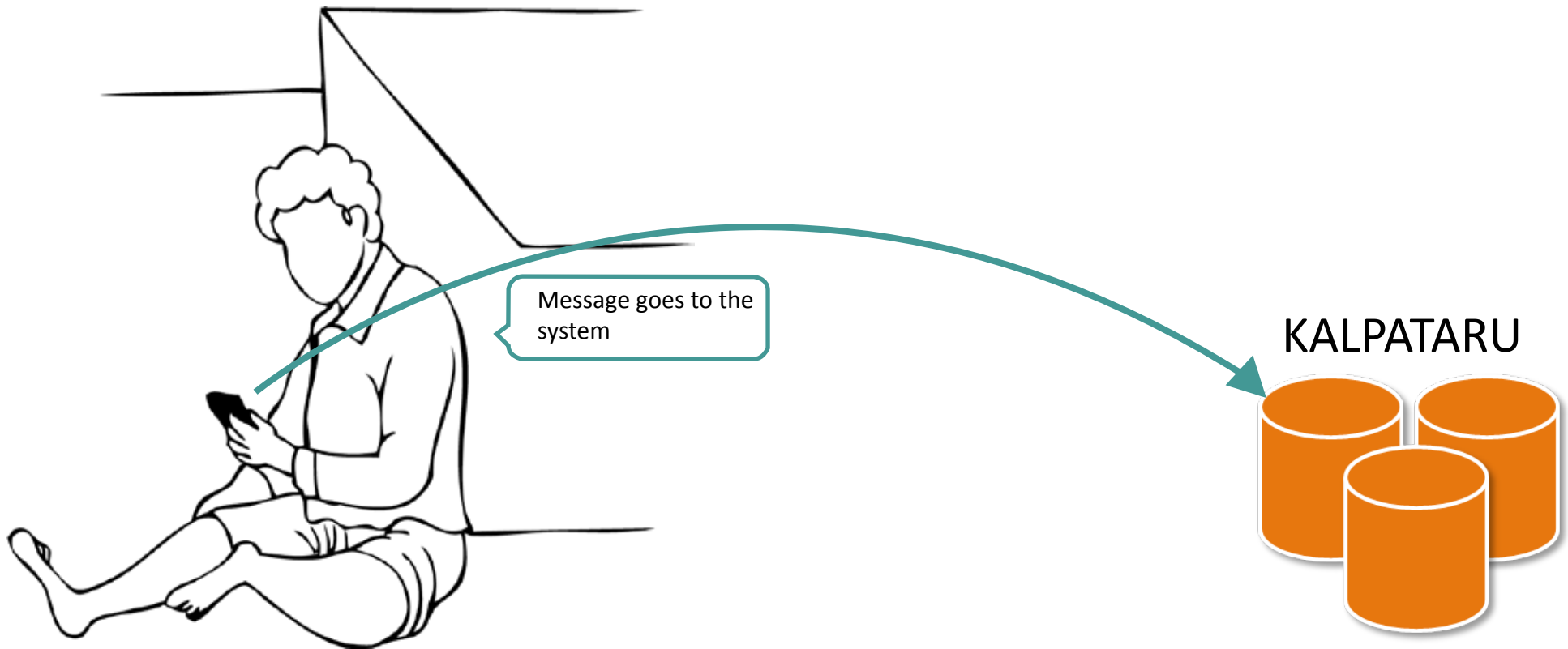
At the bottom of the screen, there are two buttons: Find and Clear. Below the screen, there is a physical keypad with a central square button and four smaller buttons (two blue, two orange) around it.



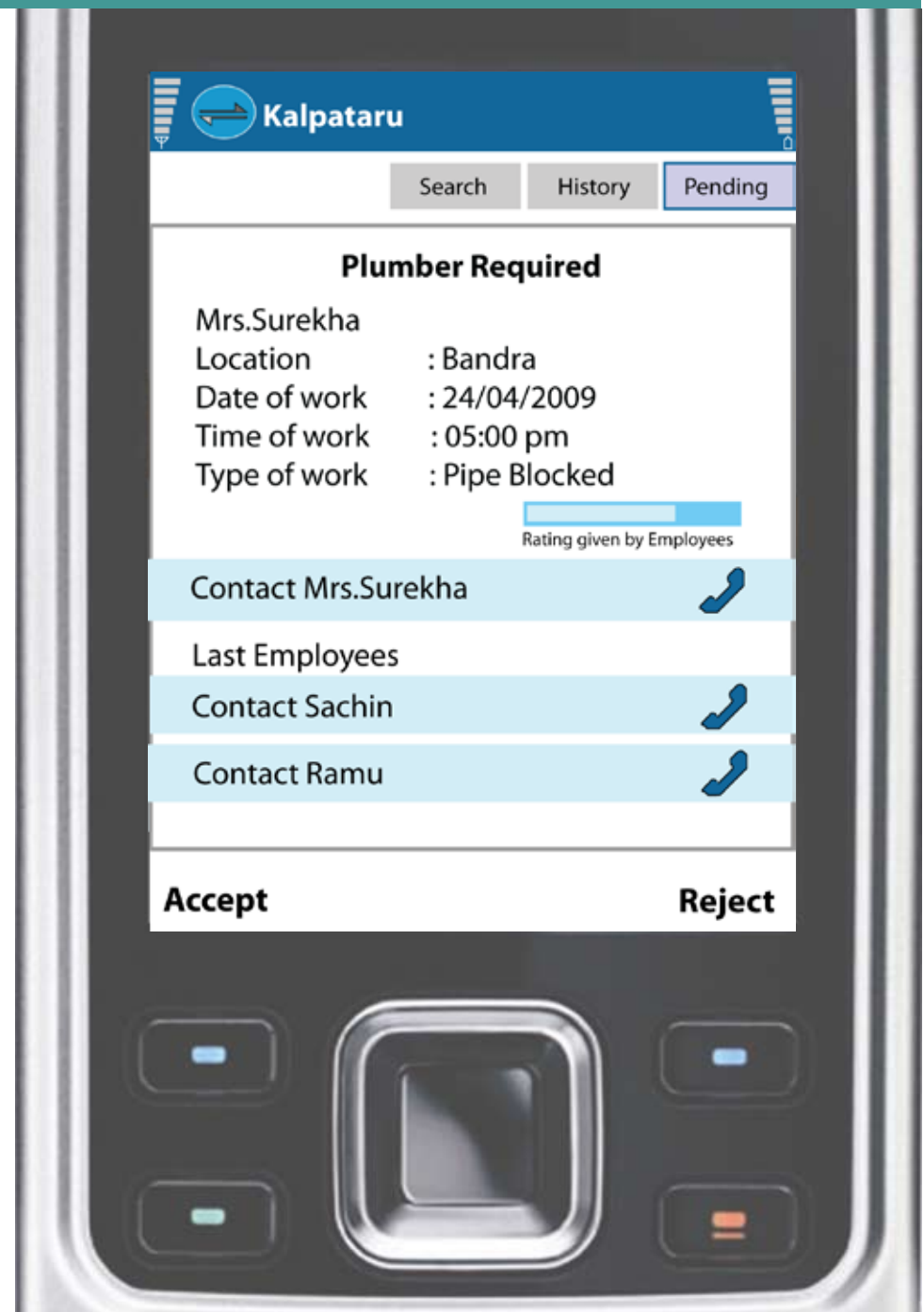
The screenshot shows the Kalpataru mobile application interface. At the top, there is a blue header with the Kalpataru logo and name. Below the header, there are three tabs: Search, History, and Pending. The Search tab is selected. The main content area displays the following information:

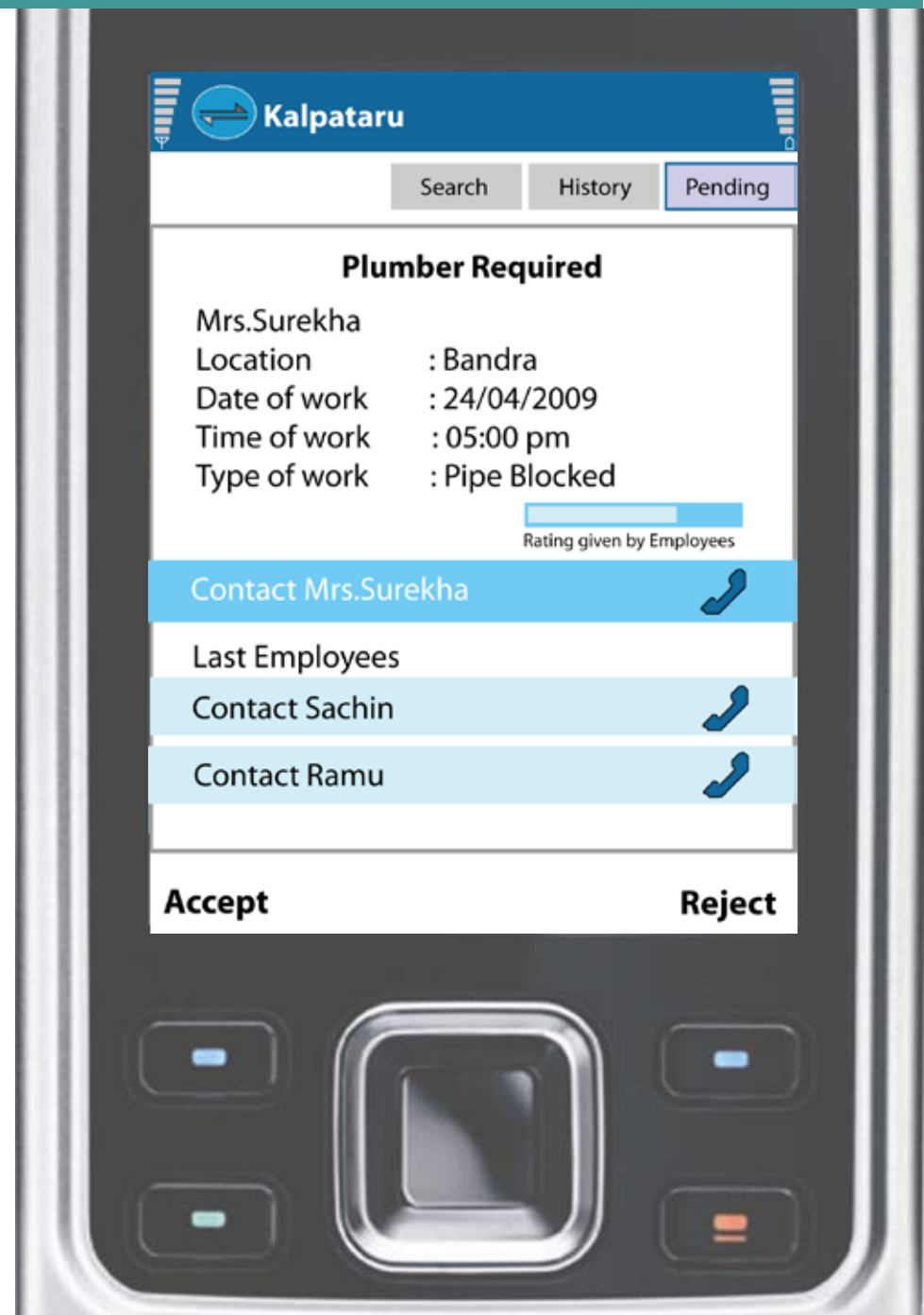
Find Employer	
Registration ID	P 1128
Location	Bandra

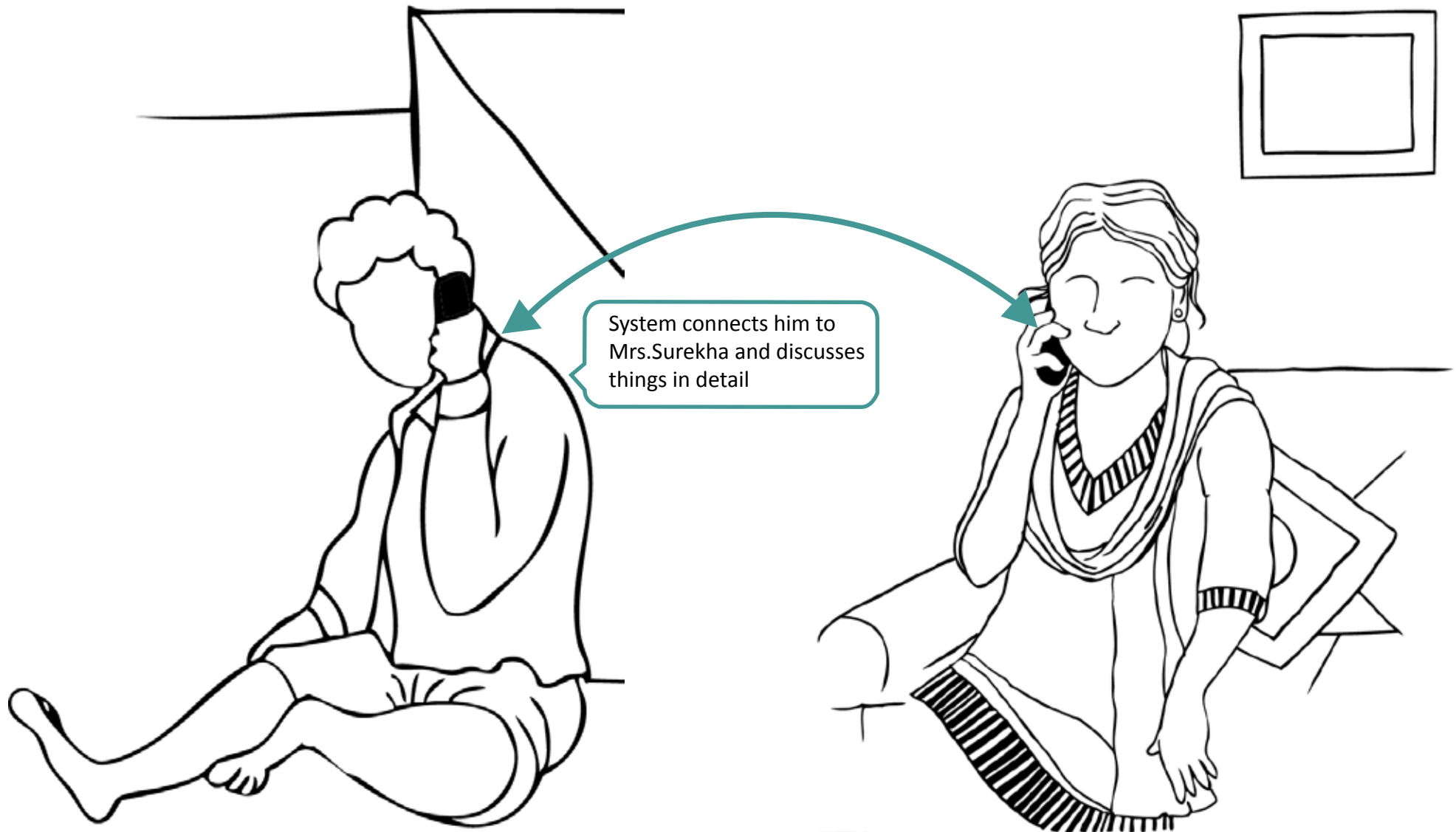
At the bottom of the screen, there are two buttons: Find (highlighted with a red border) and Clear. Below the buttons is a numeric keypad with a central square button and four corner buttons.

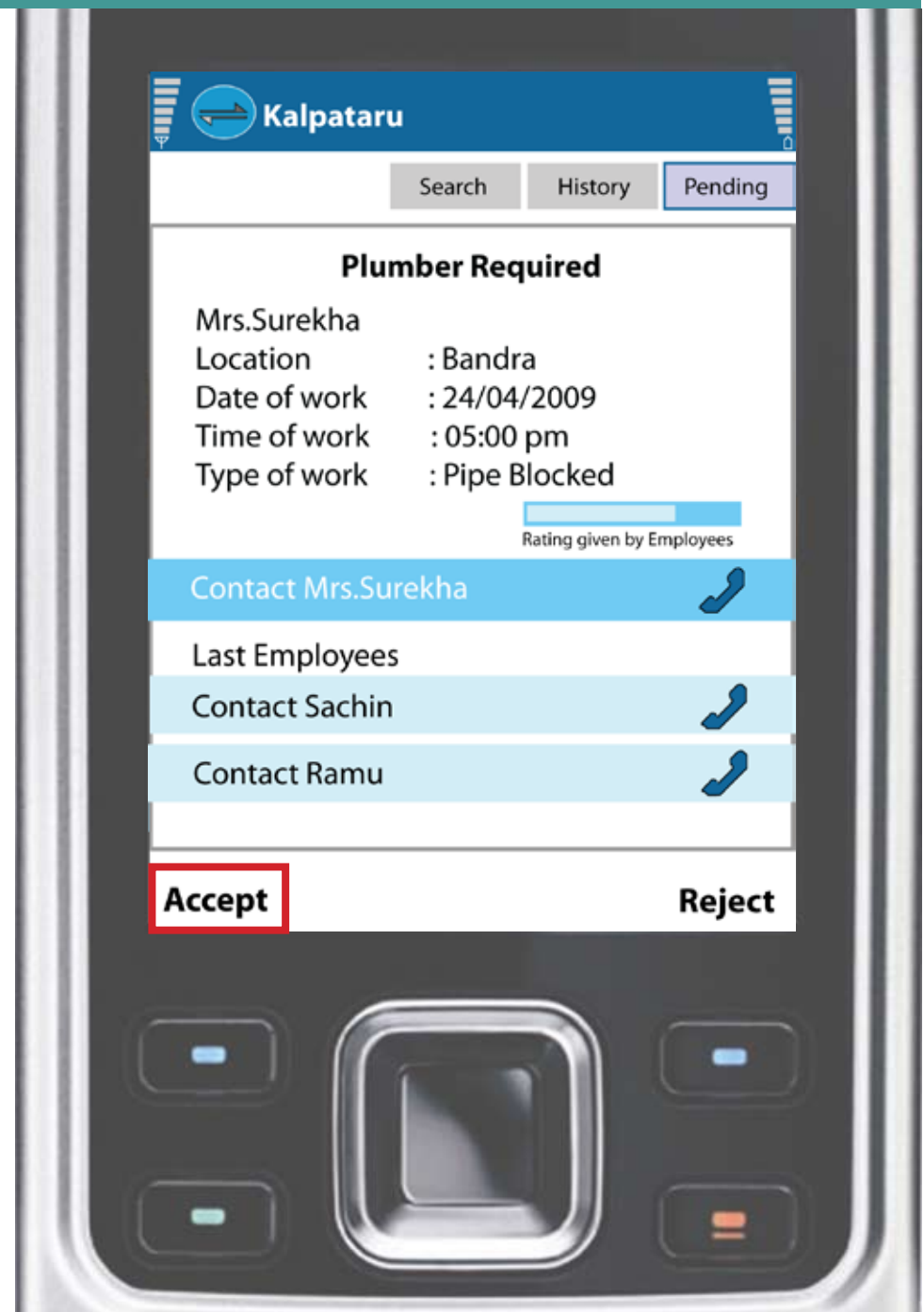




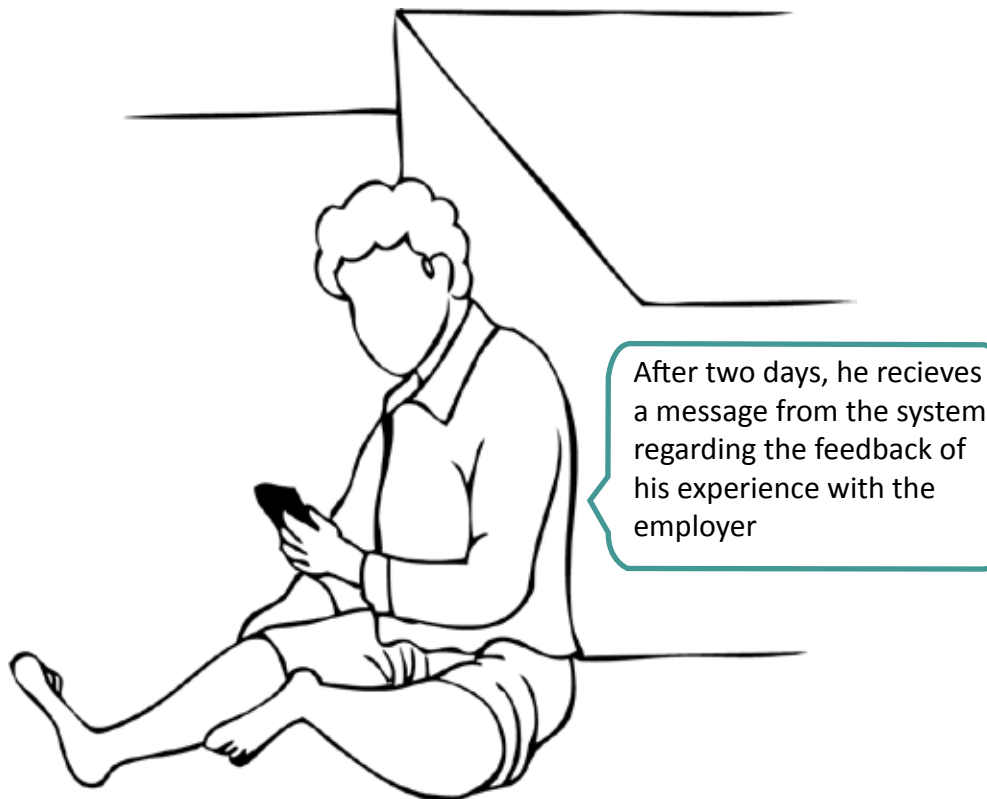












Kalpataru

Feedback

Thank you for using Kalpataru. We would like you to rate your experience with Mrs. Surekha on 24/04/2009.

☐ Excellent

☐ Satisfactory

☐ Not good

Select **Send**

A screenshot of a mobile phone screen displaying a feedback form. The phone has a silver bezel and a large central touchpad. The screen shows the 'Kalpataru' logo at the top, followed by a 'Feedback' section. The text reads: 'Thank you for using Kalpataru. We would like you to rate your experience with Mrs. Surekha on 24/04/2009.' Below this are three radio button options: 'Excellent' (selected), 'Satisfactory', and 'Not good'. At the bottom of the form are two buttons: 'Select' and 'Send'.

Kalpataru

Feedback

Thank you for using Kalpataru. We would like you to rate your experience with Mrs. Surekha on 24/04/2009.

☒ Excellent

☐ Satisfactory

☐ Not good

Select **Send**

A screenshot of a mobile phone screen displaying a feedback form. The form has a blue header with the Kalpataru logo and the word 'Kalpataru'. Below the header, the title 'Feedback' is centered. The main text reads: 'Thank you for using Kalpataru. We would like you to rate your experience with Mrs. Surekha on 24/04/2009.' There are three radio button options: 'Excellent', 'Satisfactory', and 'Not good'. The 'Satisfactory' option is selected. At the bottom of the form, there are two buttons: 'Select' and 'Send'. The phone's physical keypad is visible at the bottom of the screen.

Kalpataru

Feedback

Thank you for using Kalpataru. We would like you to rate your experience with Mrs. Surekha on 24/04/2009.

☐ Excellent

☒ Satisfactory

☐ Not good

Select **Send**



Kalpataru

Feedback

Thank you for using Kalpataru. We would like you to rate your experience with Mrs. Surekha on 24/04/2009.

☐ Excellent

☒ Satisfactory

☐ Not good

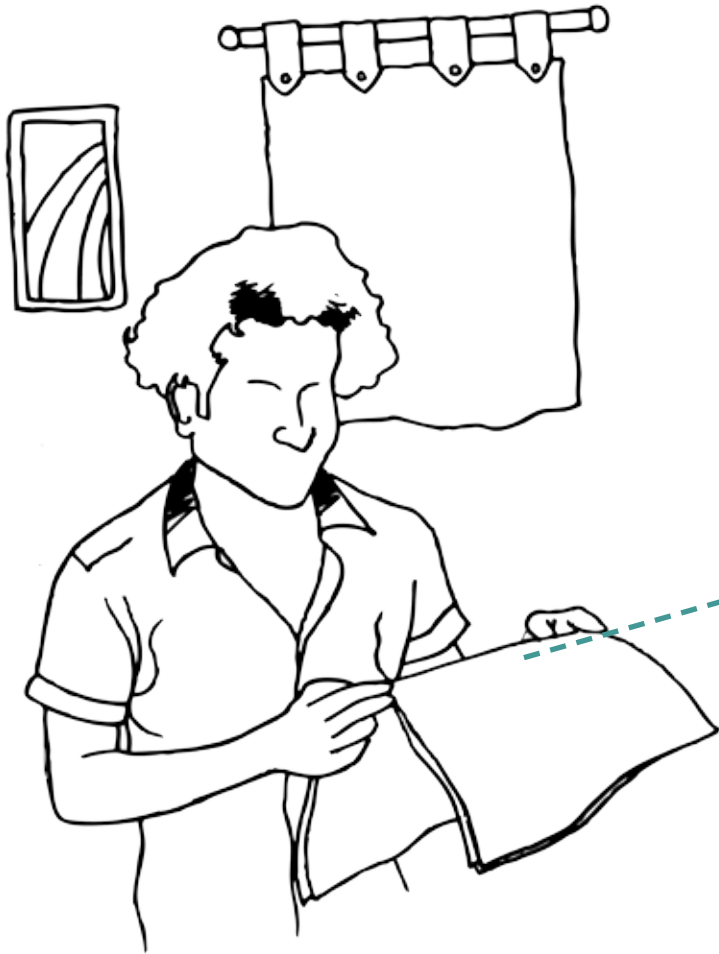
Select **Send**

The image shows a mobile phone screen displaying a feedback form. The form has a blue header with the Kalpataru logo. The main text asks the user to rate their experience with Mrs. Surekha on 24/04/2009. There are three radio button options: "Excellent", "Satisfactory" (which is selected), and "Not good". At the bottom of the form, there are two buttons: "Select" (highlighted with a red box) and "Send". The phone's physical keypad is visible at the bottom of the screen.



Mr.Arun works in an IT firm. He is a Bachelor and generally works late in the office.

Since few days the bathroom tap is not working properly. So he has asked his watchman to send a plumber. The problem is he comes late everyday.

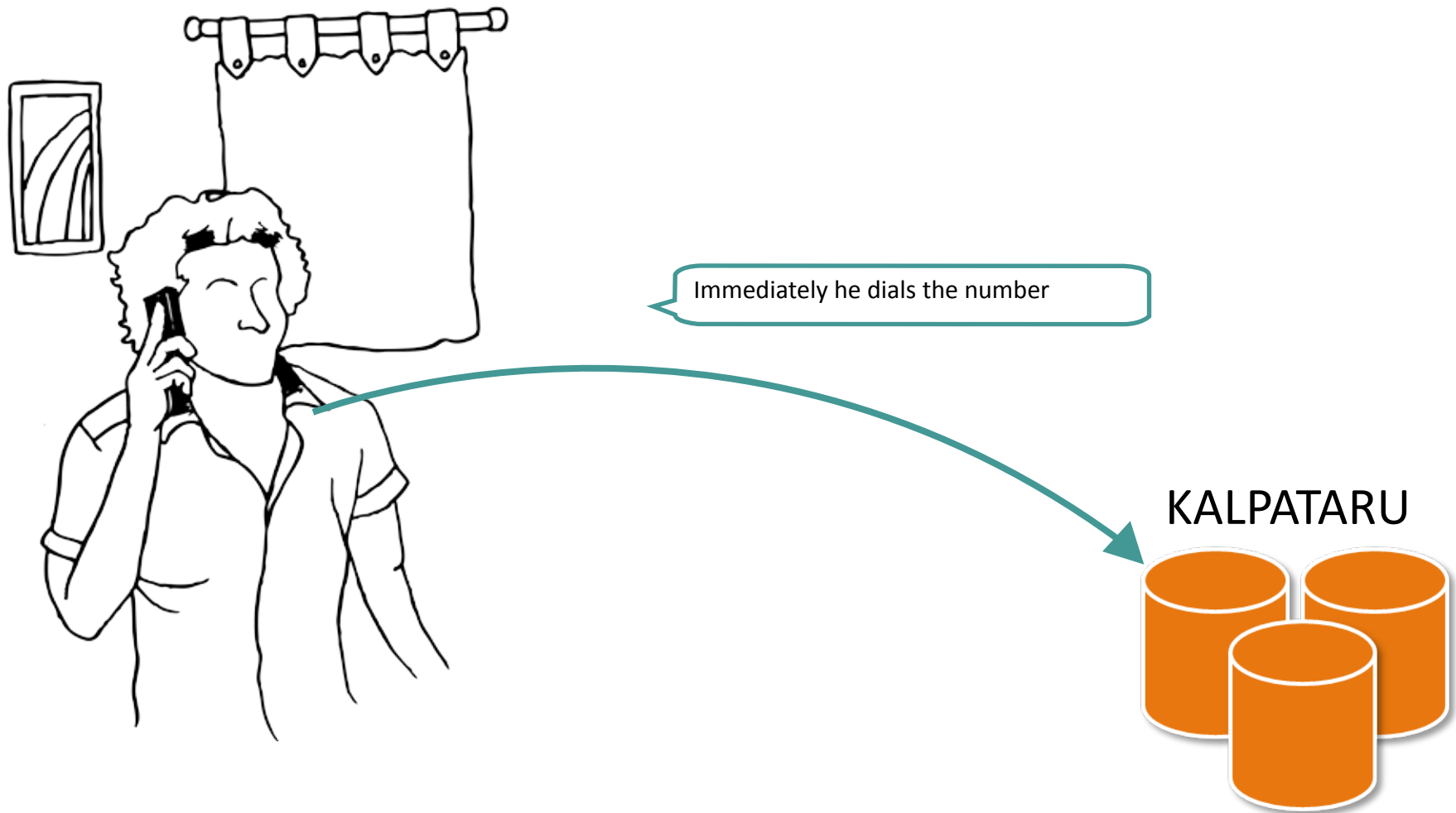


It's Sunday, and Arun is at home. He has asked the watchman to send a plumber urgently. Since morning he is waiting for a plumber but no one has turned up.

Kalpataru

(find plumber, carpenter, electrician, mechanic etc)

Just dial – 0224826 (toll free)





Welcome to Kalpataru

To find Mechanic, Plumber, Electrician - Press 1

To find Painter, Carpenter, Labourer, - Press 2

To find Maid, Housekeeper, Childcare
maid and Cook - Press 3

To find Watchman, Clerk, Driver - Press 4

To listen to menu settings again - Press 9

KALPATARU





Pressed 1 for Plumber

KALPATARU





Do you want plumber in Powai?

To confirm the location - Press 1

To change the location - Press 2

To listen to menu settings again - Press 9

KALPATARU





KALPATARU





Should we return the call on the same number ?
If yes? - Press 1
To change the number - Press 2
To listen to menu settings again - Press 3

KALPATARU





Pressed 1, to confirm the number

KALPATARU

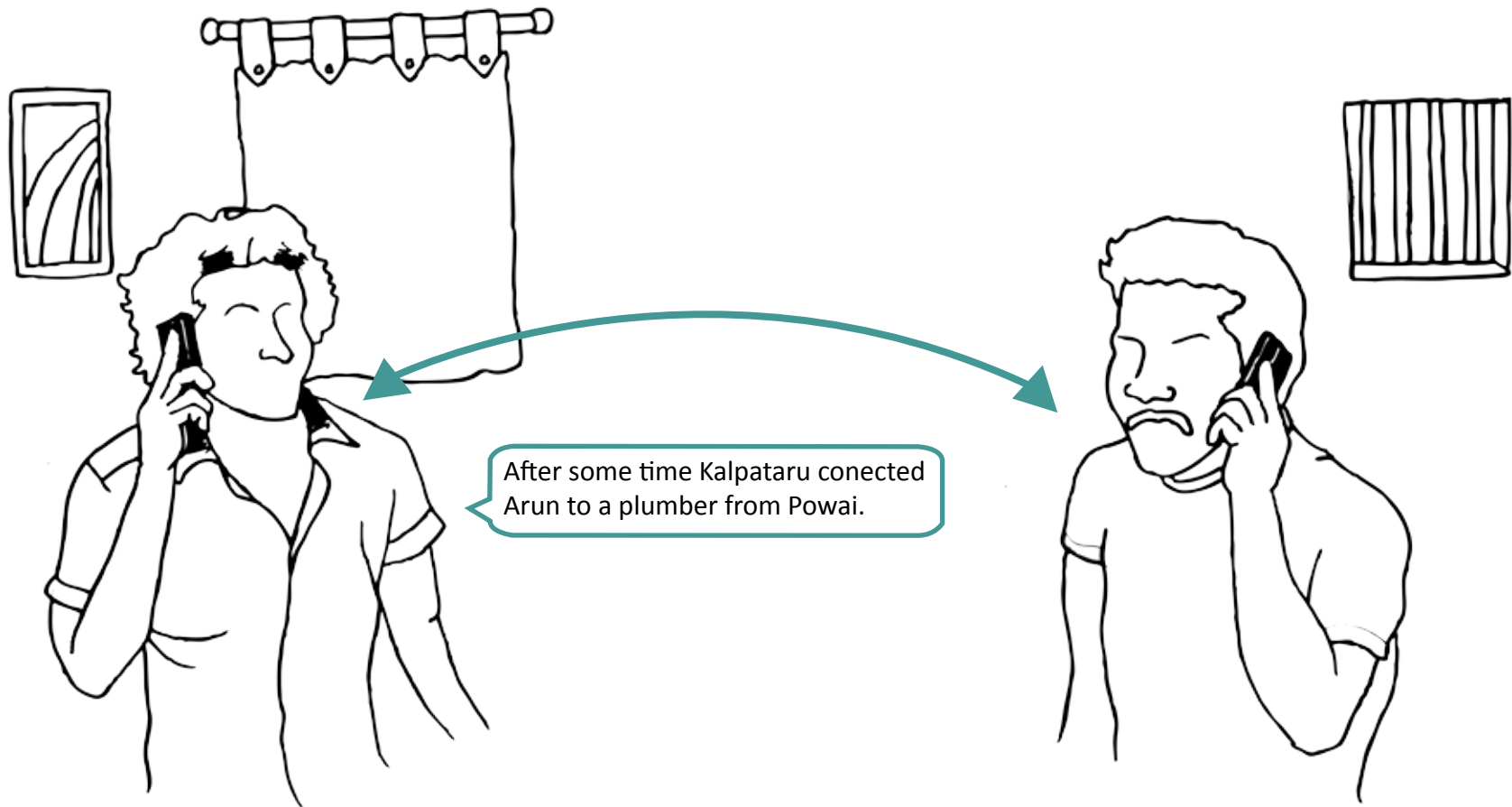




Thank you for using Kalpataru. Soon you will get a call from a plumber in Powai.

KALPATARU





Sham Lal is a plumber by profession since last 4 years. He stays and works in and around Powai.

Today he went to Ghatkopar for some small work and is about to return back after finishing it. He was not able to earn much today, so thought of using Kalpataru to find some work in Powai.

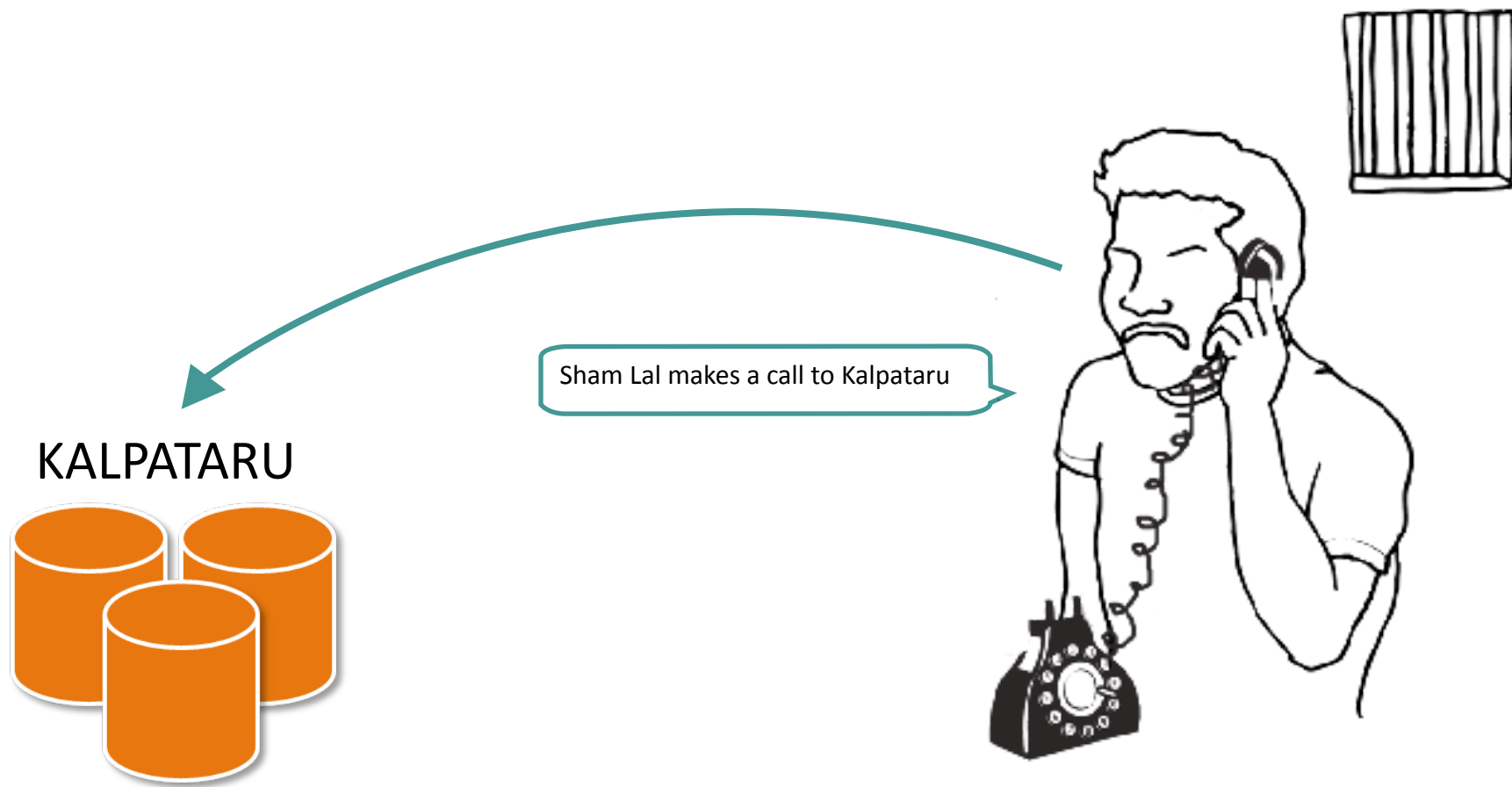


But he doesn't have balance in his cell phone , so he thought of using Kalpataru IVR from a telephone booth.



Sham Lal goes to a booth to call Kalpataru





Kalpataru mein aapka swagat hai, apka
Registration ID bataye

Menu seeetings dubara sunne ke liye 9
dabayen

KALPATARU



KALPATARU



Sham Lal dials the Registration ID



Aapko kaam Ghatkopar mein chahiye?
Agar haan to - 1 dabayen
Agar kahin aur chahiye to - 2 dabayen

Menu settings dubara sunne ke liye 9
dabayen

KALPATARU



KALPATARU



Sham Lal selects 2



Nayi jagah ka naam batayen

Menu settings dubara sunne ke liye 9
dabaye

KALPATARU



KALPATARU



Sham Lal says Powai



Kya hum aapko isi number pe sampark kare?
Agar haan to 1 dabayen
Nahi to 2 dabayen

Menu settings dubara sunne ke liye 9 dabaye

KALPATARU



KALPATARU



Sham Lal selects 2



Aapka naya number dial karein?

Menu settings dubara sunne ke liye 9 dabaye

KALPATARU



KALPATARU



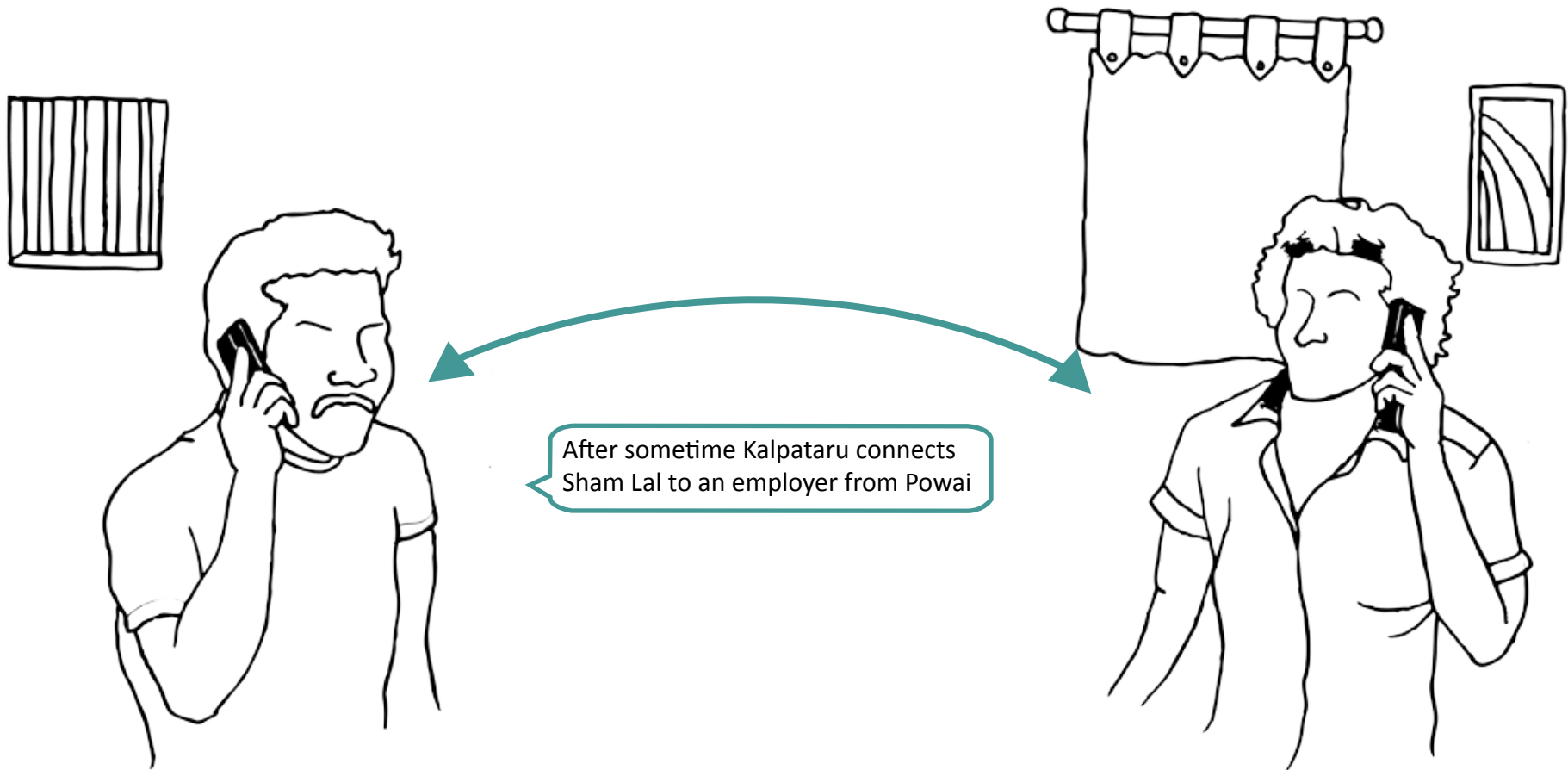
Sham Lal dials his contact number



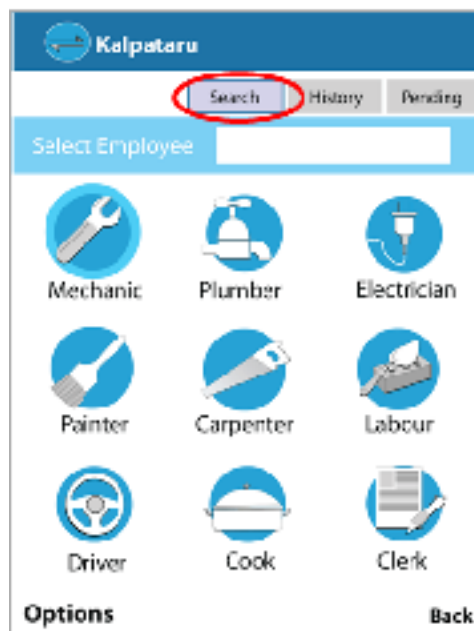
Kalpataru istemaal karne ke liye dhanyavaad.
Abhi kuch hi samay mein apki baat ek karamchari
se karvai jayegi.

KALPATARU





The Mobile application has three basic sections, one is for searching or selecting the employee, other to view the history and third to see the pending employees, that has been booked for future.

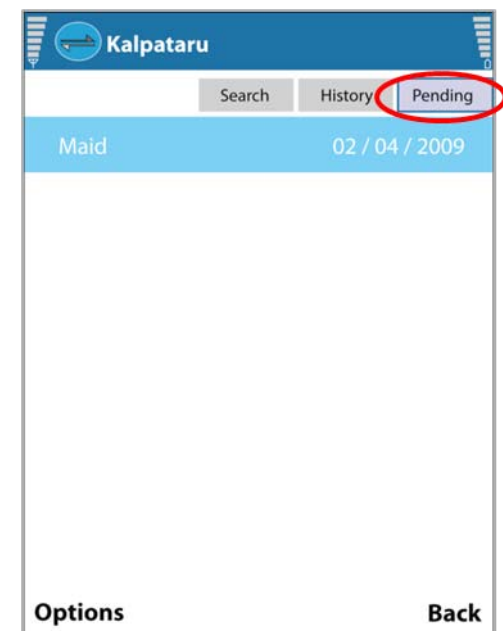


This sections helps the user in searching the employee from all the options.



This sections helps the user in viewing the messages recieved from the system, that contains all the details of the required employees.

This sections keeps messages till last month, rest are automatically deleted, so in order to save some other important contact user has to save manually.

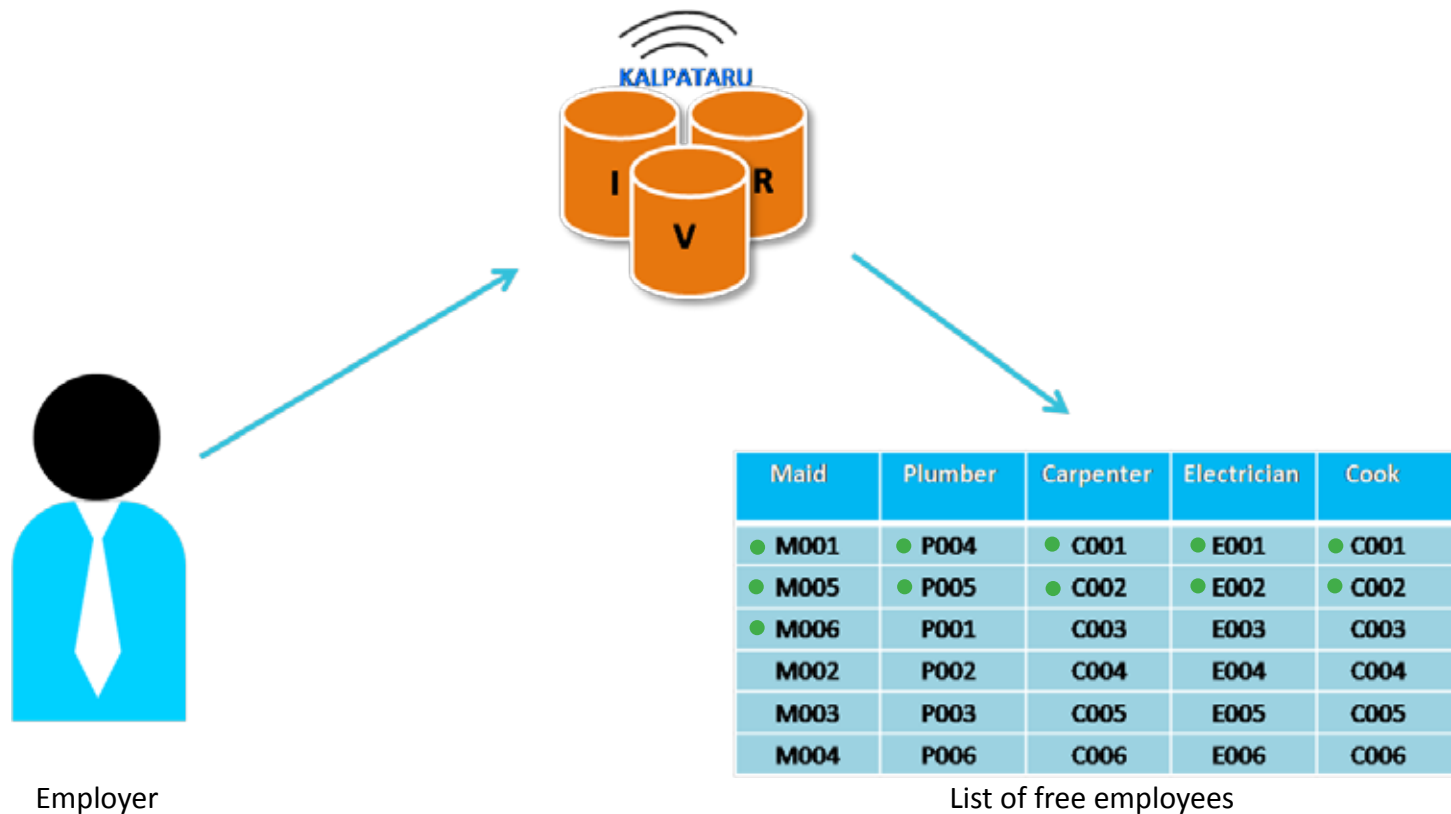


This section keeps the information regarding all the pending employees, that has been booked for future.

This can also be used to give an alarm to the user, around one hour before the given time to the employee.

About Interactive Voice Response System

- Pin codes can also be used in the IVR instead of asking the user the name of place.
- Feedbacks can be taken from the user to confirm whether the Employer has got the desired employee or vice versa.
- There can be difficulties for system in identifying the names of certain places because of the wrong spellings and it can be difficult through voice input also, in that case system can take the nearest as an input.



- Whenever an employer demands for an employee through the system, system connects the employer with the employee, who is free since long.
- If the employer or the employee rejects each other, then they are connected to the other free employer or employee.
- In case if there are no employers but there are free employees, in that case system takes Feeds from classifieds and sends that to all the free employees
- In case if there are employers, but there are no free employees, then system send random messages to the employees regarding the available opportunity.

Prototype of IVR



Phone line



Modem



Landline



Text to speech has been
used for sound



Prototype of IVR was also created.

Equipments used:

- Modem
- A Landline Phone and connection
- A computer

Steps

1. Cord of the land line was connected to the Modem
2. A cord from modem was connected to the Land line
3. Modem reader was installed into computer
4. A cord from modem was connected to the CPU
5. Text to voice was used to create the message for the IVR

When one gave a call to the number of that land line, then the modem plays the message stored in the system through the Land line.

Web portal: All the collected data, can also be presented to the employers to find employees. So this will be covering another medium and giving one more platform to the employers and the employees

More services: To increase the scope of the project more services can be added to the system like book a cab, book a ticket etc.

Compatibility: The mobile application can be made compatible to various mobiles and can be made in different languages

88

R1.a

www.entegramam.gov.in

R1.b

www.babajob.com

R1.c

www.goforads.com

R1.d, R1.e, R1.f

www.bharatmazdoor.com

R2.a

www.wikipedia.com