

Woman Safety Application - MwithU

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Abstract—Now-a-days we have many modern technologies which we are using to create systems that can protect women from crimes. But even after putting all our efforts and using all our knowledge we can't see any noticeable decrease in crime rate, related to woman because the problem lies in the technologies we have designed. MwithU overcomes all this barriers and disadvantages and provide a solution to the problem and with MwithU we surely will be able to see noticeable decrease in crime rate. We will be using Google map api's to constantly track the user location and then using the change in location with time we will be able to get users speed and then we can add condition to make sure, user is in a safe zone, if an abnormal activity is detected from user's side our system will confirm if user is safe or not (we will have a condition for that). And if second condition is also violated then our system will pass the user's exact location to the nearest help center and their emergency contacts.

Index Terms— Html, css, JavaScript, python, mongodb, sms api, java, xml framework.

I. INTRODUCTION

MwithU is a woman safety application to overcome all pitfalls of other application available in market for woman security. MwithU uses uncomplicated model and uses very few algorithms which makes its execution time very less and the system requirement for the device is also very low as all the code runs on the server. MwithU is best way of protecting yourself in an unsafe zone or an area where you didn't feel safe. User can also easily login in MwithU using their Google account. And after login in, all they have to do is leave the application running in background and application will make sure that user is safe. If the application detects any abnormal conditions it will send the user a prompt asking them a security question they have entered in the time of registration. And let's assume if the user is in some danger then she can't reply, in that case after 30 seconds of no response, system will send a message to nearest help center with users exact location and will also inform their guardians via sms.

II. METHODOLOGY

A. Development Requirement

Our application is basically a web based technology so the system requirement is very low for the application. And as the main data exchange will be happening mostly through geolocation API so low network speed will also work.

MwithU's requirement for functioning is kept to be low as that it can be used in almost all the parts of the world with low end devices and weak internet connections. We at start are mainly focusing on two types of application.

B. Web Application

Web application will be a website with most of the code running on server. And we will make sure that the website is light weight so that it can be easily loaded on any browser even over low internet connections. The websites will be designed with the help of html, css and JavaScript and python code will be running on server and we will be using mongodb database to store all the information. As mongodb stores data in json format, which is the same format in which google will pass the data to our server, so for the sake of simplicity we will be using mongodb, which will also save us execution time as we do not have to convert mongodb into sql or any-other databases or vice versa. When user will be traveling through any unsafe area, area where she feels unsafe. She can simply login using her google account and if she logs in for the first time then she has to register her guardian details whom she would like to contact in the time of emergency and she also have to choose and answer a security question. And we will store all this information using mongodb and when she login, google login api encoded in the website checks her authenticity and if she have a google account then google pass her basic details to us in json format which we can then directly store in mongodb database. After login she will have to leave the websites open and running in her browser till she reaches her destination safe. Once she reaches her destination safe she can logout. But if something happens to her then the websites running in background will notice it and respond accordingly. How the application will help someone in need is described below in the case study and the technical functioning is further explained in the internal working section.

C. Android Application

For making our application fast and simple for initial stage, we will simply use a frame work of java and xml code and create a specific type of light weight browser that opens only our site in it. An example of this type of application can be seen in the light version of linkedin and facebook lite application. So as we will be simply creating an application using framework which is already available in the form of open-source source code, so we will not discussing this portion much

D. Internal Working

At first user register all his/her details, first they login using their Google account or they sign up for one. After they login with their google account we receive a json package from google with all the basic information of the user as provided to google on the time of registration. So we store all this information in our mongodb database and after that as user have logged in for the first time we ask user to fill other details such as emergency contact details and their names and we also ask the user to choose a security question or create one with custom security question creation option. Now we take all this information and store it in our database and create a unique id for the user, so that all the data of user can be accessed using that unique id. Now as we have all the details with us whenever the user logs in we use google map API's embedded on the page that user loads, continuously pass us the latitude and longitudes. And with the help of this latitude and longitudes passed to us after a constant interval of time we keep track of users movement and then we have conditions in our server for the user and if the condition is not satisfied we will ask the user to answer the security question, as the user might have been in a safe situation but have exceeded speed or stopped somewhere for long. But if the user response is not detected our server will call the user emergency contact details from the database using the unique id we generated and then use sms API to send them an alert message warning them that user can be in danger. And we will also pass the message to the nearest help center which in most of the case can be the police station. But in case no such response is detected and the user seems safe the server will not respond and the user can logout once reached their destination safe.

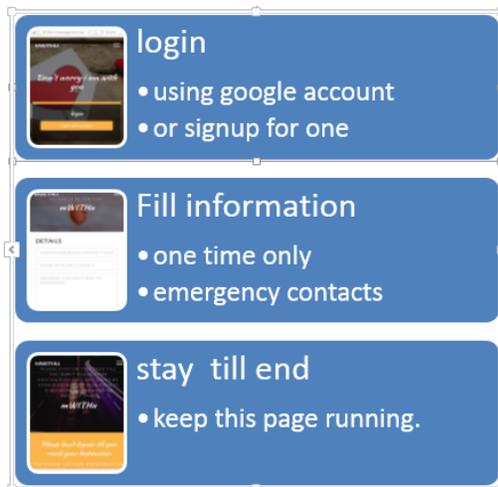


Fig. 1. User Interface

III. CASE STUDY

We will talk about a normal case taking the fact in consideration that our user lives in India but she can be from anywhere in the world the situation might vary a little but not much. So let's assume that she is a working woman working in

a software company. Her shift starts around 10:00AM and ends around 10:00PM which is basically normal working hours for someone working in average post in an average software company. So she goes to work in time stays in the office where she is safe and then as she works in an average software company in an average post she can't afford a car, or for making it simple let's say she don't use car. So she travels in a public transportation system, Now she feels safe in the transport system as most of the time it's full with crowd ,people to help her in need. But after she reaches her stop there is certain distance she has to walk to reach her apartment. Now if we see crimes held with a woman then most of the crimes are held in an empty road or somewhere woman is walking alone in un crowded place. So this is the unsafe zone. Our user doesn't like this area but she have to walk through, she knows it's unsafe but she have no other option then walking through. So while she is walking from this area she can simply login in our system and walk care freely in case she reach her destination safe she can log out. But if suddenly some attacks her, now basically after reading many crime reports I have found that what happens that when someone is attacked suddenly the first reaction they give is they scream and start running and at that time as their phone might be in bag or pocket, they really didn't get time to use it. But as with our application user don't have to do anything and if she is attacked then our application will detect it as due to sudden change in her speed, but for a short period we will make sure once if she has herself start running without any cause and if yes, she might answer the question and we will be ok but if she didn't response we will send her address which we get through converting her latitude and longitudes using reverse geo-location api, we will pass her current location to nearest police station(help center) and her guardian so that nearest policeman on duty can reach their in time and save a crime from happening. And if everything functions correctly which have high probability to work correctly she will have help under 5 minutes.

IV. EXISTING SYSTEM

Existing system in market are sos and other similar products, even nowadays cellphone companies like Samsung are making this feature of emergency alert to your emergency contacts via power button click(in a fixed pattern) in built in their devices.

A. Disadvantages

The main disadvantage with all this type of application is that here, user have to do something with the device in order to send an alert but in most of the cases the device is either in pocket or bag. And as the user is attacked she don't really get the time to take their devices out and click the buttons in order to send the alert. Because the first response the user gives at the time of attack that she starts running.

B. Advantages (MwithU)

Whereas our application overcomes all this pitfalls and you really don't have to do anything in it, so even if your phone is

in your pocket or bag if you are attacked it will detect it by itself and react accordingly. In this way user can feel safe once she have logged in our server, she really don't have to do anything and our application will track her and protect her if we detect that she is in danger.

V. CONCLUSION

According a survey 53% of Indian working woman doesn't feel safe and secured. So we are working on this application and we want to deploy it in large scale, to decrease this rate and bring a great difference in society and make woman feel more secured and safe, protect them from all crimes. Making woman safe and secured is one of the major steps in bringing gender equality. Initially we will start with Indian metro-Politian cities and then we will scale up to cover complete country and then we will move to foreign lands. And we will continuously make our application better with time. And after we grow our user database we can also implement machine learning and other

practices to make our machine more accurate and easy to use for our user. This is application might be based on woman security but it also can be used by man for their protection, if they are passing from an area where they do not feel safe.

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