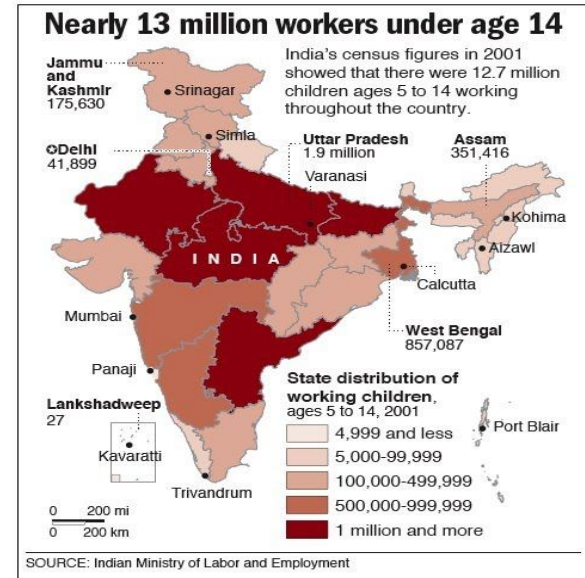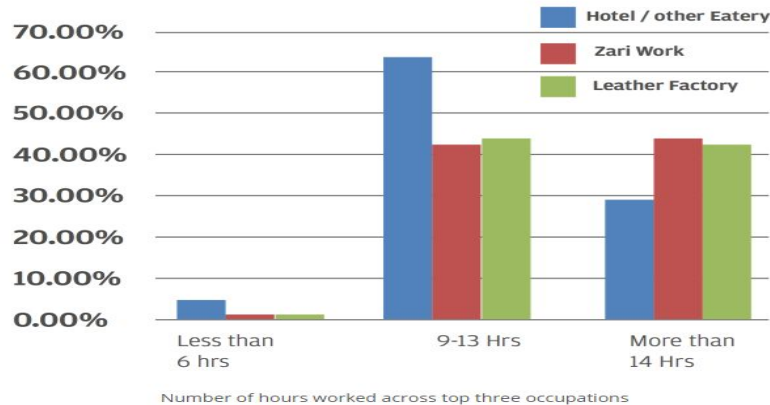# बाल संरक्षण

(पढ़ाई पर अब ध्यान धरें, मजदूरी करना बंद करें।)

Ministry Category: Ministry of Labour and Employment
Problem Statement: Eradication of Child Labour Using Systems Approach
Problem statement ID: SK2
Category: Software
Technology Bucket: Software-Web App Development
Complexity: Complex

Team Leader: Ria Jha
College Name: Indira Gandhi Delhi Technical University for Women
College Code: U-0685
Team Name: SQUADRONE

CURRENT SCENARIO

As per census 2011 data, there are 33 million child labourers between the ages of 5 - 18 years in INDIA and 10.13 million between the ages of 5- 14 years ,they form 37 percent of the total population in the country. The child labour in real figures boils down to 10,130,000 kids and this is only data from six years ago. 1 in every 11 children in India works to earn a living according to statistics by action Aid India. Ranking the country second worldwide and Delhi is responsible for a share of 1 million child labour alone.

Number of hours worked across top three occupations

Nearly 13 million workers under age 14

India's census figures in 2001 showed that there were 12.7 million children ages 5 to 14 working throughout the country.

Jammu and Kashmir 175,630
ⒸDelhi 41,899
Uttar Pradesh 1.9 million
Assam 351,416
West Bengal 857,087
Lankshadweep 27

State distribution of working children, ages 5 to 14, 2001

- 4,999 and less
- 5,000-99,999
- 100,000-499,999
- 500,000-999,999
- 1 million and more

SOURCE: Indian Ministry of Labor and Employment

PROPOSED SOLUTION

Child labour refers to the employment of children in any work that deprives children of their childhood, interferes with their ability to attend regular school, and that is mentally, physically, socially or morally dangerous and harmful. Corruption in the government of India also plays a major role in child labour because laws that should be enforced to prevent child labour are not because of the corrupt government. We should join hands against this by providing real time data to the NGOs for quick responses.The Website helps facilitate in better "implementation" and "enforcement" of already built policies and acts towards this cause. Website helps in: Free education accessibility, Moral polishing, Skilled and trained workers, Awareness among general public, Empowerment of poor people and Diminish the power of Child Abuse.

Our proposed solution is as follows:

1. **We will be maintaining a central database for the victim** on the basis of previous data provided and this database will be updated accordingly. Updation count barrier for a particular region is defined as follows:

$$Threshold\ Count\ Barrier = \frac{(Population\ of\ child\ labourers)}{(Population\ of\ children)} *100$$

2. Track the victim using real time recording and distinction on the type of case registered region wise.

3. **Reporting the cases based on crime filters and the type of login(witness/invigilator/NGOs)** and effectively monitor the victim will lead us to his/her rescue.

4. **In the case of urgency** connect to the nearby police station and other security measures are provided.

METHODOLOGY

According to *The Child Labour - Prohibition and Regulation Act of 1986,* employment of children in certain occupations and processes is prohibited but it is still rampant in the country in various sectors. By using our academic knowledge and software development skills, we develop a solution which helps to reclaim the childhood of the victims under child labour. Smart India Hackathon 2019 has given us such an ideal platform to seek our objective and challenge our skills.

What is PORTAL about?

- Our online portal will give you a way to report child labour in real time to rescue the victims and take action accordingly.
- User can filter the case on the basis of crime and place.
- This portal will maintain various databases for NGOs and invigilator and they will be updating the central database of the victims.
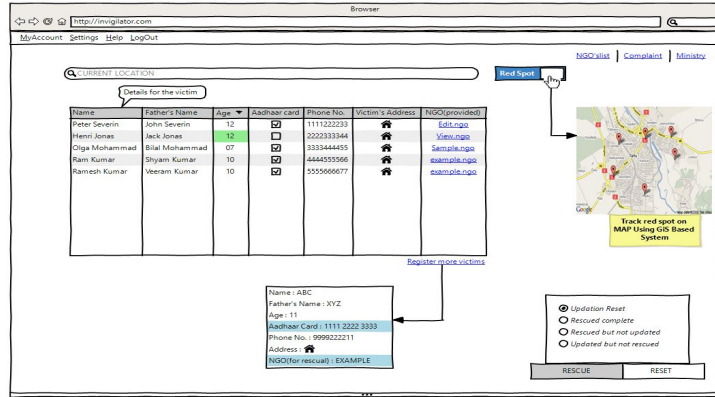- Now, govt. agency under the concerned ministry can directly track the victim using the updated database.

How can we Register?

- The witness can report the case both to the invigilator and the NGO from the nearby places and update the count, all at the same time.
- The updation count which crosses the threshold count barrier (based on previous database) in any region will own a red spot on the map and ping a notification to the invigilator of that area and to the nearby NGOs.
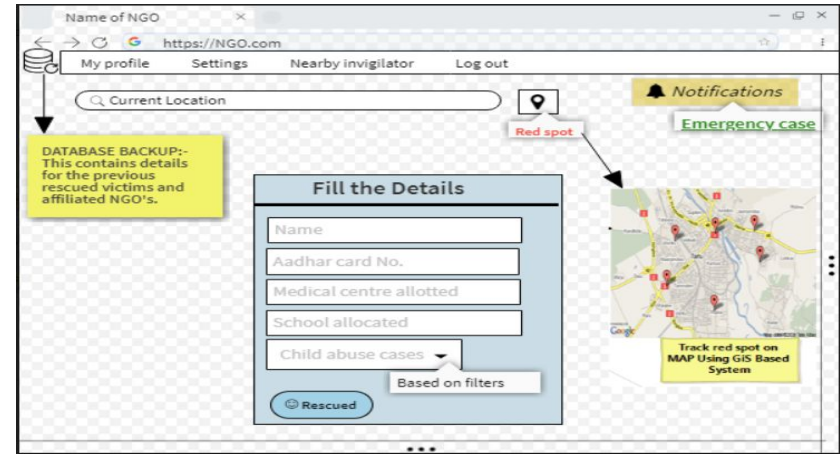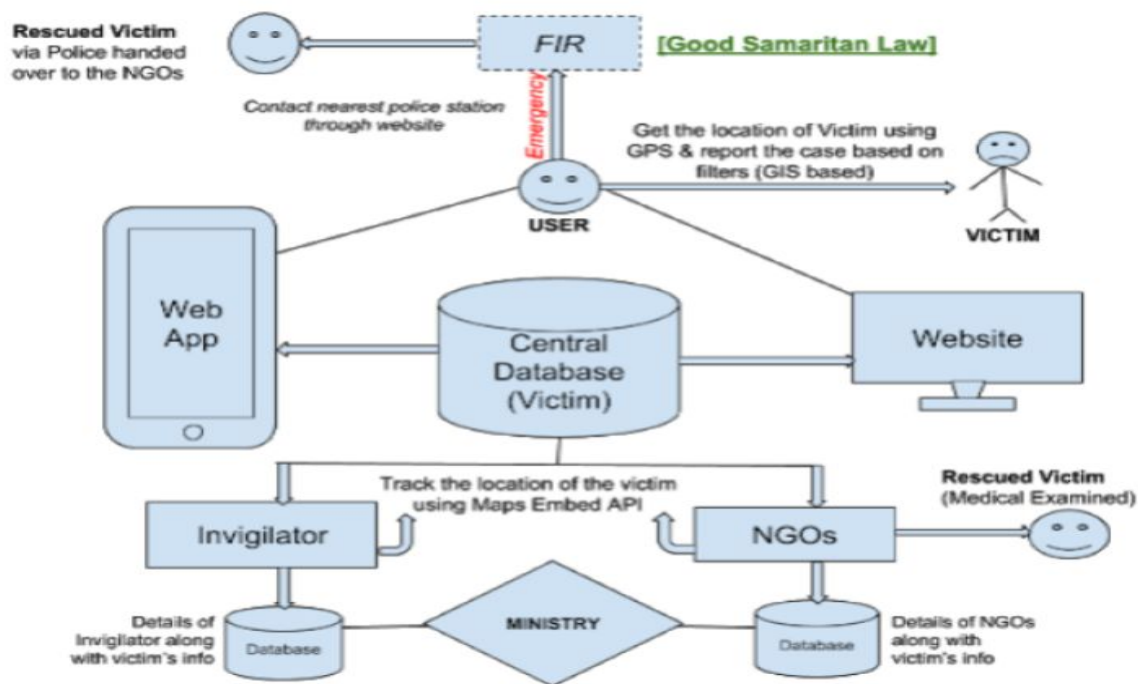
Tracking Analysis:-

- GIS [Geographical information system] software stores data based on geographical features and their characteristics and using spatial indices that make it possible to identify and map all the desired locations (red spot) within a specified radius of a point or all of the streets that run through a territory .
- This helps the invigilator and the NGO in tracking the location of red spot .
- The invigilator will add details to the victim's database and reset the updation count.
- NGO will rescue the child, add details to the new database and then effectively monitor the victim.

IT'S AN EMERGENCY!

- In the case of emergency , the witness can directly file FIR against the suspect and can remain anonymous as per the guidelines of GOOD SAMARITAN LAW.
- Police(from nearby areas) after receiving the notification can take action accordingly.
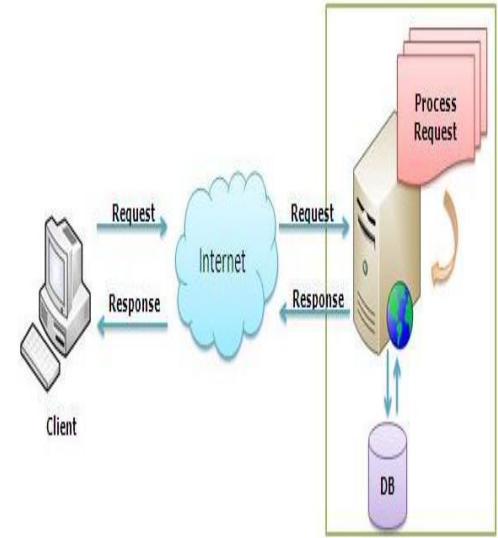
Control Flow for Proposed Solution

TECHNOLOGY STACK

Website will be used by Ministry, Invigilator, General public and NGOs.

*For **frontend** of website:*

We will be using HTML, CSS , JS, Bootstrap and Jquery libraries.

*For **backend** of website:*

- JS Based Node.js framework will be used with MongoDB to support database.
- AJAX will also be implemented using Jquery libraries.
- Various data mining algorithms and Google Maps APIs along with the proposed website will help the govt. agencies to track the victim.

USE CASE DESCRIPTION
REPORTING

TITLE	Registration
DESCRIPTION	This use case documents the procedure for reporting complaint against child labour.
PRIMARY ACTOR	Witness/User/Public
PRECONDITIONS	Verification for the user to login to the portal.
POSTCONDITIONS	The user is directly connected to the government agency and can share info about the crime. For the case of emergency, the user can lodge FIR against the suspect.
MAIN SUCCESS SCENARIO	When the updation count in a particular area will reach to a threshold value, a red spot on that particular location will be formed. A notification will be sent to invigilator as well as NGOs in the nearby places.
EXTENSIONS	Basic Flow: The use case starts when the actor wants to file a complaint via FIR. The user logs in via his/her mobile no. and is then connected to the nearest police station where user can share the details about the case. Alternate Flow: If the user fails to log in, the user is redirected to the registration page.
OVERVIEW	The use case helps in updating the previous database and also provides an appropriate location to inspect the case of child abuse.

TRACKING

TITLE	Tracking
DESCRIPTION	This use case documents the procedure for tracking the victim.
PRIMARY ACTOR	Invigilator
PRECONDITION	The invigilator should be logged into the system.
POSTCONDITION	After the rescue of child, the invigilator will reset the updation count of the red spot.
MAIN SUCCESS SCENARIO	The role of actor starts by logging into the system . When the updation count reaches a max value , the actor will be notified through a notification and will get the location of the red spot through GPS. After rescue operation, the actor will enter the details of the victim and reset the update count.
EXTENSIONS	Basic Flow: The use case starts when the actor logs into the system. The actor can view the location shared and can edit the details of the victim using real time communication system. Alternate Flow: If the user fails to log in, the user is redirected to sign up page.
OVERVIEW	The victim will be tracked through GPS and will be rescued by the government agency after being notified.

MONITORING

TITLE	Monitoring
DESCRIPTION	This use case documents the procedure for monitoring the victim.
PRIMARY ACTOR	NGOs
PRECONDITION	The actor should be registered into the system.
POSTCONDITION	The NGO will track, examine and monitor the child upto a certain age as per govt policies.
MAIN SUCCESS SCENARIO	The actor will be notified about the red spot through a notification . On rescuing the victim, the actor will medically examine the child and will update the database accordingly. The actor will keep track of the victim until they reach a certain age.
EXTENSION	Basic Flow: The use case starts when the actor logs into the system. The actor can view the location shared and can edit the details of the victim using real time communication system. Alternate Flow: If the user fails to log in, the user is redirected to sign up page.
OVERVIEW	The use case helps the victim in being rescued. Further, the NGO will examine and take care of the victim.

DEPENDENCIES/SHOW STOPPER

On account of adverse consequences of child labour, several policy prescriptions both at the national and international levels aimed at compulsory education and imposing ban on child labour.
The paper calls for a holistic approach to address the problem of **child labour** and attempts to provide a model of child advocacy network that is visible and accessible to a child in distress.

The three critical components of such an approach is:
(i) to provide support to the **distressed families** to remove their dependency on child labour.
(ii) an overhauling of the **education system** to make it respond to the needs of the economy.
(iii) an effective **child advocacy system** that is integrated with the **local governance structure**.
These three components are not to supplant but to supplement the existing measures.

With an integrated approach we intend to develop a website (web application) that implements computerized tracking system for victims under child labour using Geographical Information Software(GIS).

The most important feature of our web app is the combination of data mining,GIS and innovation. The fundamental purpose of the website is that the witness can report the case for the victims under child labour which notifies the respective nearby invigilators and NGOs and provide the necessary info about the victim to the concerned authorities.

The government agencies can examine the data sources which helps in tracking the victim's current status and can take action accordingly.

Another important feature is under the case of emergency, where the user/witness can lodge FIR under the guidelines of **Good Samaritan Law** which will provide the legal anonymity to the witness. In case of any **physical or mental child abuse**, the witness can reach the nearest police station through the website link provided on the portal.

We sincerely hope that our technology reach masses across the nation so that we can help the victims of child abuse to rejuvenate their childhood and thus make a move in eradication of **child labour** in the country. We have to fight against this and have to secure each and every right of every single child, and then only it will be a celebration of "**Children's Day**" in a real sense.