SMART INDIA HACKATHON 2020

INTERNAL HACKATHON PRESENTATION

TEAM DETAILS

Team Name: I am not a robot

Team Members:

- Astha Mehta (Team Leader)
- Abhishek Vanjani
- Anjali Jain
- Manish Devgan
- Satyam Gupta
- Utsha Sinha

PROBLEM STATEMENT

Designing a CAPTCHA Authentication Process for Visually Impaired People

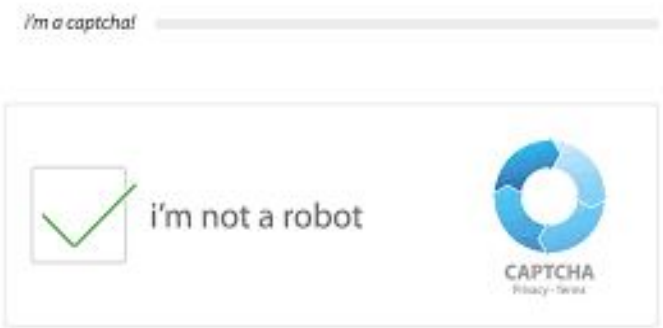
Organisation: Dte of IT & Cyber Security, DRDO

Domain Bucket: Miscellaneous

PS Number: CK146

CAPTCHA

- Completely Automated Public Turing Test to Tell Computers and Humans Apart
- Program to Distinguish between Human and Machine Input
- To prevent Spam Bots from doing Automated Extraction of Data from Websites
- To prevent automatic filling of forms



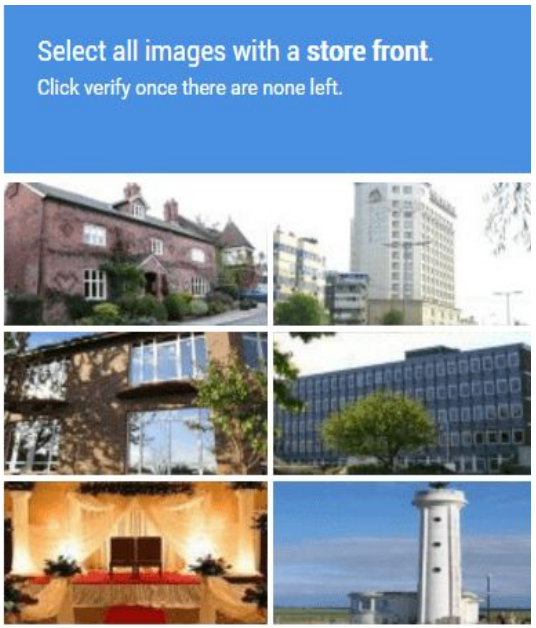
NEED FOR THE PRODUCT

- Around 40 million people in India are Visually Impaired
  - 20% of the World's Visually Impaired live in India
- Around 5% of the Indian population is Visually Impaired

EXISTING SOLUTIONS

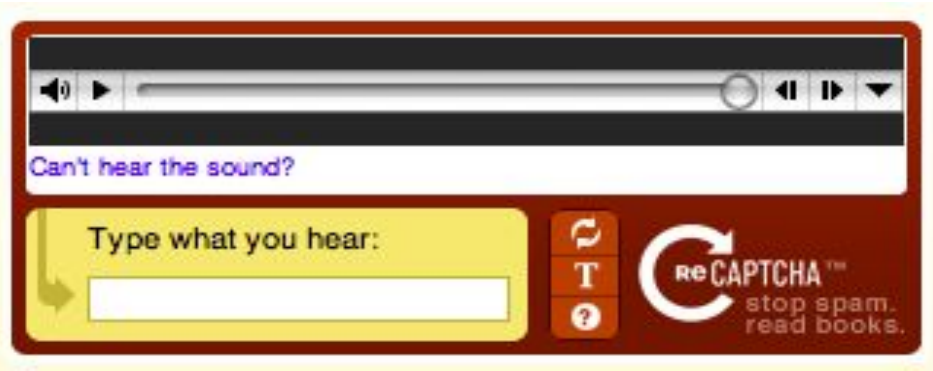
Image CAPTCHA

Can’t be viewed by the Visually Impaired



Audio CAPTCHA

Difficult to Decipher because of Background Noise



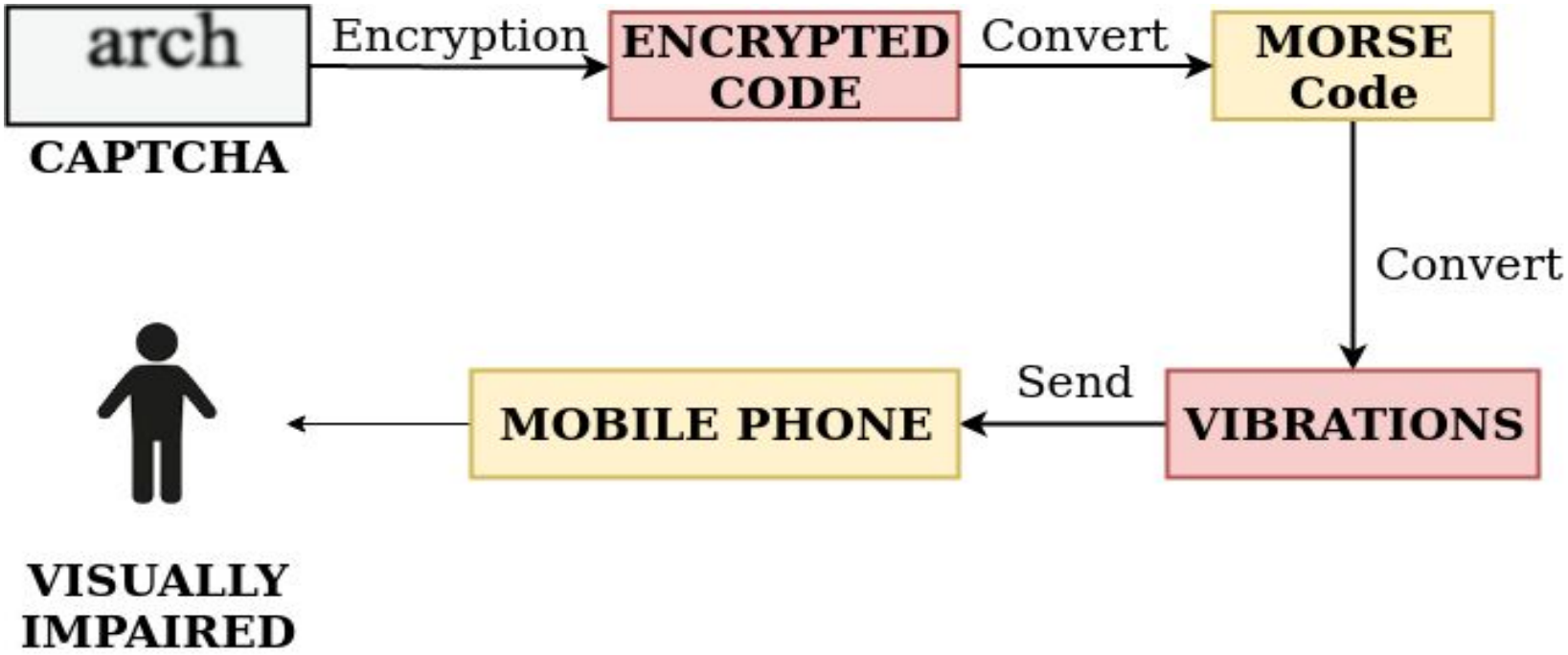
USABILITY

- No External Hardware Requirements
- CAPTCHA delivered as Vibrations of a MORSE Code
- MORSE Code is easy to learn
- Vibrations can’t be obfuscated

PROPOSED SOLUTION

Designing an Easily Integrable SDK (for Android, iOS both) for enabling Morse Code driven CAPTCHA while Form Filling

PROTOTYPE

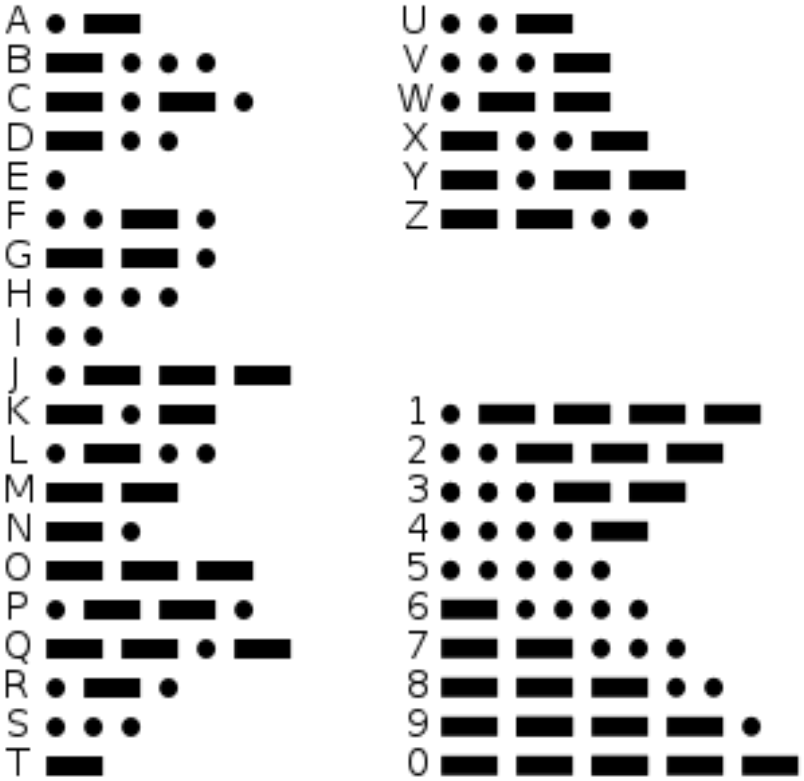

arch
CAPTCHA
Encryption
ENCRYPTED CODE
Convert
MORSE Code
Convert
VIBRATIONS
Send
MOBILE PHONE
VISUALLY IMPAIRED

ENCRYPTION

- CAPTCHA is encrypted through AES – Advanced Encryption Standard.
- Ensures that only way to get CAPTCHA is through MORSE Code Vibration.
- AES is widely used to protect sensitive information as it is difficult to break.

MORSE CODE

- Each character is represented in terms of **DOTS and DASHES**.
- Used in World War II for communication.
- Commonly used by Visually impaired for telecommunication.



FEASIBILITY OF APPROACH

- No need of bulky Software.
- No additional Hardware required.
- Easily accessible through mobile phones.
- Portable.
- AES Encryption is secure and widely accepted.

VALIDATION