# Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: National Technical Research Organisation,(NTRO)

PS Code: SIH1455

Problem Statement Title: Efficient enumeration of URLs of active hidden servers over anonymous channel (TOR)

Team Name: Binary Brains

Team Leader Name: Harshit Vyas

Institute Code (AISHE): U-0614

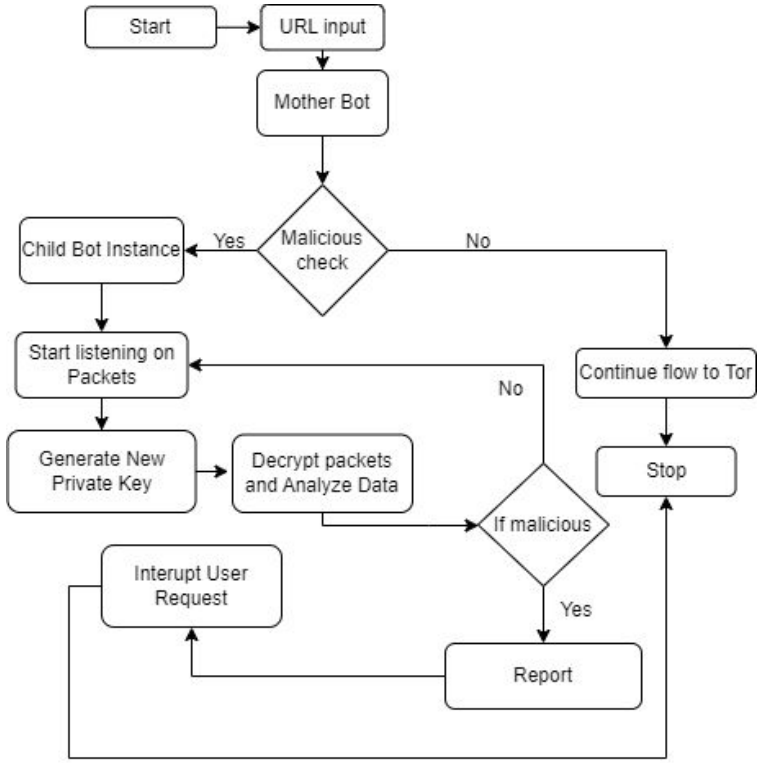
Institute Name: National Institute of Technology Sikkim

Theme Name: Blockchain and Cybersecurity

# Idea / Approach Details

## Describe your idea / Solution / Prototype here:

- Moderation of .onion URLs in Tor using Parent-child bot instance.
- Traffic regulation is maintained.
- The illegal sites using anonymous Tor channels can be restricted and even blocked.
- The use of modular bots keeps up with Tor's promise on privacy and anonymity.




## Describe your Technology stack here:

- Programming language used Python for application of cryptography.
- Backend :- Django/ Node JS
- Use of public key encryption and proxy servers.
- Use of modular bots.

# Idea / Approach Details

Describe your Use Cases here

- Can help reduce the abundance of illegal sites in Dark Web.
- Keeps up with the anonymity of the user, while also moderating the channel.
- Used to detect illegal activities ranging from human trafficking to drugs sale.
- Will reduce the efforts of Government to maintain and manage the network and the activities being performed on Tor.

Describe your Dependencies / Show stopper here

- Use of Parent-Child bot to reduce clutter and traffic.
- Since the Bot instance will use a proxy server to analyse data, the server won't be overloaded .
- To protect the user's anonymity and privacy, a copy of the encrypted data is made, which is then decrypted by the bot instance, and divided into packets which are further encrypted with a singular key for each.
- Each packet is then decrypted at every instance, while the original data is led to flow through the entry node and the middle nodes.
- The decrypted packet with the data is analysed repeatedly until something suspicious is detected.

# Team Member Details

**Team Leader Name: Harshit Vyas**

Branch (Btech/Mtech/PhD etc): BTech Stream (ECE, CSE etc): CSE Year (I,II,III,IV): II

**Team Member 1 Name: Sarika Gautam**

Branch (Btech/Mtech/PhD etc): BTech Stream (ECE, CSE etc): CSE Year (I,II,III,IV): III

**Team Member 2 Name: Debanjana Sur**

Branch (Btech/Mtech/PhD etc): BTech Stream (ECE, CSE etc): CSE Year (I,II,III,IV): II

**Team Member 3 Name: Arindam Das**

Branch (Btech/Mtech/PhD etc): BTech Stream (ECE, CSE etc): ECE Year (I,II,III,IV): II

**Team Member 4 Name: Anand Pandey**

Branch (Btech/Mtech/PhD etc): BTech Stream (ECE, CSE etc): EEE Year (I,II,III,IV): II

**Team Member 5 Name: Aditya Sharma**

Branch (Btech/Mtech/PhD etc): BTech Stream (ECE, CSE etc): ECE Year (I,II,III,IV): II

**Team Mentor 1 Name: Type Your Name Here**

Category (Academic/Industry): Mr. Suman Banerjee Expertise (AI/ML/Blockchain etc): Blockchain Domain Experience (in years): 4+ years

**Team Mentor 2 Name: Type Your Name Here**

Category (Academic/Industry): Mr. Marlom Bey Expertise (AI/ML/Blockchain etc): Advanced algorithms Domain Experience (in years): 4+ years