Project Tender

Project: Eavesdropping Protection in Conclave
Client: DPSS, CSIR

Team: Unsolvable Solutions
Edwin Fullard 12048675
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1 The Team

1.1 Edwin Fullard

Edwin Reece Fullard

- Interests

    - Problem Solving (puzzles, riddles, complex scenarios, etc.)
    - Web Development
    - Working with programmable devices
    - Outdoors (Camping, Nature, etc.)

- Technical Skills

    Java, C++, C#, Python (a bit), HTML, Javascript, PHP and Linux.

- Past Experience

    I Created a few websites and played around with coding in my spare time, but didn't do something for a client before.

- Non-technical Strengths

    I am very creative and good with problem solving. I also like to think of myself as a people person and I was told that I can be funny.

- Motivation for Project

    I find the whole idea of just tapping your phone and all the necessary things happen quite fascinating. I would also like to contribute to the safe keeping of important information.

1.2 Jaco Bezuidenhoudt

Jacobus Bezuidenhout

- Interests

  - Arduino
  - Internet of Things (IoT)
  - Electronics
  - Remote Monitoring
  - I like tracking things remotely and programming interaction with hardware.

- Technical Skills

  C, C++, Python, NodeJS, HTML(+js), Arduino and Microprocessors, PCB Design and Linux.

- Past Experience

  I have created a few websites from scratch, and I'm currently hosting them on a VPS in Amsterdam, New York and London. My company is working on an animal tracking solution for the past 6 months. I also give training on the Intel Edison platform and electronics for Intel clients.

- Non-technical Strengths

  I have good presentation and people skills, and I'm good with finding creative solutions.

- Motivation for Project

1.3 Jandre Coetzee

Johannes Adriaan Coetzee

- Interests

  Computer Security, Web Development, Android Application Development and Computer Graphics.

- Technical Skills

  Java, C, C++, HTML, JavaScript, PHP, Python(the basics), SQL and Linux.

- Past Experience

  I have done several project during my time at the University. Most of the projects was done in Java. I have not yet done a project for an external client.

- Non-technical Strengths

  I like to solve problems in a creative manner and I am a fast learner. I am a easy person to work with and work well in groups. I am able to communicate effectively with people I work with.

- Motivation for Project

  This project is a combination of information security and application development which is of great interest to me. Information security is a well known topic being discussed today as every person, business and government wants their information to be secure. Not to mention a person eavesdropping on a conversation that was supposed to be secure. Thus I would like to partake in this project.

1.4 Maret Stoffberg

Margaret Stoffberg

- Interests

  - Web Development
  - Music Recording, Producing and Mastering
  - Design
  - Mathematics
  - Crafts

- Technical Skills

  Java, C++, PHP, Javascript, HTML and Linux.

- Past Experience

  Building websites for clients.

- Non-technical Strengths

  I have good people skills and I'm very creative.

- Motivation for Project

  It looks interesting to work with the technologies and I want to creatively explore the possibilities of everyday devices.

1.5 Ryno Pierce

Ryno Casper Pierce

- Interests

    - Games Development
    - Web Development
    - Android App Development

- Technical Skills

    PHP, HTML, JavaScript, Java and C++.

- Past Experience

    I have done a lot of Java programming for University projects, and have created some websites for external clients.

- Non-technical Strengths

    - Analytical thinker
    - Logical thinker
    - Great communication skills
    - Teamwork
    - Tenacity

- Motivation for Project

    I am interested in mobile application development and how you can use the technologies that are present in a mobile device. This project aims in that direction and thus would like to partake in it.

2 Project Execution

- Initial ideas around technical challenges

  To start off, we would implement a server that would be hosted in a cloud. The server will be accessed via the presenters' or the meeting leaders' computer. It will then comunicate with a gateway device (Intel Edison) which in turn will communicate with the node(s). Each node will be equiped with a NFC writer/reader to enable us to log the person into the meeting and send the agenda to his/her phone. We decided that there should be the possibility for more than one person to tap in at a time. When a user taps in, his/her screen would notify them when the phone is safe and when it is restored.

  The malware is a tricky part of this project, but we think we would be able to get root or super user access to the phones' OS through creative techniques. Thus enabling us to use the victims phone as we wish.

- Progress Reporting

  We will schedule regular meetings on a set interval (possibly two weeks) to ensure that we keep the momentum from the start of the project. This will create mini deadlines for us and thus we can achieve small victories throughout the development phase to ensure the project as a whole will succeed.

- Development Methodology

- Potential Technologies

- Outcome of the Project

  - The developed mobile application should include the following:
    - o NFC communication
    - o NFC tag programming features
    - o Automatic disabling of Wi-Fi and GSM when tapping the NFC tag

- o Automatically turning the mobile device to silent mode when tapping the NFC tag
- o Automatically restore settings on the mobile device when existing the meeting and tapping the NFC tag
- o Automatic check in to the centralised server when tapping the NFC tag
- o Automatic check out from the centralised server when tapping the NFC tag

– The developed mobile malware should include the following:

- o Covert SMS interception
- o Covert voice recording
- o Covert e-mailing of the voice recording

– The developed web server application should include the following:

- o User friendly GUI
- o The ability to check who was present in the meeting
- o The ability to specify who should have access to the meeting