Project Tender

Project: Ironman Image Throw Thingy
Client: CSIR

Team: Anarchy
Edwin Fullard 12048675
Jaco Bezuidenhoudt 11013878
Jandre Coetzee 10693077
Maret Stoffberg 11071762
Ryno Pierce 12003922
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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

  The concept of making the functions we only dream of and see in the movies a reality, really excites me and I would love to contribute my innovation and creativity to the project.

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

  Creating an application which can throw images on the big screen sounds fascinating. I would like to contribute to this project in a creative way and make it a reality.

1.4   Maret Stoffberg

Margaret Stoffberg

- Interests

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

- Technical Skills

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

- Past Experience

    Building websites for clients.

- Non-technical Strengths

    I have good people skills, I am a logical thinker and I am very creative.

- Motivation for Project

    Creating this function for everyday devices sounds captivating and I would love to contribute to the project.

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

    Being able to create a system that is present in science fiction would be a dream and thus this project is perfect for that dream to come true.

2 Project Execution

- Initial ideas around technical challenges

  To start off, we would like to connect each screen being used to a terminal and connect all the terminals to a server(host) computer. We want to track the user's position and the direction the mobile device is pointing to, to be able to get the correct screen that the image is been "thrown" too. To get the user's position we will use 3 Bluetooth tags spread across a room and calculating the distance from each tag. To get the direction of the mobile device, we will use the built in compass of the mobile device.

- 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
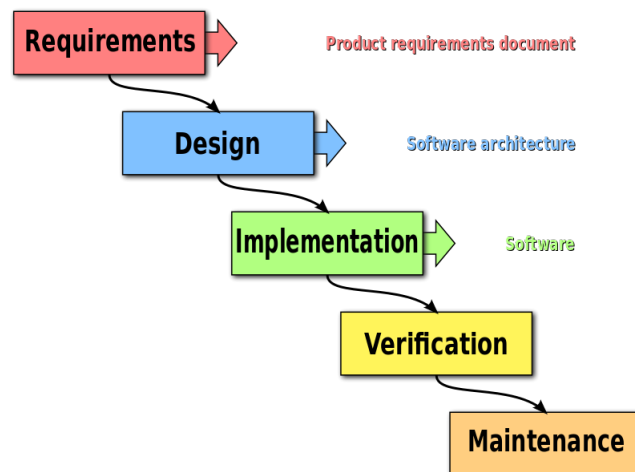
  We will use a sequential design process, used in software development processes, in which progress is seen as flowing steadily downwards through the phases of:

    * conception
    * initiation
    * analysis

* design
* construction
* testing
* production/implementation
* maintenance

This is also known as the waterfall methodology.

- Potential Technologies

  The technologies we plan to use are:
  * On the Server
    · NodeJS to connect to Bluetooth 4.0 device
  * On the Bluetooth tags
    · Bluetooth 4.0
  * On the Mobile Device
    · Bluetooth 4.0

- Outcome of the Project

  − The developed mobile application should include the following:
    o viewing images
    o Swipe image to load on screen being pointed to
    o Connecting to a server

  − The developed web server application should include the following:
    o User friendly GUI
    o The ability to view the current image "thrown" to the screen (Application)
    o Selecting Bluetooth tags near the server