

Project Tender

Project: Eavesdropping Protection In Conclave
Client: CSIR

Team: Team Name
Renaldo van Dyk (12204359)
Johann Dian Marx (12105202)
Sean Thomas Hill (12221458)
Andreas du Preez (12207871)
Shaun Meintjes (13310896)

Department of Computer Science, University of Pretoria

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1 The Team

1. Renaldo van Dyk (12204359)



- Interests

I'm a lover of technology in general and fortunate enough to pertain to it's value. I love knowing that every page of code that I write will help improve someone in their day-to-day life. I mostly favor web and mobile app development and I'm also intrigued by security and privacy aspects of information technology.

- My technical strong points:

- Java

Java programming is one of my strong points and I have been using the java language extensively for 3 years.

- XML

XML have been used throughout the course of 4 years in my degree. We have learned how to use it in different environments and I have experimented with it in my own time by writing small android apps.

- Web Technologies

PHP, Javascript, HTML, JQuery, AJAX, XML are some of my well developed skills.

- Other Languages

Visual C#

C++

C

ASP.net

SQL

UML

- Past experience relevant to project

I have worked on small Android apps, experimenting with some functionality including Wi-Fi, GEO location, voice recording etc. in order to get familiar with the Android SDK. The core of Android development lies in Java and XML. I have studied these languages to a great extent. This will make it easier for me to implement the mobile application and mobile malware. I have worked with web technologies for 5 years, in my field of study and in the more corporate environment. This experience will be crucial in the development of the web server application.

- Non-technical strengths

I am a strong perfectionist, this means I will not attempt a project if I am not 100% sure that I will succeed. I am driven and always do my utmost best to reach deadlines. Some of my characteristics include:

Reliable
Leader
Precise
Hard Working
Passionate
Loyal

- What makes you want to do the project

I love working with mobile development and web development and this project has a mixture of both. The fact that I have to write a malware application to test the mobile application intrigues me. I will gain a lot of experience and knowledge in the area of development that I'm most interested in.

2. Johann Dian Marx (12105202)

- Photo



- Interests

My main interest is new technology. Mainly developing new software that not only enhances our daily lives, but also improves the safety of our data on our mobile devices.

I enjoy mobile development, as well as researching (and attending seminars on) security on electronic devices.

- Technical Skills

- **Java**

Not only have I been using Java for degree purposes the past 4 years, it is also my preferred coding language outside the confines of the university.

- **XML**

I have used XML during my degree, and I have learned how to use it effectively.

- **Web Technologies**

The web technologies I have acquired during my studies include, but are not limited to : PHP, Javascript(Used extensively by our group on the COS 301 mini-project), HTML, JQuery, AJAX, CSS.

- **Other Languages**

Visual C#

C++

SQL

UML

Fortran

COBOL

Assembly

Pascal

– Helpfull to the project

Together with the programming skills I have acquired through the University of Pretoria, I have also done various online courses on Mobile Application Development (More so on Android than any other OS), as well as various courses on mobile security (This together with the vast amounts of research I have done on the matter).

- Past experience relevant to project

I have worked for Corporate Companies on large projects before, which will help in the time management of the project, as well as the technical difficulties we might encounter.

I have done some mobile development before, creating applications to be used locally between the employees of a company, which helped me develop not only my knowledge of the Android environment, but also the security risks associated with sensitive information.

I have worked with large groups of people, as well as individually, which I feel has prepared me for the peer programming part of the work and the individual part.

- Non-technical strengths

I have good time management skills, excel at managing groups of people, work exceptionally well under stress and pride myself in the work I deliver. I enjoy a good challenge and think this project has just enough of that to keep me going for a while. I feel the following words of Sally Hawkins are applicable here: "You only do good work when you're taking risks and pushing yourself".

- What makes you want to do the project

I am excited to work on security related projects. Working on a project for the CSIR and DPSS will help in my understanding of security measures in the Android environment, as we will have to do extensive research on the matter.

Being able to say that we were part of the team that helped develop a process to keep sensitive information within the confines of the meeting space will also be a proud moment in any developer's student career.

3. Sean Thomas Hill (12221458)

- Photo



- Interests

I'm interested in creating things that I can be proud of, and I'm excited about learning how to use a wider variety of ways to interact with the latest technology. Where software development is concerned I enjoy web and application development and would like to gain some more experience in mobile development as well.

- Technical Skills

- **Java**

Three and a half years of experience in study.

- **XML**

Extensive knowledge in xml document creation and handling of xml markup in a wide variety of coding environments as well as xml styling and template based document creation from xml documents.

- **Web Technologies**

I am proficient in JavaScript, HTML, PHP, related database interactions and styling.

- **Database Technologies**

MySQL, neo4j, PL/pgSQL, postGIS, db4o and mongoDB.

- **Other Languages**

C++

Visual C#

UML

ASP.net

Assembly

- A bit of toying with the android SDK to see how it works, 4 years of study in Java and XML, which are used in android development. A subject on operating systems, which will help with the SMS interception in the second part of the project.
- Non-technical strengths
I am a natural problem solver, a reliable worker and driven to complete the tasks at hand. Honesty is important to me. I am passionate about the projects we are tendering for and that means that I will do my very best to make it run perfectly. I like to keep things light and will always stay level-headed. I work well under pressure.
- What makes you want to do the project
This project is by far the most interesting one we were offered to choose from. Aside from getting the opportunity to have the CSIR on my resume, everything about this just seems cool. I believe that the experience from using NFC will be very valuable as its capabilities are appearing on more and more devices. The fact that this project crosses over between digital and physical security intrigues me, as does the challenge of it all. As soon as I started reading the project overview, I knew I would want to do it the most. If we are given this opportunity, I promise to deliver my best possible work. You will not be sorry.

4. Andreas du Preez (12207871)

- Photo



- Interests

Information Technology has always been my main focus in life and I enjoy every challenge it throws at me. I love the fact that technology is constantly developing and I believe mobile software is a bright future for IT. I take pride in my work as a software

developer and wish for the users using my software the same level of enjoyment I get when programming it.

- Technical Skills

Programming languages that I've studied and have used for 4 years include:

- Java

- C#

- C++

- C

- Markup Languages

Such as XML, HTML, XHTML, DTD, XSLT, XPath and TeX.

- Web Development Coding

Such as PHP, Javascript, CSS, AJAX, jNode and ASP.NET.

Also I'm busy studying a variety of the World Wide Web RFC standards.

- Database Coding

Such as SQL, MySQL, MongoDB.

- Delphi

- Assembly

- Past experience relevant to project

I have developed a few Android apps for personal use. I am experienced in Adroid software development and would love to gain professional experience. Mobile development mainly consist of Java coding, and Java is my favorite language.

- Non-technical strengths

I love a good challenge. I will walk the extra mile to complete that challenge and I won't allow anything to stand in my way of a project's success.

- What makes you want to do the project

This is a completely new idea and a very interesting concept. I always wanted to develop an app for mobile phones to restrict users from using certain functions in certain circumstances, specifically in test environments where students are not allowed to communicate with the outside world while writing tests. I see a lot of potential in this project and would love to be apart of it.

5. Shaun Meintjes (13310896)



- Interests

I have an interest in technology and new software that makes our daily lives easier and fun. I love to develop and create new things. I enjoy a challenge and then succeeding in the end. I enjoy web and mobile development, as well as writing systems for statistics and finances.

- Technical Skills

- **Java**

Java is the language I enjoy most. I have been using Java for the past 4 years.

- **XML**

I have used XML during my degree, and I have learned how to use it effectively.

- **Web Technologies**

PHP, Javascript, HTML, JQuery, AJAX, XML are some of the skills that I have acquired.

- **Other Languages**

Visual C#

C++

C
SQL
UML
Fortran
COBOL
Assembly

- Past experience relevant to project

I have worked for big corporate companies to help make their processes better and faster, by writing certain small programs to achieve big results. This included databases, statistics, macros, XML, Java and web-development. I have used web-development during my degree and I have learned all of the languages above during my studies. I have done some mobile app development during my second year of study.

- Non-technical strengths

I am very motivated and will always strive to reach my goals in time. I set personal goals to help achieve the goals of the project. I am a fast learner, a good listener and I will always help other team members where I can. I have a healthy balance between perfectionism and time management. I am honest, a hard worker and loyal. I enjoy a challenge that I can learn from, to broaden my knowledge. I have good general knowledge and I am not afraid to take the lead on a project.

- What makes you want to do the project

I enjoy doing mobile-development and web-development. This project has a mixture of mobile- development and web-development. This project will be a challenge, but it will be very interesting. I am looking forward to see an application like Eavesdropping and the protection against it. I would love to be part of the development of such an application.

2 Project Execution

2.1 Development Methodology

Because there is more than one aspect to this project (3 Objectives), we have decided to work with the Spiral model and combining it with Prototyping(Prototyping because the client expects at least 4 iterations). We feel that this will assist in the timely completion of the project, as well as give the client a better sense of progress because we will have a few smaller demo projects, instead of a once off big demo session where some of the information may get lost in the jungle of documentation.

2.2 How to keep the client informed about the status of the project

The client will receive weekly updates on our progress, as well as updated schedules after our bi-weekly group meetings on the matter. We will also book well in advance for meetings a week before all major project demos.

2.3 Initial ideas on solving some of the technical challenges

We are already doing research on the different ways of writing malware for android devices. One way we plan to do this is to write a usable application for Android devices, with malware hidden in the code.

2.4 Technologies we intend to use for the project

Technologies we are researching to be used are:

- IntelliJ IDEA
- C#
- Xamarin

- Visual Studio
- Markup Languages
Such as XML, HTML, XHTML, DTD, XSLT, XPath and TeX.
- Web Development Coding
Such as PHP, Javascript, CSS, AJAX, jNode and ASP.NET. Also I'm busy studying a variety of the World Wide Web RFC standards.
- Database Coding
Such as SQL, MySQL, MongoDB.

2.5 What the client will receive from us at the end of the project

Firstly, the client can expect an application that listened for the NFC tag, and then makes the required changes upon contact.

Secondly, we will write a malware program that will intercept sms's, do covert voice recording and then covertly send the recording by e-mail.

Lastly, we will develop a web server application with a user friendly GUI, that displays information about the individuals attending the meetings.