UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

PROJECT TENDER

Project: VizARD(Augmented Reality Data Visualization)

Client: EPI-USE Labs

Team: IMPAKD

TEAM MEMBERS
Diana Obo
Kudzai Muranga
Priscilla Madigoe
Sandile Khumalo

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF PRETORIA

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1 Meet the Team Members

Priscilla Madigoe

- ## <u>Interests</u>

  My interests include Computer Programming, Electronics, Computer Graphics, Robotics, travelling, photography, music, sports and reading novels.

- ## <u>Technical Skills</u>

  - Computer Programming with sound knowledge of Java, C/C++, MatLab, WebGL and Web-related programming languages.
  - Complex Problem-Solving using scientific and mathematical principles.
  - System Analysis to determine how a computer software should behave in set conditions.
  - Quality Control Analysis to evaluate the performance and quality of computer software.

- ## <u>Past Experience</u>

  The Software Engineering module had a preparatory project called the Mini Project that was created to give students a real-world experience of software development. I took part in the project and I have learnt the process of software development, team work and different technologies used to develop computer software.

- ## <u>Non-Technical Skills</u>

  My non-technical skills include critical thinking, reading comprehension, writing, effective listening, social perceptiveness and active learning.

- ## <u>Reason for Interest in the Project</u>

  I would like to expand my knowledge on Computer Graphics and Augmented Reality as I am currently enrolled in an elementary Computer Graphics course.

<h1 style="text-align:center">Diana Obo</h1>

- ## <u>Interests</u>

  My interests are travelling, game development, web development and anime. I also enjoy learning about new technologies and watching a lot of discovery channels and documentaries.

- ## <u>Technical Skills</u>

  - I have sound knowledge of Java, C++, HTML, CSS, Javascript, C#, MatLab
  - Mobile development (android studio)
  - 3DS MAX.
  - Ember.js and handlebar.js

- ## <u>Past Experience</u>

  - I participated in this year's Standard Bank IT Challenge.
  - I did an internship at a small company named Lepsta where I did web development.

- ## <u>Non-Technical Skills</u>

  - Willingness to learn
  - Team player
  - Organised
  - Diligent
  - Reliable

- ## <u>Reason for Interest in the Project</u>

  Since I am Interested in Game development, anime and Ive worked with 3DS max, this project will expand my knowledge in Augmented Reality and Computer Graphics.

Kudzai Muranga

- ### <u>Interests</u>

  I am an avid reader, I love fantasy novels the most. I like to keep myself up to date with the current affairs of the world. I am also interested in learning anything new that concerns science, technology and business.

- ### <u>Technical Skills</u>

  - I have sound knowledge of Java, C++, HTML, CSS, Javascript, C# and mobile development
  - Artificial Intelligence experience.
  - Business Management knowledge
  - Project Management

- ### <u>Past Experience</u>

  - Participated in the Standard Bank IT Challenge.
  - Invited to the Hello Group Open Day where I participated in a coding challenge using Java.

- ### <u>Non-Technical Skills</u>

  - I am interested and open to learning new things
  - Disciplined
  - Organised
  - Critical Thinking

- ### <u>Reason for Interest in the Project</u>

  I am interested in this project because I feel that it would allow me to use programming abilities extensively and teach me new and exciting skills.

Sandile Khumalo

- ## <u>Interests</u>

  My interest are coding , reading on new exciting, technologies ,watching and reading about football. I also enjoy weightlifting.

- ## <u>Technical Skills</u>

  - I am comfortable and have experience coding in these languages; c++, java, c#, php, html, javaScript, bash. I also have done 64 bit assembler language and I have experience in MINIX.

- ## <u>Past Experience</u>

  I have done a project in my software development class that is similar, it incorporates most of the technologies and frameworks used in the work place when developing big projects.

- ## <u>Non-Technical Skills</u>

  I am a hard working student, I am dedicated, I believe if there is a will, the is a way.Especially as a developer because most of the solutions are there, someone has done it before.It's a matter of good research and good understanding of the task at hand. I am willing to learn from every experience.

- ## <u>Reason for Interest in the Project</u>

  I find this project challenging and exciting, There is a lot to learn from it.It would be great to work on the augmented reality feature and expand my knowledge.

2 Project Execution

- ## Development Methodology

  For this project, the following development methodology will be used:

  - <u>Name:</u>
    Scrum
  - <u>What is Scrum?</u>
    Scrum is a lightweight management framework with broad applicability for managing & controlling iterative & incremental projects of all types (Takeuchi & Nonaka, 1999).
  - <u>Why did we choose to use it?</u>
    Because of all the potential additions that might occur at the different stages of development for this project, we have decided that Scrum is the best suited development methodology to use.

- ## Keeping the Client Informed

  To keep the client informed about the project, we are going to use the following technologies and strategies:

  - During the client meetings where we are going to discuss all aspects of the project.
  - Send email to set up appointments.
  - Use an application called Slack for general queries and updates.

- ## Ideas to Solve Technical Problems for the Project

  We are going to create a heuristic function to work out the optimal investment strategy depending on the users portfolio.

  - <u>First Phase</u>
    1. We will classify the type of property as either commercial or residential and have different algorithms to simulate the ROI for each.
    2. We will then take into account the most likely property related expenses associated with that property such as operational expenses which include utility bills and repairs.
  - <u>Second Phase</u>
    1. We will research APIs that wil help usl convert numerical data into statistical data to create graphs, charts, etc.

- ## Possible Technologies to be Used

  We are planning on using the following technologies for the project:

    – <u>Version Control:</u> Git

    – <u>Unit Testing:</u> JUnit Framework

    – We will use Maven for dependency management, plugin framework and support for modularization for projects.

    – For the implementation of the project, we will use a Model-View-Controller, or MVC architectural pattern with the help of Node.js and Ember.js to set up the web application.

- **<u>What Epi-Use Labs will Receive</u>**

  In addition to the given project deliverables, the client will receive a potential Android application.