Project Tender

Project: Flow Chart Planning and Simulation Tool

Client: Willem Van Heerden

Team: MPHETamines

Mkhabela Phethile

Ghoord Taariq

Rosslee Estian

Martha Mohlala

Masilela Siboniso

Setati Harrison Maphuti

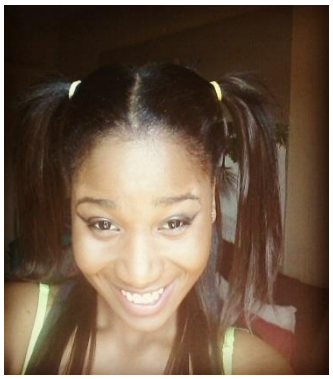
Department of Computer Science, University of Pretoria

Date: 4 May 2015

The Team

1.

- MKhabela Phethile



- Poetry, Clothing, Coding, Exercising and Reading
- NodeJs, Databases, C#, Java, Javascript, C++, Design Patterns ,Web languages, Mobile development, Networks, HTML, XML, CSS, JSON
- Cos Departmant Mini Project which I was able to work well with my team mates and got my component working and Integrate able.
- Fast learner, good research skills, can work well with other and easily adaptable to situations and new information
- In first year, we had to work with Java Block and I had difficulty working with that Interface and would like to see if I can create a better one.

2.

- Taariq Ghoord

- Coding, Gaming, Infrastructure
- C++, Java, Design Patterns, Javascript, NodeJS, Networks, HTML, XML, CSS
- Usage of Javablock , Mini Project experience
- Fast thinker, Problem solving and Code structure
- I enjoyed using Java Block in cos 151

3.

- Rosslee Ronald Estian

- AI, Security, Computer Networks
- C++, C, Java, Python,Databases(Microsoft Access, MySQL, MongoDB),Web Design(HTML5, CSS, JavaScript, PHP, NodeJS)
- Fluent in both English and Afrikaans, as well as some knowledge of French and Arabic
- What makes me want to do the project boils down to two interests of mine. Firstly, syntactic signatures or individual coding styles and secondly, pattern analysis. Participating in this project will give me an opportunity to research these topics and apply that research in a practical manner.

4.

- Setati Harrison Maphuti

- Gaming, Web Development, Photoshop
- C++, Java, NodeJS, Javascript, Web Languages, Networks, HTML, XML, CSS, JSON, Design Patterns
- 301 Mini Project
- Creative Design ability
- I am a very creative person who likes working with visuals and symbols and this project provides that and allows me to explore the creative aspect of computer science.

5.

- Martha Mohlala

- Web Development, Computer Networks
- Web Development(HTML,CSS, Javacript, JQuery, Ajax, Php), C++, Java, C#, Mobile development, Databases, .NET, JAVA-EE, NodeJS
- 301 Mini Project
- I am an open minded person whose career focus is on software and web development and computer networks. I like to take on new challenges and see to it that I create easy and cost effective solutions. I enhance my problem-solving skill by learning fast and as much as possible. I am hoping one day I will put what I have learned to help in developing the world wide solutions.

6.

- Sboniso Masilela

- Security, web Development
- Web Development(HTML,CSS, Javacript, JQuery, Ajax, Php), C++, Java, XML, XSLT, XML Path, DB4Objects, NoSQL, SQL
- Developing an agricultural application that farmers use to improve the growth of their crops, it gives them personalized tips and agile methods based on what they have planted(not yet fully completed).

Project Execution

- Development methodology: Agile software development methodology.
  Agile Development allows for big tasks to be sub divided into shorter phases of work, which tea members can work on independently. And also re-assessment and adaptation is important with big projects.
- Contact with client: The client is available as needed to the development team; the client is highly flexible to negotiate time for meetings. The client will meet with us regularly weekly or bi-weekly if necessary, we feel this ensures fully functional software which is in line with the clients liking at the end of the development of the software.

- Potential technologies:
  - Visual Basic .NET, C# or Java because they provide libraries which enable us to create responsive interfaces which is core for this project. The libraries provide us with functionality which will find useful in developing this program.

- Solving technical challenges
  - Problem statement

University of Pretoria needs software to replace Java Block which is used by the cos151 students in gaining an understanding of flowcharts and logic.

- Overview of current system
  - Cos151 students currently use JavaBlock which is a bit tedious
  - JavaBlock gets tangled very easily
- Proposed Solution
  - A simpler Interface to use
  - Untangling of complex structures for readability

- This will make the application interacting with our data system able to adhere to the following usability goals:
  - Effectiveness - make the product good at what it is supposed to do.
  - Efficiency - help to increase productivity.
  - Utility - provide the functionality that the users want/need.
  - Learnability - Make it easy for user to learn and use the product.
  - Intuitive - Make it easy to use and understand the application.
- Implementation plan

Each control structure or component will be a node on some sort of graph structure, at each node the syntax will be analysed and a route will be taken, the routes will simply be edges of this graph.

- Overview of Implementation Phase

Before implementation takes place, the development team will provide you (client)
With the following documents:

- Functional Requirements document
  - This document will address an in depth description of the Flow chart System, its primary and equivalent purpose of the system, set apart the functional and non-functional requirements of the system and its features, and the front end (which is the interface), and all the pre and post conditions that must be met when the system is working properly.
- Architectural Design document
  - This document will address an in depth description of the Flow chart System, based on what architecture patterns that will be used and why?, that will be based on features each pattern provide which equivalent to meet the requirements of the system and its subsystem, and it will give an in depth understanding of the non-functional requirements

- Testing Document
    - This document will simply give a full report whether and the pre and post conditions of the system are met and show whether the system works the way it is expected to.
- some of the usability goals include the following:
    - Effectiveness - is the product good at what it is supposed to do?
    - Efficiency - does the product help to increase productivity?
    - Utility - does the product provide the functionality that the users want/need?
    - Learnability - is it easy to learn to use the product?
    - Intuitive - is it easy to use and understand? etc.

Included in all the above stipulated documentation will be:

1. Unified Modelling Language (UML) diagrams to further illustrate the flows, operations, sequences etc. that form part of the system's operation.
2. Database Entity Relationship (ER) diagrams to illustrate the system entities that will form part of the system's persistent data.

- Users and installation manual

This document will provide a full description of how the system works to ensure

- effective usability of the system