HIGHER TECHNICAL INSITUTE

COURSE IN COMPUTER STUDIES

DIPLOMA PROJECT

THE GAME OF LIFE

CS/371

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Phase 1.

1. Investigation Phase.

1.1. Initial Investigation Activity.

1.1.1. Introduction.

My project will be a version of the Game of Life developed for mobiles. It will start from scratch based on the rules of the original Game of Life.

The Game of Life is a game devised by a famous mathematician named John Conway. John Conway originally placed an interest on a problem that another mathematician named John von Neumann was working on.

This problem was based on an idea of a hypothetical machine that could build copies of itself. Conway finally succeeded by simplifying Neumann's ideas and combining them with his previous experience with group theory and Neumann's ideas on self-replicating.

The Game of Life consists of a universe where there are infinite square *cells* and each cells can be either dead or alive. Logically each cell has 8 neighbours with which it interacts accordingly.

Some take the Game of Life as an allegory of human life. Nevertheless Game of Life, although is not entirely a game, its magnificent not only because of the allegory but because of the wonderful motives it can "draw" in its Universe.

1.1.2 Objectives of the Game of Life.

1. My project will be developed on a language that can develop programs (and games) for cell phones.

2. It will be based on the rules of the original Game of Life devised by John Conway.

3. The user will have the ability to enter the state of each cell: Dead or Alive.

1.1.3. Rules of the Game of Life.

The rules of the Game of Life, as mentioned before, were created by John Conway. The rules are:

- Any live cell with fewer than two live neighbours dies.
- Any live cell with more than three neighbours dies.
- Any live cell with more than three live neighbours lives.
- Any dead (not live) cell with exactly three live neighbours comes to life.

1.1.4. Information Gathering.

The information gathered for purposes of the Investigation Phase was found on the internet and it was concerned mainly on which programming language should be used for the development of a game for cell phones.

a) Microsoft Visual Studio .NET.

Microsoft, apart from the fact is probably the most famous and successful company as far as Operating Systems are concerned, it also provides a very powerful IDE, called Visual Studio.NET which includes a development toolkit specialised on mobile applications.

The advantages using Microsoft Visual Studio.NET are that it is very easy to develop an application with it. Plus when you experience a problem there is always msdn (Microsoft Developer

Network)which is an information service from Microsoft for software developers.

b)Microsoft eMbedded C++.

The Microsoft eMbedded C++ tool provides a complete desktop environment of developing applications and system components for devices that support Windows CE.NET.

The only advantage of this tool is for those that have the knowledge of C++.

c)Netbeans IDE 5.5.

Netbeans is a free IDE (Integrated Development Environment) for software developers. It can run on many operating systems such as Windows and Linux, among other.

Netbeans provide a mobility pack for developing mobile application programs.

The advantages of this choice are that it can be written in java which is a very powerful language, and that the program to be developed can run on any mobile that has Java Virtual Machine.

1.2. Feasibility Study.

1.2.1. Introduction.

In the Initial Investigation Activity there were investigated the programming languages and developments tools to be used for the development of the mobile game. Also the rules of the Game of Life were stated along with the objectives and purpose of this project.

The feasibility study is the second activity of the Investigation Phase. The purpose of this activity is to evaluate the various choices of solution in terms of feasibility. The outcome of this study is the best solution for the problem if there is one that is feasible.