

Universidad Técnica Nacional

Desarrollo de Software (ISW)

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Programming 1

Professor

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Name of the project

Drunk Ant

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Introduction.

In this project, there will be a game called the rubber ant, which consists of moving an ant through a map, but this will not be a simple map, but will be full of obstacles.

The technique consists of moving the ant to its ant nest with the help of the keys, the ant will have a level of health, alcohol and venom in which they will change depending on the box in which it is and what you get this.

The user will be free to adjust the size of the map and obstacles.

On the other hand, for the user to win, he must take the ant to his anthill, otherwise he will die and lose the game.

Problem Description.

Quality and visual part is one of the most important things in a game or application program. The project consists of making a game where the user can move an ant to its horizon without encountering the variety of obstacles that will be on the map. To use this theme, use the keys to move it.

One of the main problems with this game is the variety of obstacles that the ant has to be able to get a lucky destination, besides depending on its state the ant can make random moves.

Justification.

Through the years the human has been responsible for creating a new tool called technology that let us to develop with more efficient and this because nowadays we live in world where all things need more security and more optimization for to get a good job in our task and is good to know about this tool, because now technology is indispensable in any business.

There are many tools that help people with creating games and even applications.

Technology Stack.

In this project was used java language that has let us to develop the software and was used the Git Hub repository for to save the code of application. These technologies focus in pillars of the project.

Then we used different aspects that have each mentioned technology for example: in java we worked with OOP, UI thanks by java swing, and in Git Hub with work with Git.

What is Java?

“Java is a programming language and a computer platform commercialized for the first time in 1995 by Sun Microsystems. There are many applications and websites that will not work unless you have Java installed and more are created every day. Java is fast, secure and reliable. From laptops to data centers, from game consoles to super computers, from mobile phones to the Internet, Java is everywhere.” (Java).

What is Git Hub?

“GitHub is a Git repository hosting service, but it adds many of its own features. While Git is a command line tool, GitHub provides a Web-based graphical interface. It also provides access control and several collaboration features, such as a wikis and basic task management tools for every project. “(TCCruncOrg)

What is OOP?

On the other hand, is very important to say “OOP is a design philosophy. It stands for Object Oriented Programming. Object-Oriented Programming (OOP) uses a different set of programming languages than old procedural programming languages (C, Pascal, etc.). Everything in OOP is grouped as self-sustainable "objects". Hence, you gain reusability by means of four main object-oriented programming concepts” (Code Project).

What is Java Swing?

“Is a part of Java Foundation Classes (JFC) that is used to create window-based applications. It is built on the top of AWT (Abstract Windowing Toolkit) API and entirely written in java.

Unlike AWT, Java Swing provides platform-independent and lightweight components.

The javax.swing package provides classes for java swing API such as JButton, JTextField, JTextArea, JRadioButton, JCheckbox, JMenu, JColorChooser etc.”(JavaTPoint)

Game Details.

The game consists of making the journey of the ant to the anthill inside a square area (matrix) each box can hide a lump of sugar, wine, poison or absolutely nothing. When the ant falls into one of these your level of alcohol, health or poison can be modified as well as your state.

The user can choose the number of lumps and the size of the matrix.

Path.

Matrix:

It will create a matrix that will be the map that will have to travel the ant to reach the anthill but the road will be full of obstacles that are: clods of sugar, poison and wine which will change the level of alcohol, life or Poison depending on which falls, it is worth rescuing that the user cannot see where these obstacles are to make it a little more difficult.

Steps:

The user will be able to move the ant using the arrows on the keyboard, each step they will have to check what gets that box to see if their health, alcohol or poison levels and their respective states.

If the ant eats some lumps, it must disappear, something very important is that the ant cannot return immediately by the previous square.

Movements.

Walk:

For the ant to move it receives a direction of the arrows of the keyboard (up, down, right, left) and the current position of the ant, after receiving this the movement of the ant will be made to the place that the user always indicates and When it is valid.

Hip:

The hip runs as long as the ant's spirit level is greater than 0, so that the ant is moved receives a direction of the arrows of the keyboard (up, down, right, left) and the current position of the ant, after receiving this the program will perform a random and will move the ant to where it wants, as long as this movement is valid.

Eat.

If the ant falls in a box where there is a lump you should find out what kind of lump this is, if it is a lump of sugar you eat it and your health increases by 10, if it is a lump of wine you eat it and Your health level is low at 10 and the alcohol level increases by 20, if the lump is from poison you only eat it if the ant is drunk (alcohol higher than 0) otherwise you will not eat it.

Modify the level of the Ant.

Sober:

- If you are sober and reach an empty box, you can continue at the address indicated by the user.
- If it is sober and reaches a square with a normal sugar lump, it is then eaten (and, therefore, the lump disappears) and continues in the direction indicated by the user. The health indicator increases by 10.
- If you are sober and reach a square with a sugar lump with poison, then do not eat it and continue at the address indicated by the user.
- If it is sober and reaches a square with a lump of sugar with wine, then the ant eats it, the lump disappears and its health indicator drops by 10 and the alcohol level increases by 20, to advance is invoked the hip method To move in another direction.
- If you are sober and bump into a wall, you must walk in another direction.

Drunk:

- If you are drunk and reach an empty box, then continue at the address indicated by the user. The alcohol level drops by 10.
- If you are drunk and reach a square with a normal sugar lump, then you eat it (and therefore the lump disappears) and the health indicator increases by 10 and the alcohol level drops by 10. Then continue Address indicated by the user.
- If you are drunk and reach a square with a sugar lump with poison, then you eat it and the health indicator drops to 50 (enters poisoning state that lasts 3 turns).
- If you are drunk and reach a square with a sugar lump with wine, then the ant eats it (and therefore the lump disappears) by increasing the alcohol level by 20,

decreasing the health indicator by 20, to advance the hip method is called to move in another direction.

- If you are drunk and hit a wall. The hip method is invoked to continue its path.

Poisoned:

- If it is poisoned and reaches an empty box, then continue at the address indicated by the user. The health indicator increases by 10.
- If it is poisoned and reaches a square with a normal sugar lump, it is eaten (and therefore the lump disappears) and then continues in the direction indicated by the user. The health indicator increases by 20.
- If it is poisoned and reaches a square with a sugar lump with poison or wine, then it eats and dies.
- If you are poisoned and hit a wall, lower your health indicator by 20 and you must walk another way.

Ant States.

If the ant has an alcohol level equal to 0 the state of this will be sober.

If the ant has an alcohol level greater than 0 the state of this will be drunk.

If the ant has a level of alcohol greater than 0 and falls in a box with poison its state will be poisoned.

If the ant reaches an alcohol level equal to 50 the ant will die and the game will end, its state will be dead.

If the ant reaches a level of health equal to 0 this will die and the game will end, its state will be dead.

If the ant is in a state of poisoning and falls into a box with alcohol or poison, this one will die and the game will end, its state will be dead.

Game over.

When the ant is dead or has won the game, the map of the game will be displayed, indicating the route of the ant and showing in which boxes there were clumps of poison, alcohol or sugar will also be shown in which the ant ate one of these.

Results.

Graphic interface design	Successful process *
Structure of objects	Successful process *
Game logic	Successful process *
Playing the game	Successful process *
Settings	Successful process *
File usage for settings	Successful process *
Documentation	Successful process *

Percentage of tasks.

Aspect	CARLOS
Graphic interface design	100 %
Structure of objects	100 %
Game logic	100 %
Playing the game	100 %
Settings	100 %
File usage for settings	100 %
Documentation	100 %

Conclusion.

In the planned project that was carried out it is possible to highlight the points that must be covered and consider the possibility of successfully carrying out a game program.

As the project developed, it was possible to see the importance of games in people as it is considered a hobby that allows us to forget certain problems, release stress, among many more problems.

In addition, to have a better vision of the impact that games have on people, which helped to see how they could help people to distract themselves a little from their daily routines, also in what aspects can improve games for that are more attractive, not only to children but also to adults to satisfy all users.

It is possible to highlight many things that were learned throughout the project, however, one of the most important is to carry out a planning of the problem to be solved and that is expected to obtain when it is carried out, it should clarify what is required for the development of a successful project that meets the needs of users.

Recommendations.

- Create a history where the user can see all their games played.
- Create a ranking where the user can see what was the best and worst game I played, depending on the state and health level with which it ended.
- Implement a timer so that the user is more pressured and the game is a little more complex.
- The user can choose the ant they want to play with.
- Add more variety of obstacles and ask questions every time you make a move.

Bibliography.

1. Icones : <http://icones.pro/es/>
2. Java.com. (2017). What is Java and why do I need it? [online] Available at: https://www.java.com/en/download/faq/whatis_java.xml [Accessed 17 Jul. 2017].
3. www.javatpoint.com. (2017). Java Swing Tutorial - javatpoint. [online] Available at: <https://www.javatpoint.com/java-swing> [Accessed 17 Jul. 2017].
4. <https://www.youtube.com/watch?v=20nCAAdLoIMM>