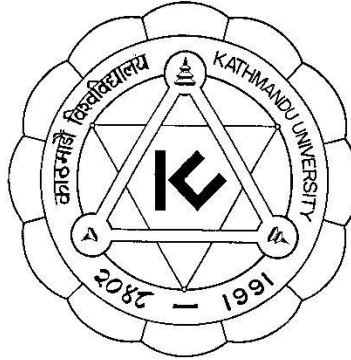


KATHMANDU UNIVERSITY
SCHOOL OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



ENGINEERING PROJECT
1ST YEAR 2ND SEMESTER

A PROPOSAL
ON
'TUK TUK'

To
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Abstract

The How-To application is a user-interactive program which presents you to the real life problems and the ways of doing such things on your screen and also learn to do them in real life. This program is basically written in C/C++ using the graphics library.

This application mainly targets on the technical users, the one that require uniformity in their work. It has a simple user-friendly environment of what might happen in performing any tasks, what will be the possible mistakes and how to over-come them. The user will find himself with some real life problems which will then guide him through the problem and solve it. This alpha version of this program however is mainly aimed for the children of age group 5-12, who are eager to doing different technical tasks, like fitting a gas regulator, changing the wall-clock's batteries, connecting different parts of the computer, building a Lego house etc.

We further hope in continuing this program adding different types of other complex problems, like changing a electrical wall socket, building a electrical/electronic circuit, how to build a chair, and other complex real life problems. By adding more complex features, we not only help the children, we help people of all age groups, making the world around us simpler to live in.

Table of Contents

Introduction:.....	4
System Analysis and Design.....	5
Algorithm:.....	6
Flowchart:	7
Sample User Interface.....	13
GANTT CHART	14
Conclusion:	14
References:.....	15

Introduction:

1.1 Background:

"Time you enjoyed wasting is not the time wasted." With a view of enjoying leisure we have come up to create "Tuk Tuk". Inspired by earliest arcade video game "Pong" originally developed by Allan Alcorn and released around the world in 1972 by Atari corporations, we created and designed a simple modified version of the game where protagonist combats a large number of enemies by shooting at them while dodging for their life like "shoot em' up" genre. Based on the sound produced while shooting and on re-bouncing motion we have named it "Tuk Tuk". We have hoped to make this game both entertaining and educational.

1.2 Objective:

Our major objective were:

- ☐ Create a presentable game using a programming language that can be played by multiple types of people.
- ☐ Create a play/learn environment where people learn as they play.
- ☐ Enhance the level of understanding about the object oriented programming and coding of the involving members of the group.
- ☐ Obtain the basic knowledge of game development and the understanding of how the code is changed into a game.
- ☐ To understand how a game's internal mechanics function to create a playable gaming interface and experience.

1.3 Features:

The game will have following features:

- ☐ Interactive graphical user interface
- ☐ Made using C/C++ programming language
- ☐ Shoot em' up genre
- ☐ SDL graphics library
- ☐ Self-made user interface and objects in the game(using Adobe Photoshop CC)

1.4 Scope:

The game has the following scope:

- ☐ Playable by children and adults alike
- ☐ Various difficulty level for different level gamers
- ☐ Also applicable for engineering level study

1.5 Case Study:

We excessively searched the web looking for the games that could be made using C/C++ programming language. We browsed through various sites looking for ideas and inspirations on making a good game. We stumbled upon the popular internet topic “How to do.....” So we took the idea where people would have to complete a set of objective either within unlimited time or within a given following a set of rules. The use of graphics library was critical for the development of the game so we discussed upon various graphics library and finally decided on using SDL graphics library.

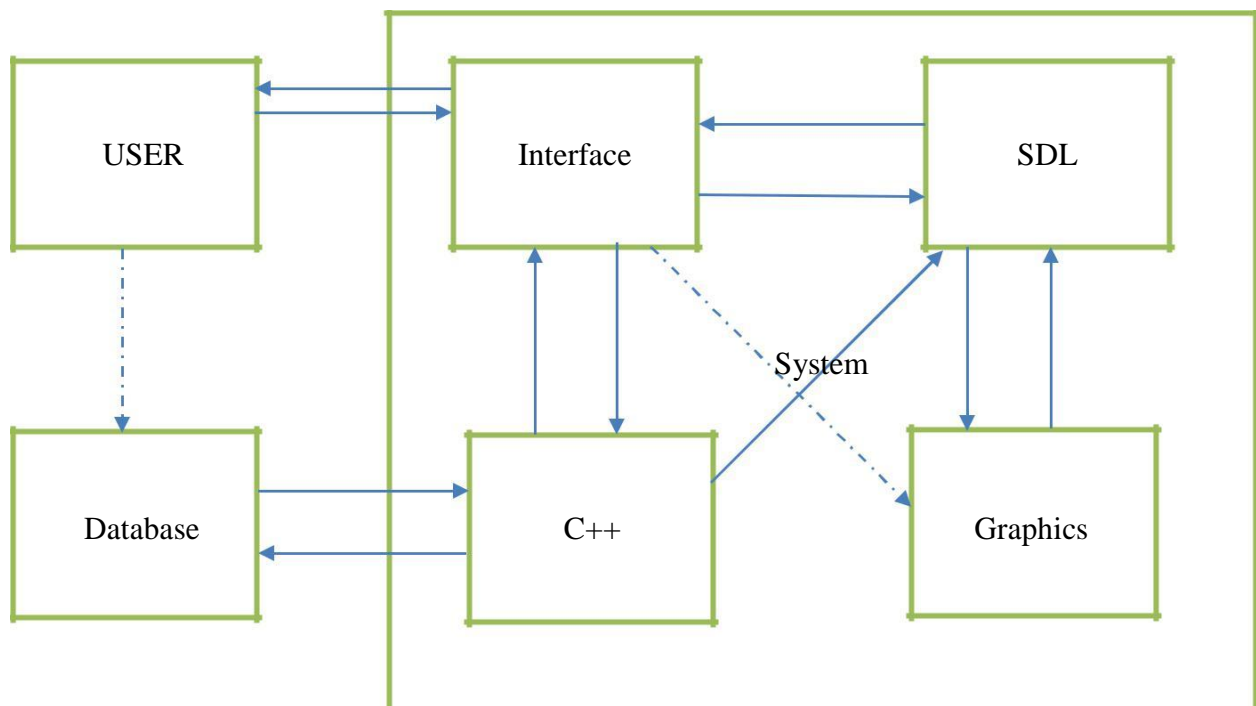
System Analysis and Design

System Overview:

The system code is based on C and C++ programming language. It follows the concept of Object Oriented Programming (OPP). It uses SDL 2.0 libraries for graphics. The user interface is simple and easy to use.

- ☐ **Platform :** Windows[®]
- ☐ **Programming language:** C, C++
- ☐ **Graphics Library:** SDL 2.0
- ☐ **Development tools:** Code::Blocks 13.12
- ☐ **Graphics tools:** Adobe[®] Photoshop[®], Adobe[®] Illustrator[®]
- ☐ **Compatibility :** Windows[®] & Linux
- ☐ **Hardware specification:** Minimum requirements are 64 MB* RAM, 1.6 Ghz* CPU, 100 MB* free disk space

System Diagram



Algorithm:

Promo function:

- Step 1: Start
- Step 2: Play the promo of the game (video or animation)
- Step 3: Call main function

Main Function

- Step 1: Start
- Step 2: Display Home screen with options to continue
- Step 4: Ask for a option
- Step 5: Read a option
- Step 6: If chosen 'Start', Call Start function
- Step 7: If chosen 'Option', Call option function
- Step 8: If chosen 'Credits', Call credits function
- Step 9: If chosen 'Help', Call Help function
- Step 10: if chosen 'Exit', goto step 11
- Step 11: Stop

Start Function

- Step 1: Start
- Step 2: Display Lists
- Step 3: If chosen any option from lists, call playgame function
- Step 4: If chosen 'back' call main function

PlayGame Function

- Step 1: Start
- Step 2: Display play screen
- Step 3: Input mouse movement and drag and drop phenomenon
- Step 4: Read the dragged and dropped input
- Step 5: Check if the input is correct if yes goto step 6, if no goto step 4
- Step 6: Do until all input are feeded
- Step 7: Display the congratulation message with next level option and back to main menu option.
- Step 8: If chosen, 'back' then call main function

Option function

- Step 1: Display options list : Music, Sound, In Game Help, Back to Main Menu
- Step 2: If chosen 'Music', goto step 6
- Step 3: if chosen 'Sound', goto step 7
- Step 4: if chosen 'In Game Help', goto step 9
- Step 5: if chosen 'Volume', goto step 10
- Step 6: if chosen 'Back to main menu', goto step 11
- Step 7: initialize Music value to 1, if clicked change value to 0 and vice versa
- Step 8: initialize Sound value to 1, if clicked change value to 0 and vice versa
- Step 9: initialize In Game Help value to 1, if clicked change value to 0 and vice versa

Step 10: If x-coordinate value increases, volume increases else if x-coordinate value decreases, volume decreases.

Step 11: call main function

Credit Function

Step 1: Start

Step 2: Display Name of the Programmers, Helpers.

Step 3: Display Back to Main Menu Option.

Step 4: If chosen 'Back to Main Menu', call main function.

Help Function

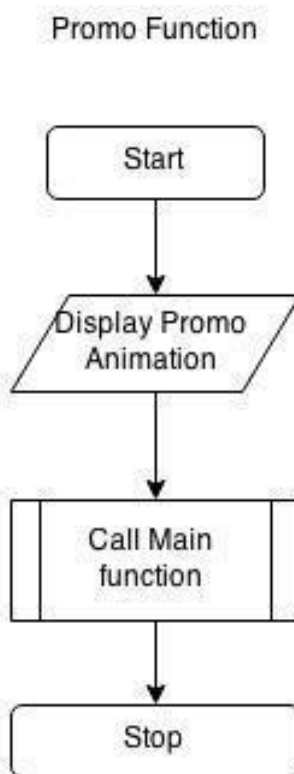
Step 1: Start

Step 2: Display the required help to interact with the game or play the game.

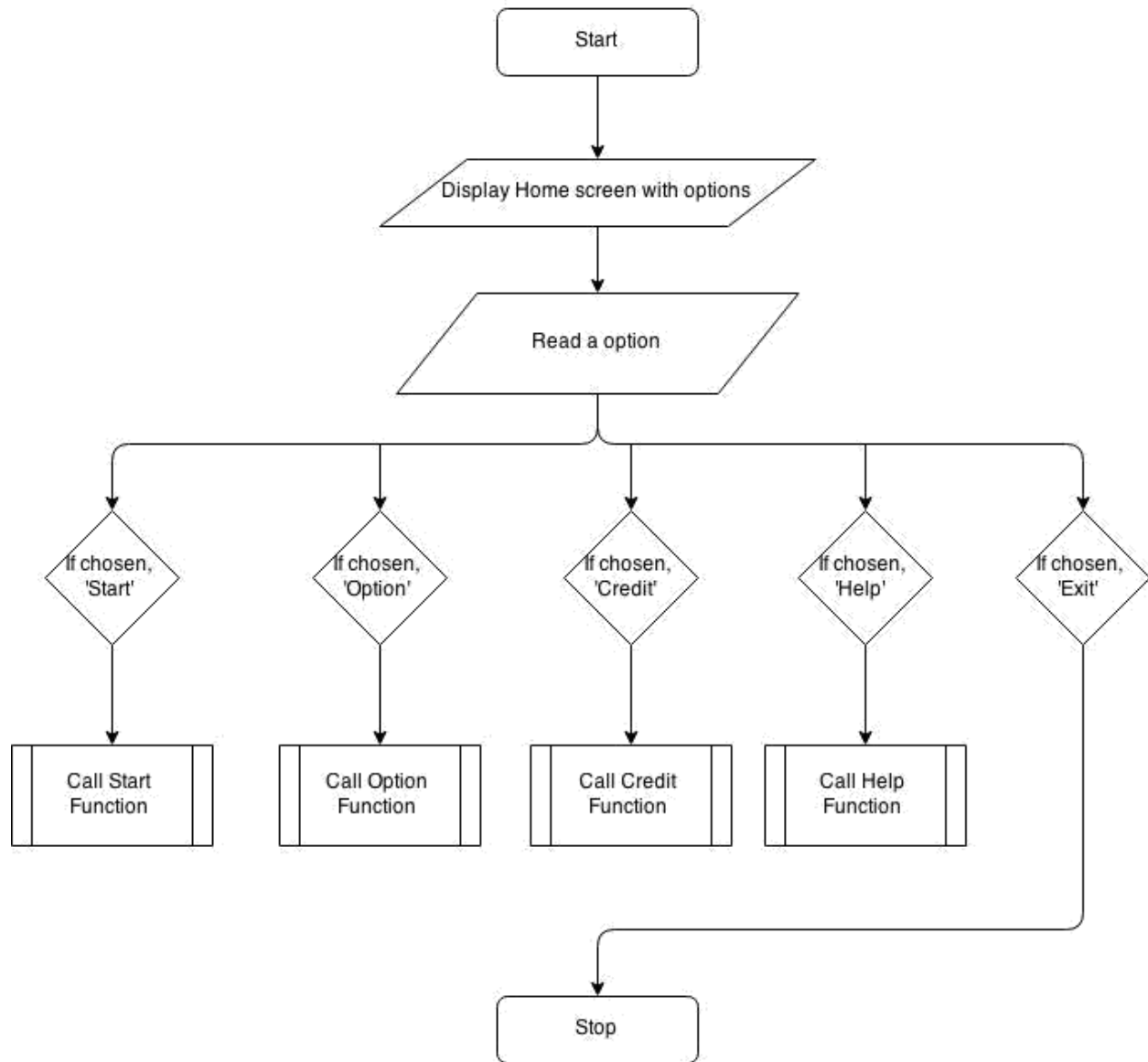
Step 3: Display Back to Main Menu option

Step 4: If chosen 'Back to Main Menu', call main function

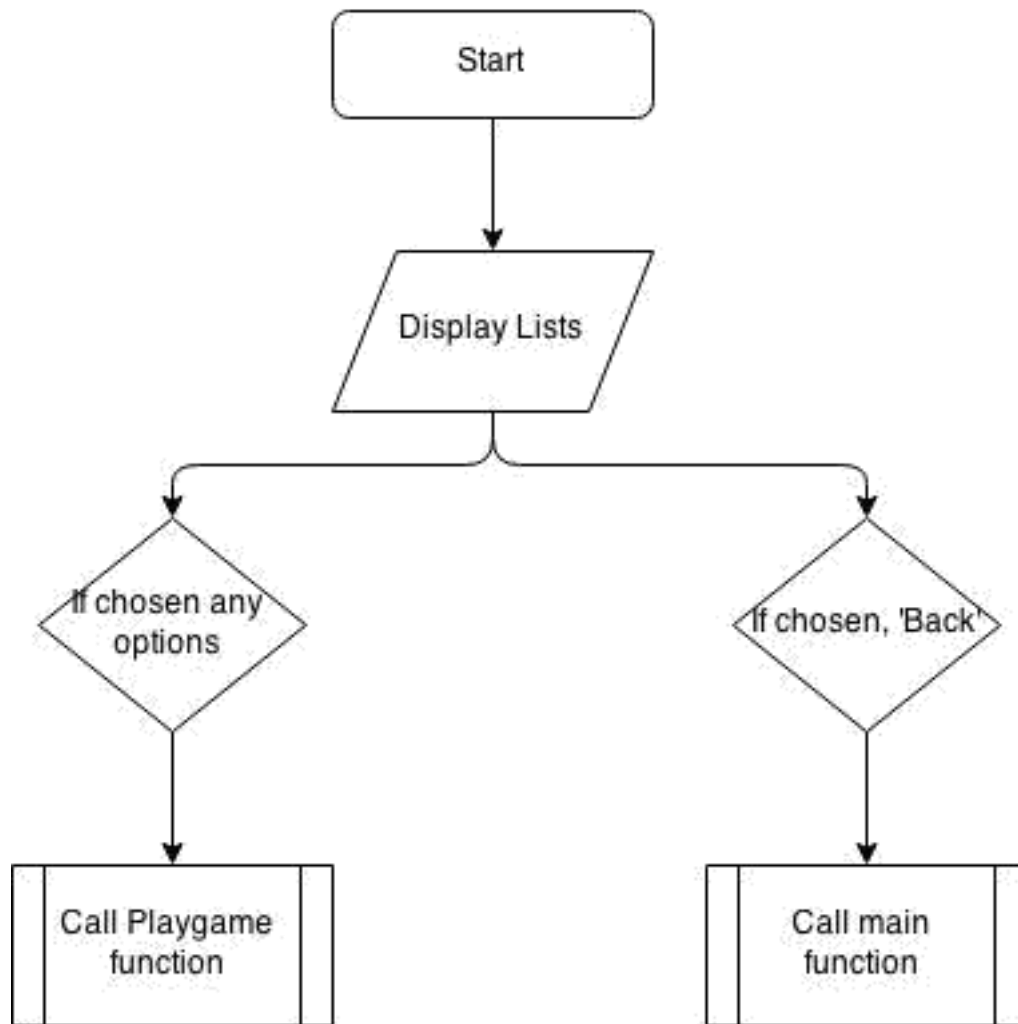
Flowchart:



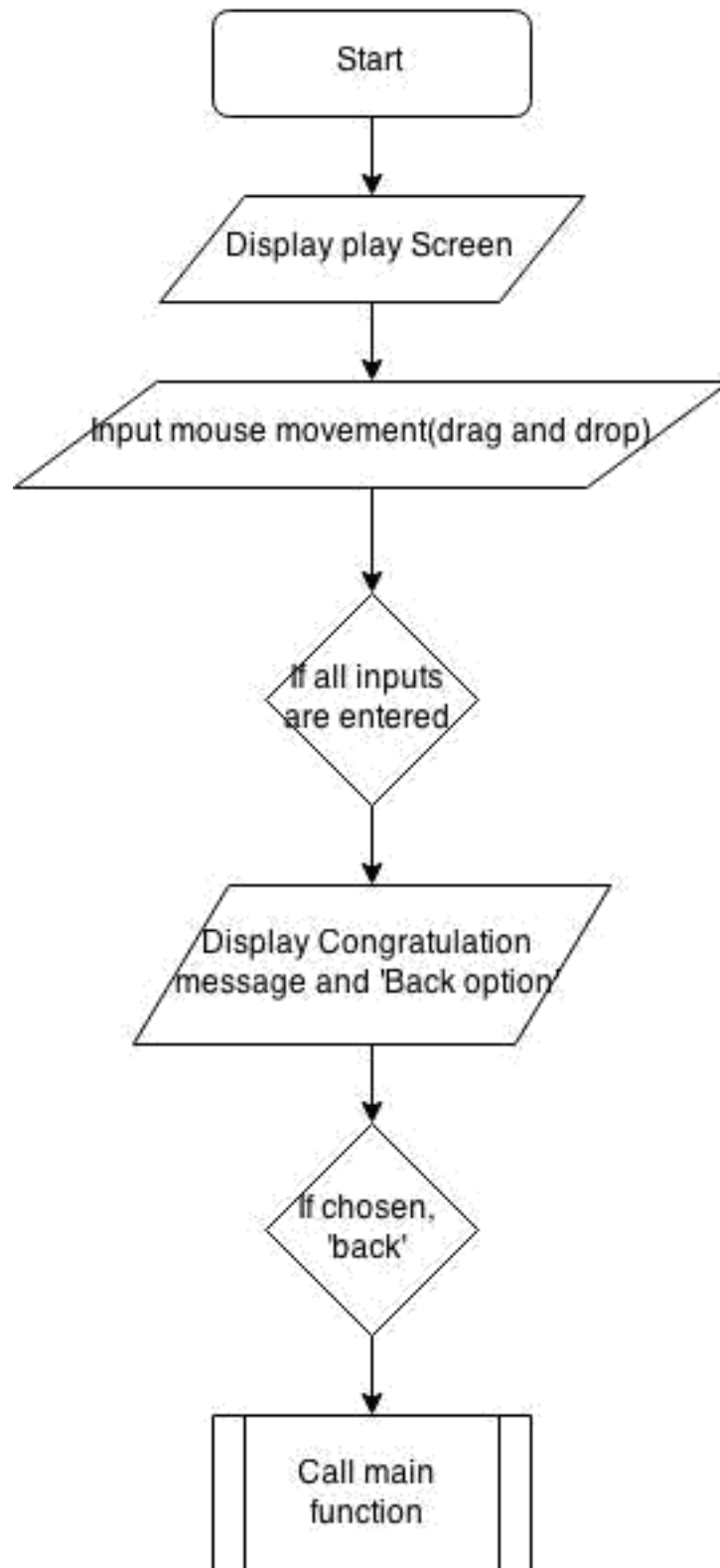
Main Function



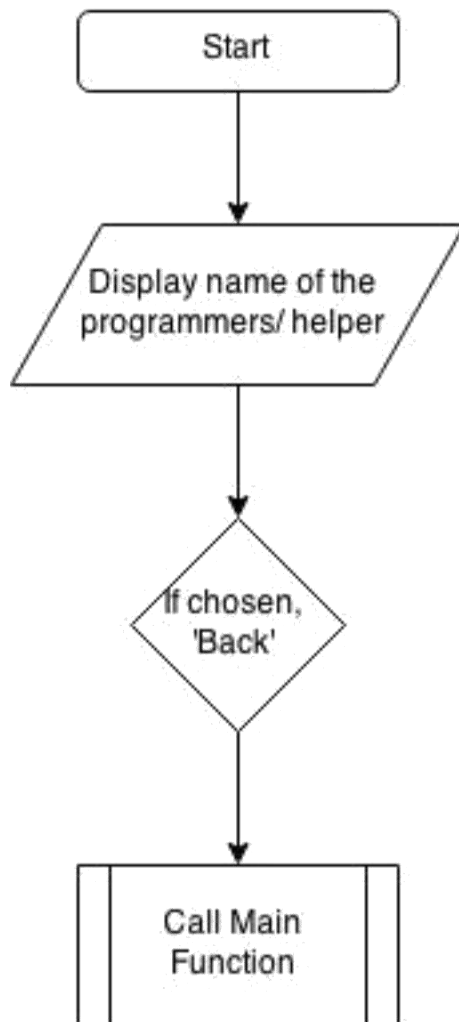
Start Function



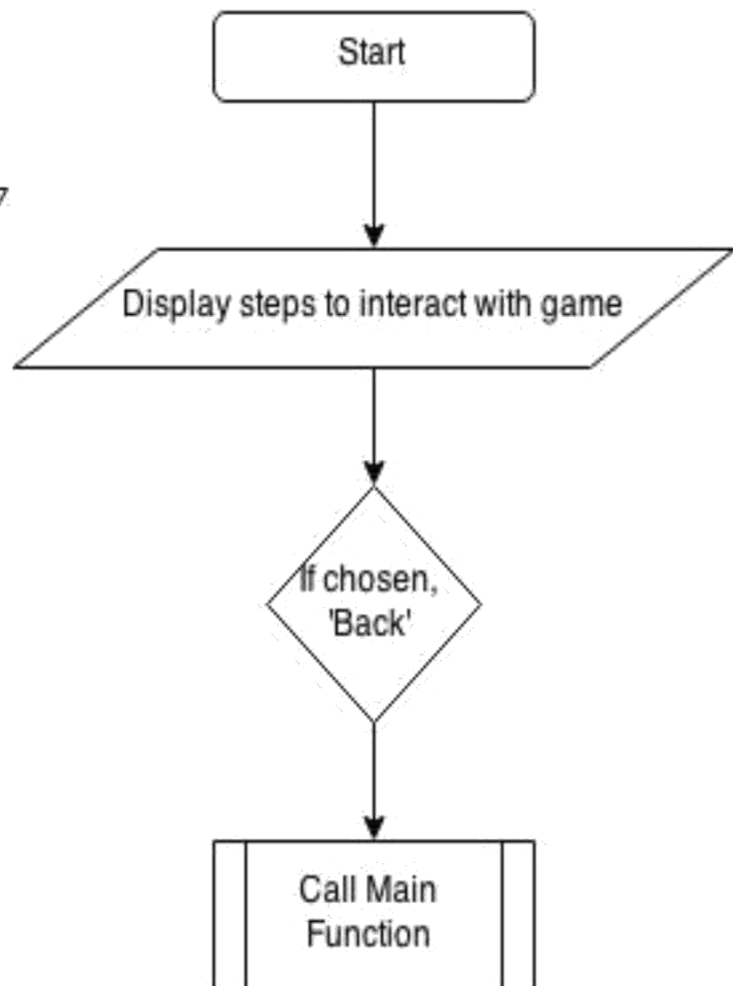
PlayGame Function



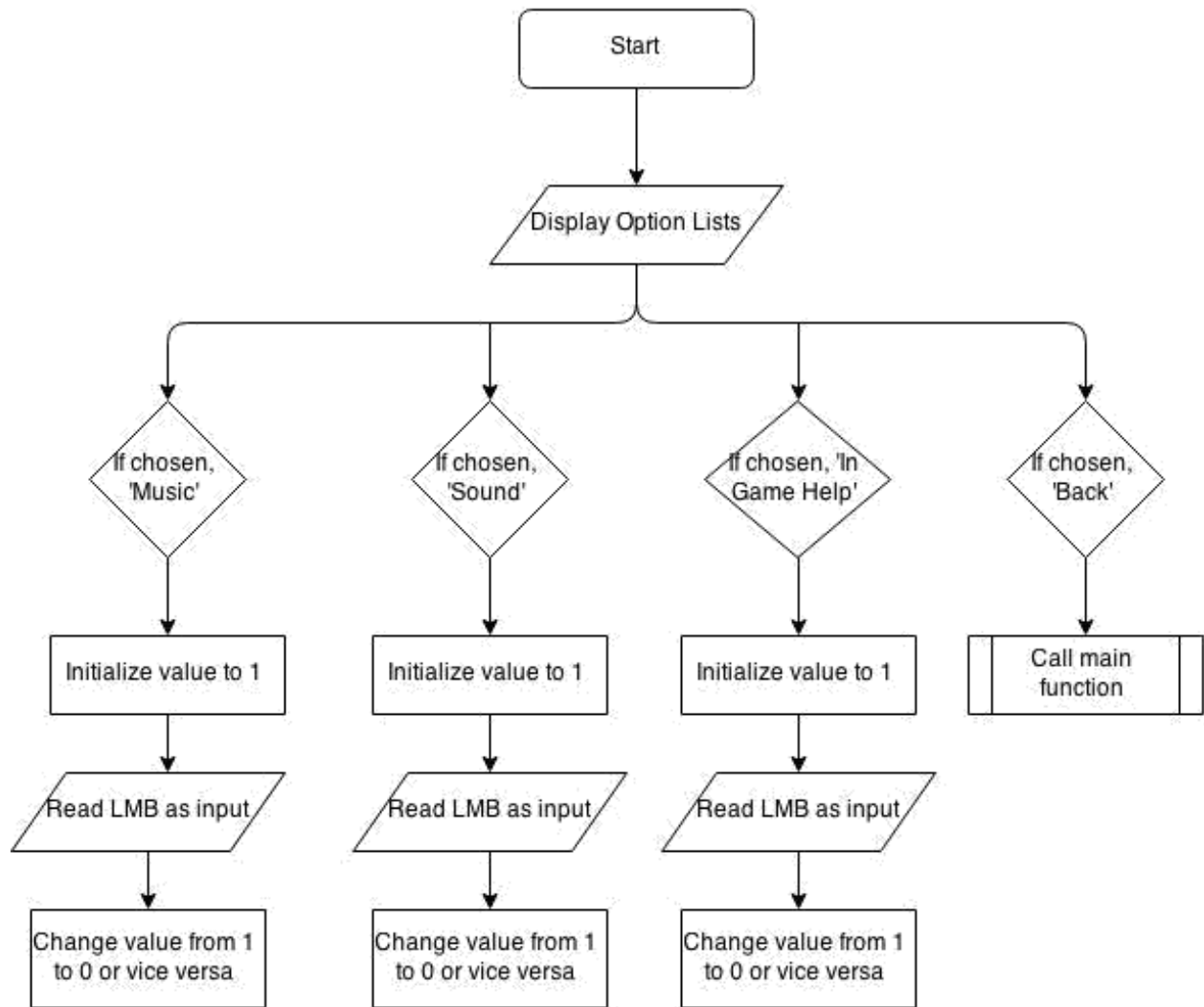
Credit Function



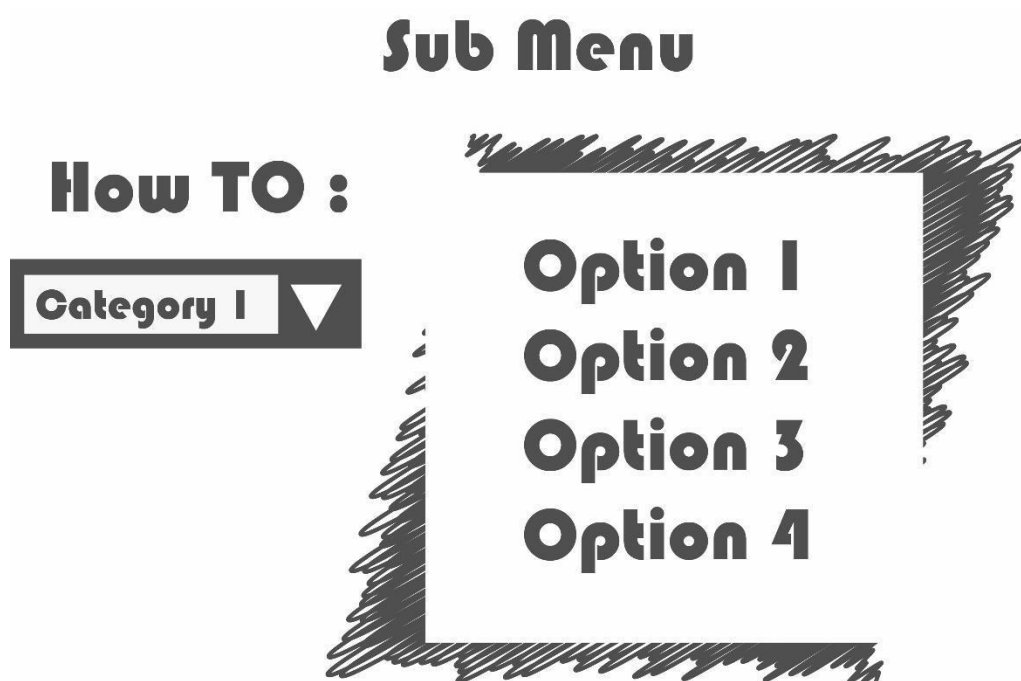
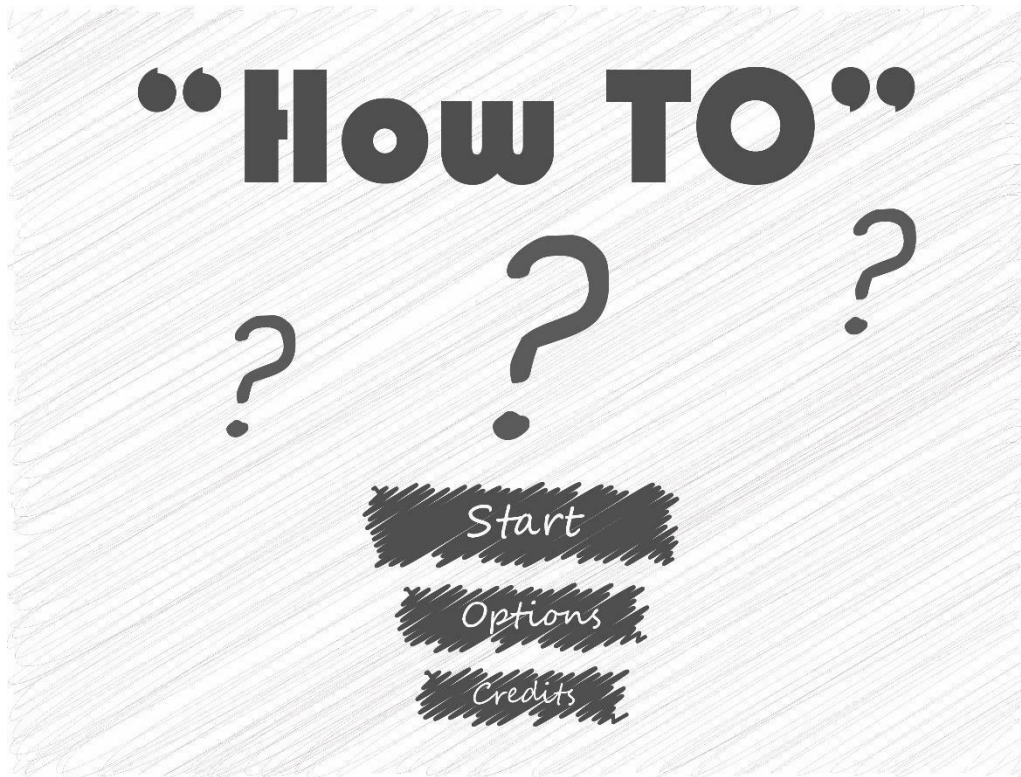
Help Function



Option Function



Sample User Interface



GANTT CHART

Work Week	1	2	3	4	5	6	7	8	9	10	11	12
Research and study												
Graphics designing												
Core programming												
Program testing												
Documentation												

fig: Gantt Chart

Conclusion:

So the project “How to” is going to be a team effort and the team members will try their best to make a good game which the team members will enjoy making and the audience will enjoy playing whilst learning something at the same team.

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