

Software Requirements Specification

CS101 Projects 2014

**Stickman
TEAM ID - 245**

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1. INTRODUCTION

1.1 PURPOSE

This document provides a detailed description of our software viz. STICKMAN.

It provides description of the different types of requirement of the software system. It will also brief the technical aspects of the software such as the purpose and features of the system, interfaces of the system, what the system will do.

1.2 SYSTEM OVERVIEW

This program runs on both Windows and LINUX interface. The system must have a compiler preferably CODE::BLOCKS with SDL 2.0 package installed. The required .dll files for the program should be present in the windows system directory and required libraries should be linked with CODE BLOCKS.

1.3 REFERENCES

- <http://en.wikipedia.org>
- <http://www.google.co.in/>
- <http://stackoverflow.com/>
- <http://lazyfoo.net/tutorials/SDL>

2.OVERALL DESCRIPTION

2.1 PRODUCT PERSPECTIVE

The main aim is to allow user do various acts in the screen shot of a display with a special stick type character.

When application is opened a window will be formed that will contain the desktop and a stick figure that is controlled by the user.

2.2 PRODUCT FUNCTIONS

The main purpose of this program is to display the user various animations using a special stick type of character. This program enables the user to take screenshot of a particular display and add various effects to this display such as burning or breaking certain part of display, move the character and many other special functions.

3.DETAILS

3.1 FUNCTIONALITY

This software is constructed in the open source IDE platform Code::Blocks.

It uses Photoshop to create different frames of the stick figure. The graphical package used is SDL 2.0 which gives user a better display of the actions on the screen in its best state.

3.2 SUPPORTABILITY

This software is basically supported on any interface whether it is MS Windows or LINUX Ubuntu. The software should be run on minimum of 500 MHz, 256 MB RAM machine. For speed processing the preferable configuration is 1.2 GHz, 2 GB RAM machine. The display of the machine should be capable of an fps (frames per second) of at least 60.

3.3 DESIGN CONSTRAINTS

The animations used consist of multiple frames which will be displayed one after the other whenever the required function is called. At the start of the program, a function will be called that takes the screenshot which will be used in the program.

3.4 ON-LINE USER DOCUMENTATION AND HELP SYSTEM REQUIREMENTS

A Help template, or User Manual regarding the issue on how to use the software, the basic software requirements, and the constraints and assumptions made during the development of the project will be displayed to the user. This document will also be made available under the official website of the CSE Department of IIT Bombay, Mumbai.

3.5 INTERFACE

3.5.1 HARDWARE INTERFACE

The software requires only the basic hardware requirements which are monitor, mouse, keyboard and CPU as a processing unit. It do not require any other additional hardware for the processing of the software.

3.5.2 COMMUNICATION INTERFACE

The user can interact with the software using a mouse and keyboard. The functions of the stickman are triggered by simple keyboard keys that will be displayed as a template on the screen.

3.6 BASIC ASSUMPTIONS

3.6.1 The user should be aware on how to deal with a computer with mere working knowledge.

3.6.2 The user should understand English.

3.6.3 The machine on which work is being performed should meet the specified hardware and software requirements to run the system software.

4. QUALITY CONTROL

4.1 TEST DATA

Since the animation used is frame wise, the movements or the actions may appear to be broken and shabby. This can be fixed by using lot of frames. There will be specific functions for every action of the stick figure due to which the program's response may not be spontaneous. The code can be made more efficient to tackle this problem. We will attempt to make different combinations of the performed actions. We will also put sound effects for the actions performed. VECTORS will be used for image processing.

4.2 TEST CASES

PLANNED SCENARIO

The program should run smoothly. The stick figure should be able to walk, run, punch, kick, jump and burn things on the screen. Also the

sound effects and the image processing should be in synchronization with the action.

ACTUAL SCENARIO

The stick figure is moving properly and is also able to perform the promised functions. But it is not that smooth because SDL does not promise such great animation. The image rendering for movements is quite good .We have used vectors for that purpose. Overall, it is as good as we expected using SDL.

4.3 DIVISION OF WORK

The project is almost equally divided amongst the four group members as follows–

Mehul Khandelwal will write the function for all the actions and movements of the figure. He will also make the exit button executable with the mouse.

Shravan Tangudu will do coding for basic appearance of various layers. Will code and make sprites for all frames. He will also write the outline of the code.

Gopal Kedia will do coding for image synchronization with the action performed by the figure using vectors. He will also work for improving the program so as to minimize the lag.

Aditya Krishnakumar will add sounds effects and coordinate their timing with the action. He will make a function for screen capture feature.

Testing Methods –

Easy – The easy part of the code was to render images, using keys for different functions in the program, and making the sprites for different actions to be performed.

Moderate – The functions regarding various actions of the figure, toggling between various frames for a particular action and using the mouse cursor for exit button.

Tough – The difficult portion lies in the part where sound has to be synchronized with its movements and creating the effects related to the movement performed by the stick figure.

5. RISK MANAGEMENT

There may be instances when SDL will fail to initialize. In this scenario, an error message will be displayed followed by another attempt to initialize it. In case, if any part of the program has a loose end, the program will terminate after 10 seconds.

Weekly division of work –

February (22nd – 28th) – From 22nd to 28th of this month we decided to model the outline of our stickman code and distribute the work equally among the team members.

March (1st – 15th) – In this period, we will complete the functions regarding interface, display, and find a graphics package for image synchronisation.

March (16th – 31st) – Start making the frames and write the code for different actions to be performed by the figure .

April (1st – 14th) – Using vector function for adding effects and assigning appropriate sound for every defined action.