FINAL PROJECT DOCUMENTATION

STAR WARS

CS101:Computer Programming And Utilization Project, 2011

::::::Introduction of Team Members and Teaching Assistant::::::

Teaching Assistant : Shashank Rachamalla

Team:

Team 1:

Mayank Meghwanshi
{
> Roll No:110050012
> Branch:B.Tech CSE
> Hours Spent : about 36 hrs
> marks:10
}
Mrinal Mishra
{
> Roll No.:110040049
> Branch: B.Tech Civil
> Hours Spent:about 31 hrs
> marks:9
}

Team 2:

Mohammad Saquib Alam
{
> Roll No.:110260022
> Branch: B.Tech Engineering Physics
> Hours Spent : 24hrs
> marks:9
}

Monimoy Bujarbaruah
{
> Roll No.:110010029
> Branch: B.Tech Aerospace Engineering
> Hours Spent: 25hrs
> marks:7
}

Team 3:

Mohammad Anees
{
> Roll No.:115320002
> Branch: M. Sc Geo Physics
> Hours Spent: 29hrs
> marks:8

        }
        Mukesh Chauhan
        {
                Roll No.:115280022
                Bramch: M. Sc. Applied Statistics
                Hours Spent:26hrs
                 marks:7
        }

        Moradiya Jalpa Ishwarbhai
        {
                Roll No.:115280002
                Branch: M. Sc. Applied Statistics
                Hours Spent:20 hrs
                 marks:7
        }

Introduction to Project:

Name Of Game : Star Wars
Purpose : CS101 Project
Sysytem Requirements : Ubuntu ver8.0 or greater

For Users:

Once user logs into the game through command prompt with His/Her Name,a Welcome popup will appear followed by the Home Screen of the Game.

There will be six Main Menus on Home Screen.
1)Start   2)HighScore   3)Level
4)Instructions   5)Credit   6)Exit

Start: By Clicking on Start button, the game wil get started. Here a Gun will be to shoot the obstacles, generated automatically. User have to control the gun through mouse, bullets will ve fired automatically. On the LEFT bottom of the screen LEVEL and SCORE will be displayed and on right bottom, Exit button will appear.User can exit at any time by clicking on this.

        The level get togher after gross of every 50 points. Once the use misses three obstacles game will get over and the highest score will get saved by user name. User can also change any higher

level before start playing from the LEVEL button on home screen.

HighScore: Clicking on this button, a new window will appear containing top 10 score and the name of the scorer.The window will get closed automatically in few seconds.

Level: Using this button, user can select any level from 1 to 10.

Instruction: This page contains all info regarding the game controls and activity.

Credit: This menu will diplay name of team members who developed the game.

Exit: Using this menu, user can exit the game.

Programs:

Global Variables:
//xclick,yclick mouse click
//xcursor,ycursor cursor position
//xc,yc center of window
//xg,yg xgf,ygf coordinates of starting and endpoints of gun
//length distance between cursor position and (xg,yg)
//xb,yb coordinates of ball
//xo,yo coordinates of obstcle
//xw,yw size of window
//obspos matrix containing x,y coordinates of obstacle
//ballpos matrix containing position of ball
//level to decide difficulty level of game
//ballcount,obstaclecount number of elements in respective matrixes
//countinstruction counts number of click on instruction window

Standard Libraries Used:
#include <assert.h>
#include "ezwin.h"
#include<cstring>
#include<cstdio>
#include<stdlib.h>
#include<GraphicPosition.h>
#include<cmath>
#include"circle.h"
#include<time.h>
#include"SimpleWindow.h"
#include"bitmap.h"
#include"rect.h"
#include"ellipse.h"
#include"Alert.h"

User Defined Libraries:

#include"playgame.h"
#include"cursor.h"
#include"ball.h"
#include"Mousestart.h"
#include"draw.h"
#include"obstacle.h"
#include"collide.h"
#include"click.h"
#include"start.h"
#include"startfunctions.h"
#include"sort.h"
#include"clicklevel.h"
#inlcude"clickinstruction.h"
Functions Used:

int APIMain(): In this function we are asking user to enter its name. This function is loading all the images used in the program. At the end of this function we are calling start() function.

void start(): In this function we are creating the Home screen of the game using following functions-
   RenderText(): displays text
   SetPosition(): sets the position of images on the screen.
   Draw(): to draw the object on the screen
at the end of the function, it invoke another function mousestart().

int mousestart(): In this function we are executing MouseClick() function which get the postion on screen where the mouse is clicked. At the end we are invoking ball() function and startfunctions ().

void ball(): In this function we are trigering the path of the fired bullet and storing the postion of the ball in a two dimensional aray ballpos[][].

Void Startfunctions(): In this function we are getting on which menu user click on the Home Screen and navigating the user to the appropriate page.

int Collide(): in this function we are manipulating on which menu option user has clicked on the home screen page. This function basically takes into account the collision between fired bullet and the menu image.

void playgame(): In this function we are controling the game activity like collision of ball, movement of gun, firing of bullets and calculating high score. We are saving the top 10 high score in the "HighScore.txt" file.

void Cursor(): This function controls the gun movement by the movement of mouse.

int clicklevel(): This function provide interface and logic to select any level from 1-10.According to this function,increasing level basically means increasing speed of the obstacle & fired bullet.

void draw(): This function is used to draw the obstacles and the bullet at different position while playing the game.

void obstacle(): This function is creating obstacles along different randomly determined path (sin, zig-zag, quadratic, linear). It also storing the obstacle position in a two dimensional array named obstaclepos[][].

void sort(): This function is checks if new score made by user is greater than any pre existing top 10 score and storing the new scores data in sorted order in the "HighScore.txt" file

References:

cursor.h: got from TA.

Obstacle:
 http://twistedphysics.typepad.com/cocktail_party_physics/images/2007/05/18/vesta.jpg

start:
http://www.windows2universe.org/asteroids/images/asteroid_lutetia_rosetta_july_2010_sm.jpg

level:
http://images.nationalgeographic.com/wpf/media-live/photos/000/274/cache/asteroids-could-be-exploded_27451_600x450.jpg

exit:
 http://www.solstation.com/stars/eros.jpg

highscore:
 http://www.universetoday.com/wp-content/uploads/2010/02/25143Itokawa-e1267318963787.jpg

credit: http://4.bp.blogspot.com/_Z7hODz8fgEc/TUfper0CYOI/AAAAAAAAARY/m2hxIN70gek/s1600/AsteroidItakawa.jpg

instruction:
http://xtec.es/~rmolins1/solar/imatges/idamnclr.jpg

starwars:
http://www.jigzone.com/p/up/7/FS/30/5ibl.jpg

Background Image :
http://theinconvenientskeptic.com/wp-content/uploads/2011/05/NASA-The-Andromeda-Galaxy-M31-Spyral-Galaxy-1-Q5VNLFJ7C2-1024x768.jpg

FireBall :
http://www.webdesign.org/img_articles/10002/sun6.gif

Next :
http://3.bp.blogspot.com/_fUzorZk31Ss/TUopaZqVmYI/AAAAAAAAIzw/IWK5CRxMDho/s1600/next.gif

explode :
http://4.bp.blogspot.com/_HS-OqmYblqs/TRvDjoQIxHI/AAAAAAAAC00/V2_Mi_IB0Vo/s1600/explode.jpg

Consolidated Project Diary:

4th Oct 2011: First Team Meet
9:15 pm-10:45 pm (cs lab osl), First Team Meet. In this meet we discussed about topic of project. Each team memeber provide some ideas on the project and finally we concluded with the project "STAR WARS". We discussed feasibility of the project and reported TA about the topic.

5th Oct 2011: Second Team Meet
We had a team meet at 8:30 pm 9:30 pm at H2 lounge. We divided the work in three modules and distributed those among teams:

Team1:Mayank & Mrinal   -- mouse movement
Team2:Saquib & Monimoy   -- collision
Team3:Anees,Jalpa & Mukesh   -- obstacles

7th Oct 2011:
Team 1: 4 hours : Read about Ezwindows ,uses of mouseclickcallback function.

8th Oct 2011:
Team 3: 3 hours : Most of the time studied EzWindows and tried to make simple programs using it.

9th Oct 2011:
Team3: 2 hours : Reading and looking in sample programs for ideas of motion of ball.
Team 1: 2 hours : tried making program to give position of mouseclick .
Team 2 : 3 hours : Studied EzWindows and sample programs.

10th Oct 2011:
Team 1 : 2 hours : tried to draw the gun and its movement with click.but not successfull in doing so.

12th Oct 2011:
Team 1 : 3 hours : successfully made the program for motion of gun with click.

15th Oct 2011:
Team 3 : 3 hours : made a sample program to draw and erase an object and moving it to different (x,y) coordinates given from user.

16th Oct 2011:
Team 2 : 3 hours : made a simple program to check collision given centers and radii of objects.

18th Oct 2011: Third Team Meet
8:30 to 11:00 2.5 hours Discussed about project progress. And demoed the sample codes made by teams.
And Typed srs document for stage1 submission. And asked TA about doubt of cursor movement for which he gave us a program returning position of cursor.

Diwali Vacations 21-29 Oct 2011 : Not much of team work and no significant progress in project making.most of the team members were out of stations.

1st Nov 2011:
 We had a team meet in lab session from 8:30 to 10:30. Each team member discussed about the progress of the respective modules along with the complete poject progress.and Team 1 collected all the programs from other teams to study them so that they can be combined.

3rd Nov2011:
Team 1: 3 hour- Searched for the images needed for the project.and studied programs made by other members.
Team2: 3 hours: worked on preparing Welcome screen and function used for navigating to different menus.All functioning was done using mouseclick functions.

5th Nov 2011:
Team 3: 2 hours: worked on completing the movement of obstacles along different path which are generated randomly but couldn't get success in that.
Team1: 3 hours: Added images to the project.

6th Nov 2011:
Team 3: 2 hours: worked on path of obstacles and successfully made the path of obstacles and wrote it in an array.

7th Nov 2011:
Team 1: 4 hours : tried to make different functions run simultaneously,but unsuccessful they were working independently but not simultaneously.

8th Nov 2011:
Team 1 : 3 hours : used timed events to make a function run for some milli seconds and then other for some. Which gave effect of simultaneity in cursor movement and ball motion. But unsuccessful to add mouse click for shooting of ball.
And made that automatical shoot after exit of first ball.
8:30-10:30- We demoed the almost completed project to TA. Each team member run the program and checked the performance. We also discussed for further enhancement.
Idea of using collision feature on main window came.

9th Nov 2011:
Team 2 ,Team 1: 2 hours:
added collision feature on mainwindow .
Meeting was scheduled at 5:00 pm but couldn't happen because of un avalibilty of some of team

members.

10th Nov 2011:
1 hours:Saquib, Mayank, Anees and Mrinal got together to work on click level function and automatic level upgradation while playing game.

11th Nov 2011:
5hours:
Anees,Mukesh,Mrinal,Saquib(2 hours), and Mayank
worked on finalising of project documentation,added collision image,and instruction manual to project.
This Document took 2 hours of this 5 hour duration.

12th Nov 2011:
2hours:
Last team meet submitted hard copy of diaries to TA.and peer review.

Team	Hours	Functions
Team 1	30	playgame.h,sort.h,clickinstructions.h,cursor.h
Team 2	18	collide.h,start.h,startfunctions.h,clicklevel.h
Team 3	19	ball.h,obstcale.h,draw.h

Screenshots: loading window,mainwindo,level window,instructions,credits

Terminal   1100500 _ ▫ ✕ ✕ wser   _ ▫ ✕

File Edit View Terminal Tabs Help

```
110050012@osl-78:~$ cd ezwcs101/Project\ final\ almost
110050012@osl-78:~/ezwcs101/Project final almost$ ls
ball.h            image.cpp~        obstacle.h~
ball.h~           image.o           playgame.h
click.h           images            playgame.h~
clickinstruction.h  leveltrial       Project final almost.tar.gz
clickinstruction.h~  leveltrial.cpp  ref.txt
clicklevel.h      leveltrial.cpp~   ref.txt~
clicklevel.h~     leveltrial.o      sort.h
```

100%   View as Icons ⬍

Star Wars   _ ▫ ✕

Star Wars

Loading Game Please Wait....!!!

Loading....

26 items, Free space: 591.2 GB

110050012 - File Bro... | Terminal | Star Wars

Terminal   1100500 _ ▫ ✕ ✕ wser   _ ▫ ✕

File Edit View Terminal Tabs Help

```
110050012@osl-78:~$ cd ezwcs101/Project\ final\ almost
110050012@osl-78:~/ezwcs101/Project final almost$ ls
ball.h            image.cpp~        obstacle.h~
ball.h~           image.o           playgame.h
click.h           images            playgame.h~
clickinstruction.h   leveltrial      Project final almost.tar.gz
clickinstruction.h~  leveltrial.cpp  ref.txt
clicklevel.h      leveltrial.cpp~   ref.txt~
clicklevel.h~     leveltrial.o      sort.h
```

100%   View as Icons ⬍

Star Wars   _ ▫ ✕

Welcome To The Game Mayank

START   HIGHSCORE   LEVEL   INSTRUCTION   CREDIT   EXIT

STAR WARS

26 items, Free space: 591.2 GB

110050012 - File Bro... | Terminal | Star Wars

Terminal

File Edit View Terminal Tabs Help

```
110050012@osl-78:~$ cd ezwcs101/Project\ final\ almost
110050012@osl-78:~/ezwcs101/Project final almost$ ls
ball.h            image.cpp~        obstacle.h~
ball.h~           image.o           playgame.h
click.h           images            playgame.h~
clickinstruction.h   leveltrial      Project final almost.tar.gz
clickinstruction.h~  leveltrial.cpp  ref.txt
clicklevel.h      leveltrial.cpp~   ref.txt~
clicklevel.h~     leveltrial.o      sort.h
collide.h         maingame          sort.h~
compile           maingame.cpp      SRS2.odt
cursor.h          maingame.cpp~     SRS2.txt
cursor.h~         maingame.o        SRS2.txt~
draw.h            MouseClick.h      startfunctions.h
dra   h~          Mouse.h           startfunctions.h~
```

Star Wars

START   HIGHSCORE   LEVEL   INSTRUCTION   CREDIT   EXIT

Select Level

4 4 4 4

O K   Cancel

Terminal

File Edit View Terminal Tabs Help

```
110050012@osl-78:~$ cd ezwcs101/Project\ final\ almost
110050012@osl-78:~/ezwcs101/Project final almost$ ls
ball.h            image.cpp~        obstacle.h~
ball.h~           image.o           playgame.h
click.h           images            playgame.h~
clickinstruction.h   leveltrial      Project final almost.tar.gz
clickinstruction.h~  leveltrial.cpp  ref.txt
clicklevel.h      leveltrial.cpp~   ref.txt~
clicklevel.h~     leveltrial.o      sort.h
collide.h         maingame          sort.h~
compile           maingame.cpp      SRS2.odt
cursor.h          maingame.cpp~     SRS2.txt
cursor.h~         maingame.o        SRS2.txt~
draw.h            MouseClick.h      startfunctions.h
```

Star Wars

Score = 10 Ballmissed = 0 Level = 0.0

EXIT

110050012 - File Bro...   Terminal   [Save Screenshot]   Save Screenshot   Star Wars

Terminal (top)

```
110050012@osl-78:~$ cd ezwcs101/Project\ final\ almost
110050012@osl-78:~/ezwcs101/Project final almost$ ls
ball.h               image.cpp~           obstacle.h~
ball.h~              image.o              playgame.h
click.h              images               playgame.h~
clickinstruction.h   leveltrial           Project final almost.tar.gz
clickinstruction.h~  leveltrial.cpp       ref.txt
clicklevel.h         leveltrial.cpp~      ref.txt~
clicklevel.h~        leveltrial.o         sort.h
collide.h            maingame             sort.h~
compile              maingame.cpp         SRS2.odt
cursor.h             maingame.cpp~        SRS2.txt
cursor.h~            maingame.o           SRS2.txt~
```

Star Wars — INSTRUCTIONS

Once user logs into the game through command prompt with His/her Name, a welcome popup will appear followed by the Home Screen of the Game.

There will be six Main Menu on the Home Screen

1) START   2) HIGH SCORE   3) LEVEL   4)INSTRUCTION
5) CREDIT   6) EXIT

START: By clicking on **START** Button, the game will get started. Here a GUN will be to shoot the obstacles, generated automatically. User have to control the gun through mouse, bullets will be fired automatically. On the LEFT bottom of the screen **LEVEL** and **SCORE** will be displayed and on RIGHT bottom, **EXIT** button will appear. User can exit at any time by clicking on this.

The level will get tougher after gross of every **50 points**. Once the user **miss three obstacles** game will get over and the highest score will get saved by user name. User can also change any higher level before start playing from the **LEVEL** button on home screen

Next   EXIT

26 items, Free space: 591.2 GB

Star Wars (second screen)

HIGH SCORE: Clicking on this button, a new window will appear containing **top 10 score** and the name of the scorer. The Window will get closed automatically in few seconds.

LEVEL: Using this button, user can select any **level from 1 to 10.**

INSTRUCTION: This page contains all info regarding the game controls and activity.

CREDIT: This menu will display the name of team members who have worked on to develop this game.

EXIT: Using this menu, user can exit from the game.

Next   EXIT

26 items, Free space: 591.2 GB