

CS 101 PROJECT

C++ Quiz

Submitted to:

Prof. D.B.Phatak

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Acknowledgement

This whole journey of “C++ Project” was a great learning experience.

This learning was not only the familiarity of codes but was full with plethora of teamwork, professionalism, leadership, working under time constraints.

The self-evaluation was actually a well-compromised method of marking which had a effect in the markings to a great extent.

The help and support given by our T.A **Mr.Rajendra Kumar Solanki** boosted the progress of our project.

And finally grand accolades to **DR. DEEPAK .B. PHATAK** for organizing such enthusiastic and a wonderful project work!!!

Introduction

Through this project we want to aid students who are learning C++ for the very first time through a Topic-wise Tutorial session by conducting a quiz based on the Basic topics as well as some Advanced topics covered in the CS 101 course.

Important points regarding the Quiz:

- The User will give his choice for the Quiz Type and for the answers using the mouse click.
- The Instructions window in the beginning will give all the information related to the quiz.
- The user can Skip the question or Quit the quiz at any point of time.
- The User will get to answer 10 questions in all.
- Result will be displayed on the Window.

Project Overview

Our Team (**Lab Batch 312**) was divided into 2 teams one consisting 3 and the other 4. . Following are the details of teams and work allocated to them-

TeamA: **Work Allocated – Coding to link the text to be shown on the user screen and the files to created where the Input data will be stored according to their prescribed format.**

Ashwin R : 110010053 **Team Leader**
Ankur Luniya : 110040018
Ashish Savita : 110010028

Team B: **Work Allocated – Creating a Graphics based user interface using the EzWindows and Creating a Question Bank .**

Anurag Meena : 110260013 **TeamLeader**
Ankur Agrawal : 11D260003
Anurag Kumar : 110040073
Archit Laddha : 110040053

Status of Completion

The Project has been completed successfully in an executable condition with a good number of questions in the Question Bank.

Description of Data(input/output)

The following are the various code intercepts written by our Team members for various input and output operations:

Team A (Coding for printing and linking):

The team was assigned the work of coding after group discussion on project.

The main algorithm contains 8 functions and libraries :

```
//Defining Functions
void instruct_window();//function to open the instructions window
void choice_window();//function to open the choices window
void quiz_window();//function opens the main quiz window
void read_q();//reads the questions in the chosen topic from the file and stores it in an array
int check_repeat(int);//to ensure questions don't repeat
void print_q(int);//function prints the question and the options on the window
int ReportMousePosition(const Position&);//takes mouse click of the answer chosen
int ChoicePosition(const Position&);//Takes the mouse click of the choices window
```

Libraries used in our Program:

```
#include <iostream>
#include <unistd.h>
#include <assert.h>
#include <cstring>
#include <ctime>
#include <cmath>
#include <stdio.h>
#include <time.h>
#include <cstdlib>
```

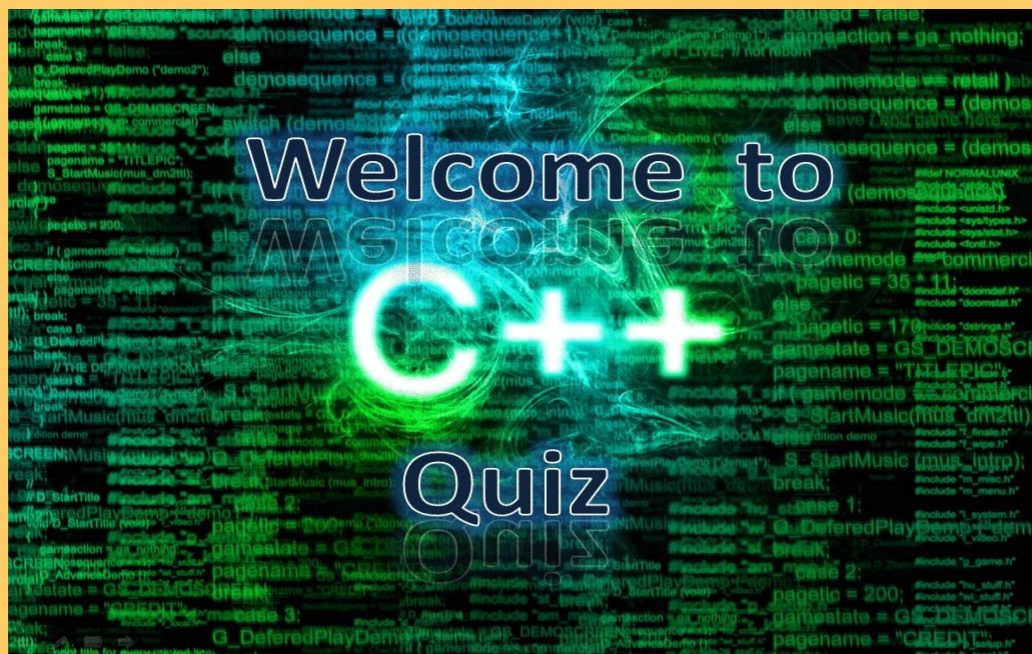
Team B (CREATING GRAPHICS BASED ENVIRONMENT(GUI)):

The team was assigned the work of coding after group discussion on project. The main algorithm include following parts:

- Most importantly ,the Images have to converted into “xpm” format before using in EzWindows. This can be done by giving in the command on the Terminal–“ image.jpeg image.xpm”

A) Appearance of Welcome Screen:

This opens a welcome screen like this:



B) Backgrounds:

```
//Background image
BackBmp.Load ("image_back.xpm");

BackBmp.SetPosition(Position(-1.0, -5.5));

BackBmp.Draw();
```

C) Creating Question and Options Boxes:


```

//Options image
ABmp.Load ("image_a.xpm");

ABmp.SetPosition(Position(1.0, 6.0));

ABmp.Draw();

FinalABmp.Load ("image_final_a.xpm");

InitABmp.Load ("image_init_a.xpm");

InitABmp.SetPosition(Position(3.0, 6.0));

InitABmp.Draw();

```

D) Extra buttons:

```

//Quit image
QuitBmp.Load ("image_quit.xpm");

QuitBmp.SetPosition(Position(2.0, 13.0));

QuitBmp.Draw();

//Skip image

SkipBmp.Load ("image_skip.xpm");

SkipBmp.SetPosition(Position(23.0,
13.0));

SkipBmp.Draw();

```

E) Coding to Enter Text into Boxes:

```

void print_q(int y)
{
    //print the question
    Quiz.RenderText(Position(2.0,3.0),
Position(23.0,5.0),

                    Question[y], Black);

    //print option
    Quiz.RenderText(Position(1,6),
Position(3,6.5),

                    "Option A",Red);

```

```
Quiz.RenderText(Position(1.0,6.5),  
Position(10,8.0),opt_a[y], Black,Green);
```

F)Mouse Position Capturing:

```
int ReportMousePosition(const Position& p)  
{  
    if(ABmp.IsInside(p))  
        {user_ans='A';  
        InitABmp.Erase();  
        FinalABmp.SetPosition(Position(3.0, 6.0));  
        FinalABmp.Draw();  
        status=1;  
        }  
}
```

System Requirements

 Ubuntu (Linux based OS)

Link to download the OS:

<http://www.ubuntu.com/download/ubuntu/download>

 EzWindows package installer

Features

Some of the Features that are available to the User:

- ✓ Option to choose between Quiz Topic.
- ✓ The User will get Different Questions without repetition.
- ✓ The User can Skip the Question if he/she doesn't know the Answer.
- ✓ The User can Quit the program at any point of time.
- ✓ All things are done using mouse click.

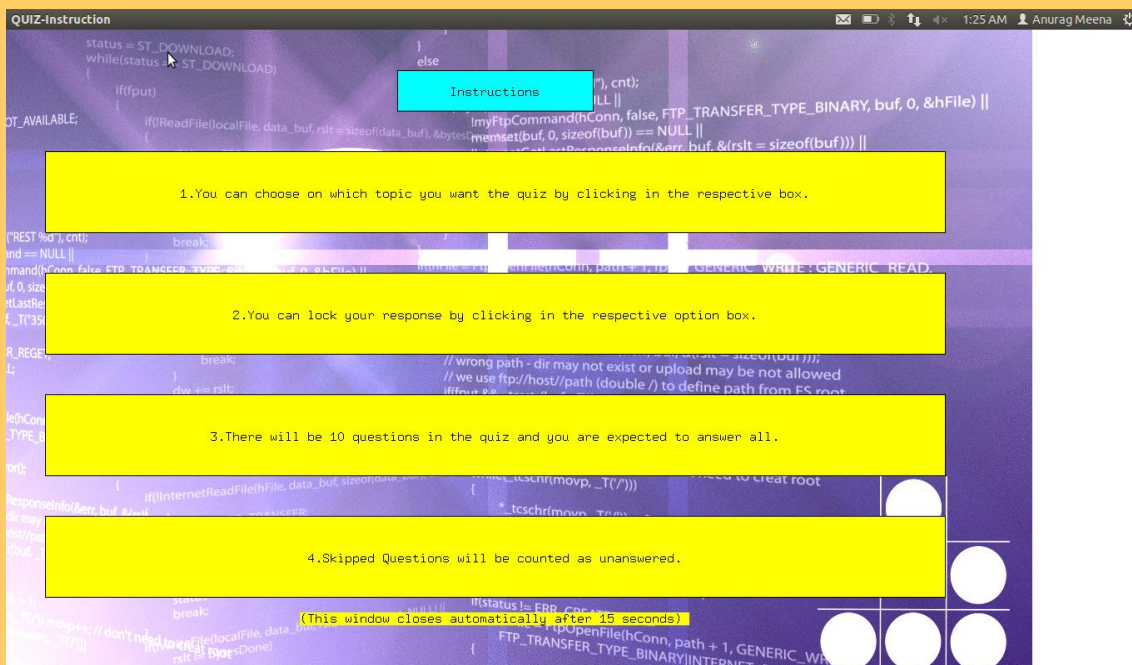
Ideas of Future Work

- ✓ A “Clock” that will help the User to know how much time they take to answer each question or to set a time limit.
- ✓ User can choose the number of questions ,display the result and remarks accordingly.
- ✓ Marking scheme to include negative marks for wrong answers.
- ✓ Increase the number of questions in the question bank
- ✓ More changes can be done according to the needs of the users to come.

Some Screenshots



Instruction Window



Choice Window

QUIZ-Choice

1 3
2 A
3 B
4 C
5 D

CLICK ON YOUR CHOICE

1. BASICS

2. ITERATIVE LOOPS

3. CONDITIONAL

4. FUNCTIONS

5. ARRAYS

6. POINTERS

7. STRINGS

8. FILES

9. LIBRARY FUNCTIONS

10. STRUCTURES

11. OBJECTS AND CLASSES

12. GENERAL QUIZ (INCLUDES ALL THE ABOVE)

```
/* Read the file byte by byte */
len = spointer = 0;
while (len > 0)
{
    len = read(fd, &buf, 1);
    space[spointer] = buf;
    spointer++;
}

close(fd);

for (mpointer = 0; mpointer < 32768; mpointer++)
{
    len = spointer;
    spointer = mpointer;
    for (spointer = 0; spointer < len; spointer++)
    {
        switch(space[spointer])
        {
            /* Increment pointer value
            case 'A':
                memory[mpointer]++;
                break;
            /* Decrement pointer value
            case 'B':
                memory[mpointer]--;
                break;
            /* Increment pointer
            case 'C':
                mpointer++;
                break;
            /* Decrement pointer
            case 'D':
                mpointer--;
                break;
            /* Print current pointer value
            case 'E':
                putchar(memory[mpointer]);
                break;
            /* Read value and store in current pointer
            case 'F':
                memory[mpointer] = getchar();
                break;
            /* Start loop
            case 'G':
                if (memory[mpointer] == 0)
                {
                    /* Find matching 3 or 4
                    spointer++;
                    while (kl > 0 || space[spointer] != 0)
                    {
                        if (space[spointer] == 'A')
                        {
                            /* Go in right direction
                            spointer++;
                        }
                    }
                    break;
                }
                /* End Loop
            case 'H':
                if (memory[mpointer] != 0)
                {
                    /* Find matching 1 or 2
                    spointer--;
                    while (kl > 0 || space[spointer] != 0)
                    {
                        if (space[spointer] == 'A')
                        {
                            /* Go left
                            spointer--;
                        }
                    }
                }
            }
        }
    }
}
```



Question Window

QUIZ

1:24 AM Anurag Meena

Quiz ~ CS 101

1.By default, the standard output device for C++ programs is

Option A ☐

Printer

Option B ☐

Monitor

Option C ☐

Modem

Option D ☐

Disk

QUIT

C++

SKIP





Answer Window


QUIZ


Quiz - CS 101

2. Which of the following adds one string to the end of another?

Option A  `append();`

Option B  `stringadd();`

Option C  `strcat();`

Option D  `stradd();`

Right Answer

OK

QUIT

SKIP

C++

Utilities

The project that we have made uses the interface of the EzWindows library extensively. This is done essentially in order to make the Graphical User Interface of the Project. Apart from this, this project neither uses resources nor interfaces from other predefined systems, nor has any well- defined applications to existing systems. These, however may be established in the future by making suitable modifications to the program.

Individual Contribution

1.Ashwin R,Anurag Meena

Most of the coding and some questions.

2.Ankur Agrawal

The Preparation of SRS documents and questions.

3.Ankur Luniya,Ashish Savita

Most of the questions and their formatting.

4.Archit Laddha,Anurag Kumar

No major contribution.