COURSE PROJECT

DOCUMENTATION

CS101 PROJECT

THE MIND GAME:

RUBIK'S CUBE

TEAM MEMBERS

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1.INTRODUCTION

Since the invention of the rubik's cube It has become famous all around the world.People are trying to make world record by solving the cube faster.

This project helps them to practise the rubik's cube and increase their solving capability virtually .

2. PROBLEM STATEMENT :

1. In this project our main aim is to make people play with a rubik's cube without actually owning a rubik's cube.

2. This project now allows the user to solve the rubik's cube in a computer rather than solving practically.

3. Our team developed this project in such a way to give a 2D view of the Rubik's Cube showing all the 6 faces and allows user to control all the rotations which are needed practically to solve the cube.

3. REQUIREMENTS

3.1 HARDWARE REQUIREMENTS

1.) A LAPTOP OR A DESKTOP

3.2 SOFTWARE REQUIREMENTS

1.) CODE BLOCKS

2.) INIT CANVAS LIBRARY

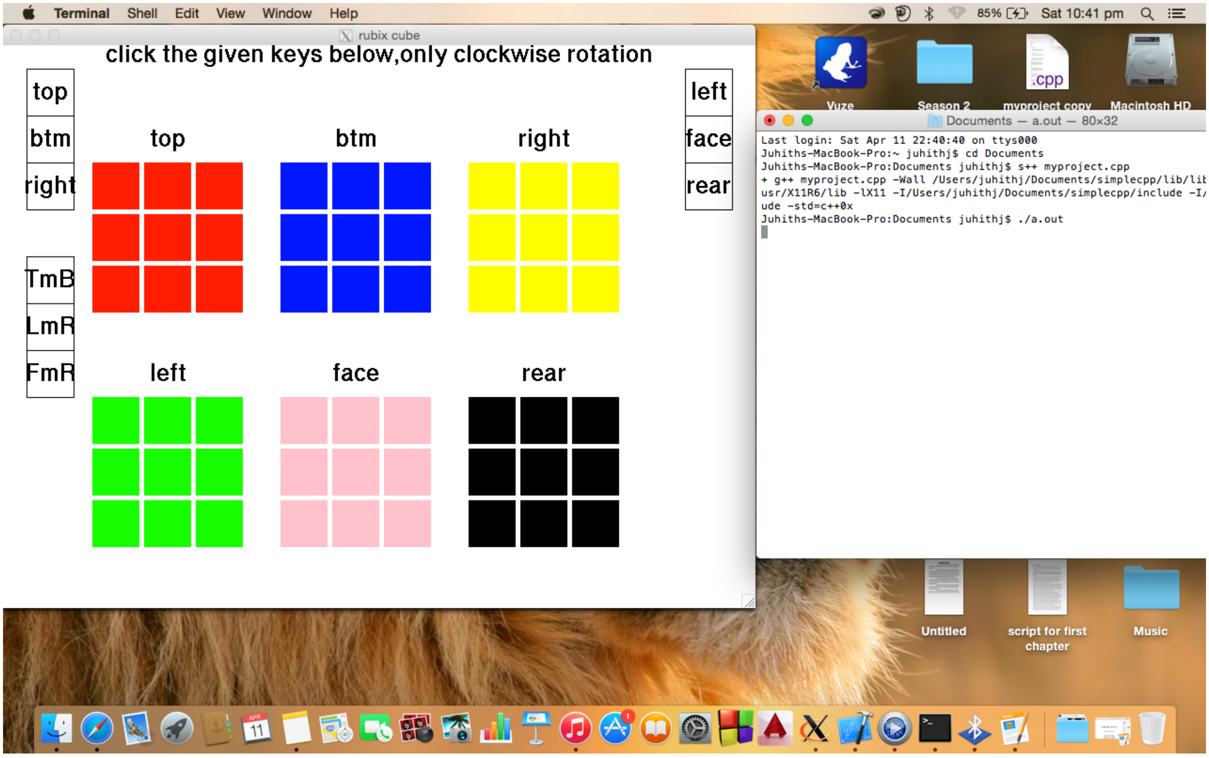
4.) **TESTING STRATEGY AND DATA :**

We designed our Rubiks in such a way that each colour is represented by a number.

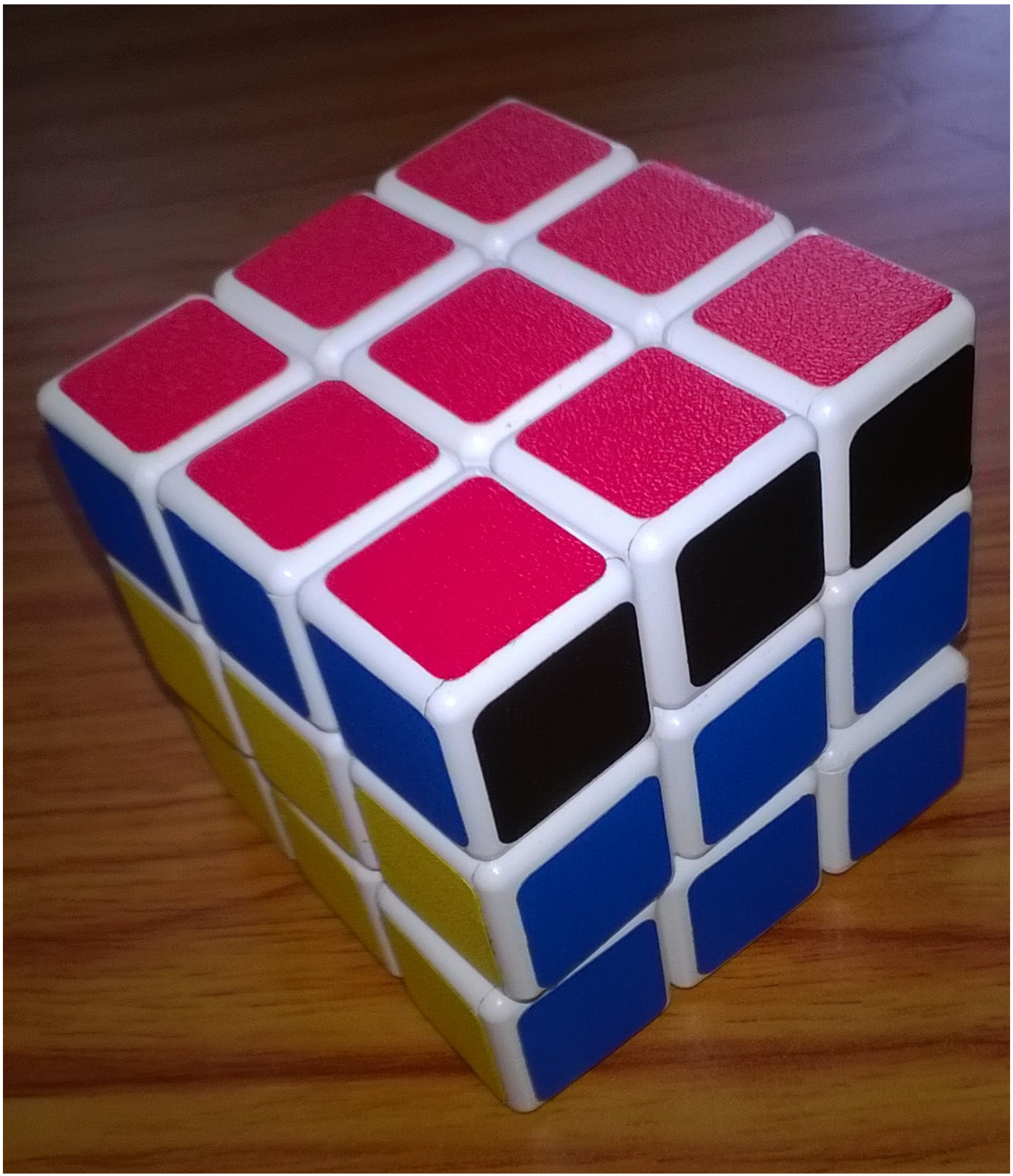
So, after the end of any no. of rotations when we get the corresponding no.s in each face . we should get equal number of numbers over all.

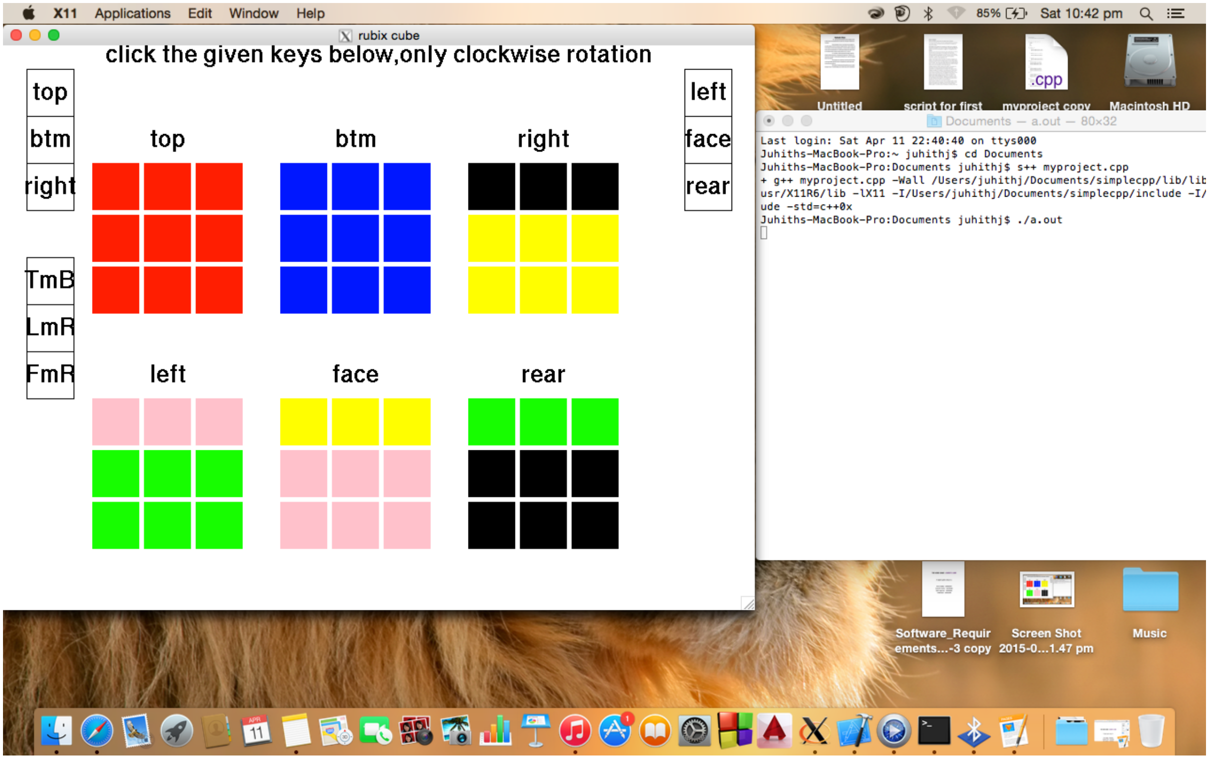
We also checked it with a real Rubik's whether the code was running properly or not.

please note that the colours for the top,front,right….etc faces which are in the practical rubik's cube are different from the colours which we are using



```
Last login: Sat Apr 11 22:40:40 on ttys000
Juhiths-MacBook-Pro:~ juhithj$ cd Documents
Juhiths-MacBook-Pro:Documents juhithj$ s++ myproject.cpp
+ g++ myproject.cpp -Wall /Users/juhithj/Documents/simplecpp/lib/lit
usr/X11R6/lib -lX11 -I/Users/juhithj/Documents/simplecpp/include -I/
ude -std=c++0x
Juhiths-MacBook-Pro:Documents juhithj$ ./a.out
```





```
Last login: Sat Apr 11 22:40:40 on ttys000
Juhiths-MacBook-Pro:~ juhithj$ cd Documents
Juhiths-MacBook-Pro:Documents juhithj$ s++ myproject.cpp
+ g++ myproject.cpp -Wall /Users/juhithj/Documents/simplecpp/lib/lib
usr/X11R6/lib -lX11 -I/Users/juhithj/Documents/simplecpp/include -I/
ude -std=c++0x
Juhiths-MacBook-Pro:Documents juhithj$ ./a.out
```

The above shown screenshot is when the Top face is rotated.

5.) IMPLEMENTATION:

In this project we used simple cpp compiler in code blocks and for the graphics part we used Init Canvas.

Firstly we defined each face of the cube as a 3x3 array and gave each colour a number so that its easy to work with them.

We defined a swap function for interchanging each part of the cube after every rotation

We individually defined each small square in every face to get an easy access to the number it had.

6.) DISCUSSION OF SYSTEMS

6.1) WHAT ARE WORKED AS PER PLAN ?

1) Given the user to see the 2d view of the cube by showing all the faces of the cube.

2) We had allowed the user to rotate all the faces of the cube including the middle part of the cube.

6.2) WHAT ARE ADDED MORE THAN WHAT IS DISCUSSED IN THE SRS?

1) We have added a refresh button in our project which resets the cube into it's original state.

7.) **FUTURE WORK:**

1) This code can be extended to make a 4x4, 5x5 or any NxN rubik's cube by increasing array size and individually giving names to each cube in a face.

2) We can also extend this project into a 3d version by using other higher graphics library.

3) We can also develop this project by showing the user the moves to solve the rubik's cube if he is stuck somewhere in the middle.

8.) **CONCLUSION :**

The overall game is in such a way that the user can get a new feel of solving a Rubik's cube in a Desktop rather than solving practically and also we can extend our code for any NxN Rubik's cube using this Algorithm .

9.) **REFERENCES**

1.) STACK OVERFLOW WEBSTIE

http://stackoverflow.com/

2.) ABHIRAM .G.RANADE ,An introduction to c++ programming.

3.) TUTORIALS POINT WEBSITE

http://www.tutorialspoint.com/cplusplus/

4) PREVIOUS YEAR PROJECTS