Course Project Documentation
CS 101 Project

Home Design Software
TEAM: 500

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1) Introduction

The modern civilisation has come up with an ever increasing number of cities and an even greater number of homes and houses. Thus in most of the houses, aesthetics take a backseat while they are being designed and furnished.
Often people are confused where to place the furniture what size the room shall be etc. Without any proper utility or guidance they end up living in homes which are crammed and poorly furnished.
To solve that problem we decided to make an open-source, interactive software called ‘Home Design Software’ which will help the user to design dream home.

2) Problem Statement

The aim of the project is to create a user friendly application which will help the users create their dream home graphically. We will provide users tools to create rooms of houses and place furniture in the rooms in the way they find fit.
In the end when the user has completed designing the rooms along with the furniture will be displayed in 3D view to the user.
The user can again make changes if he/she wishes so, to the design of the room.

3) Requirements

A. Hardware Requirements

i. Laptop/PC running Windows 8/8.1

B. Software requirements

i. Netbeans 8.0.2(JDK)
ii. OpenGL
iii. CodeBlocks IDE
iv. MySQL

https://youtu.be/fq-pMi3Tqao

4.Implementation

GUI(Graphical user interface)

Defining our project, our project simply encompasses two major aspects. the first one provides the user a platform to edit their own rooms with editing floor textures, as well as providing the user to edit the furniture positions in the room
on their own.

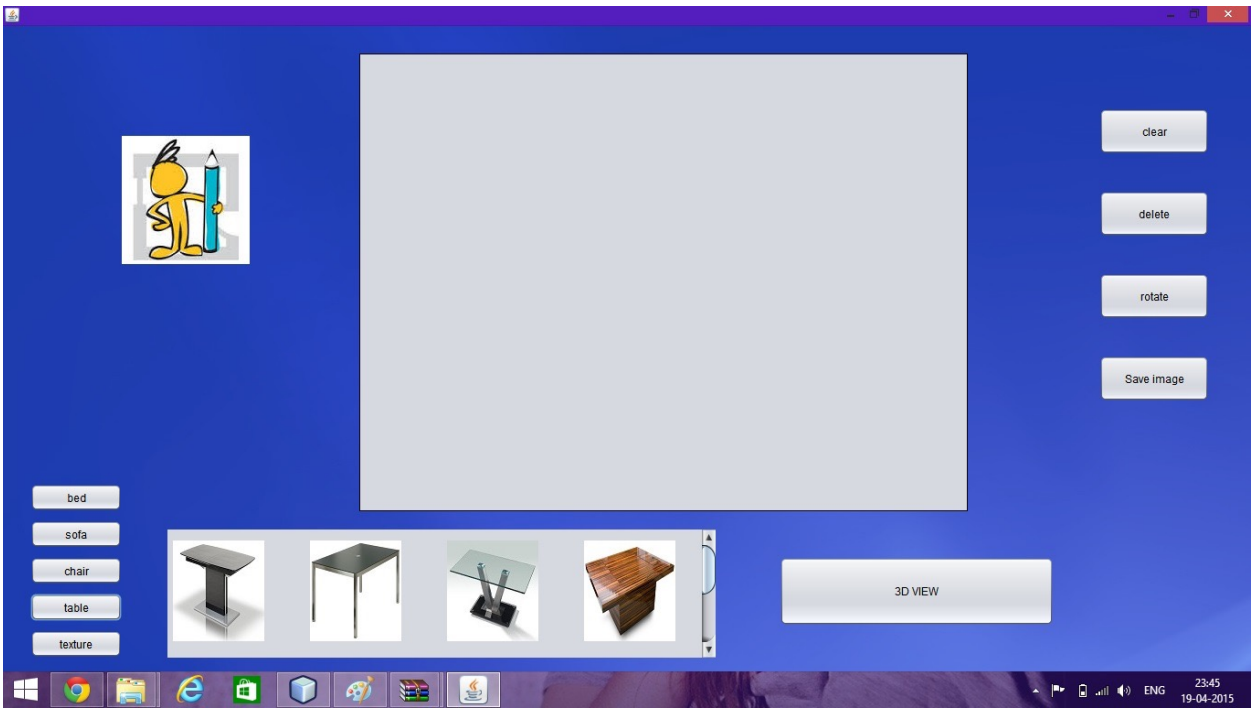
Converting into 3D view

Second aspect of our project is to convert the 2D room plan which the user has prepared into a 3D interactive room plan which will give an overview of the room to the user which is appealing .we have used Open GL in use of C++ interface.

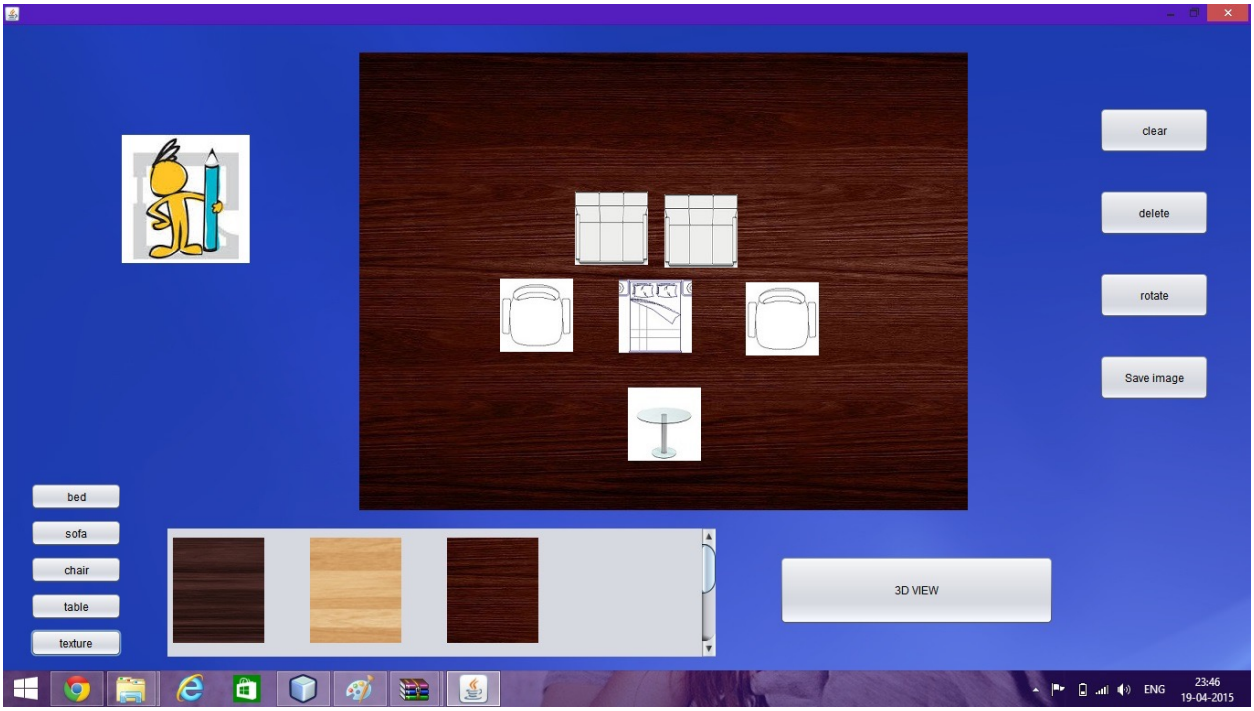
5.Testing strategy and data

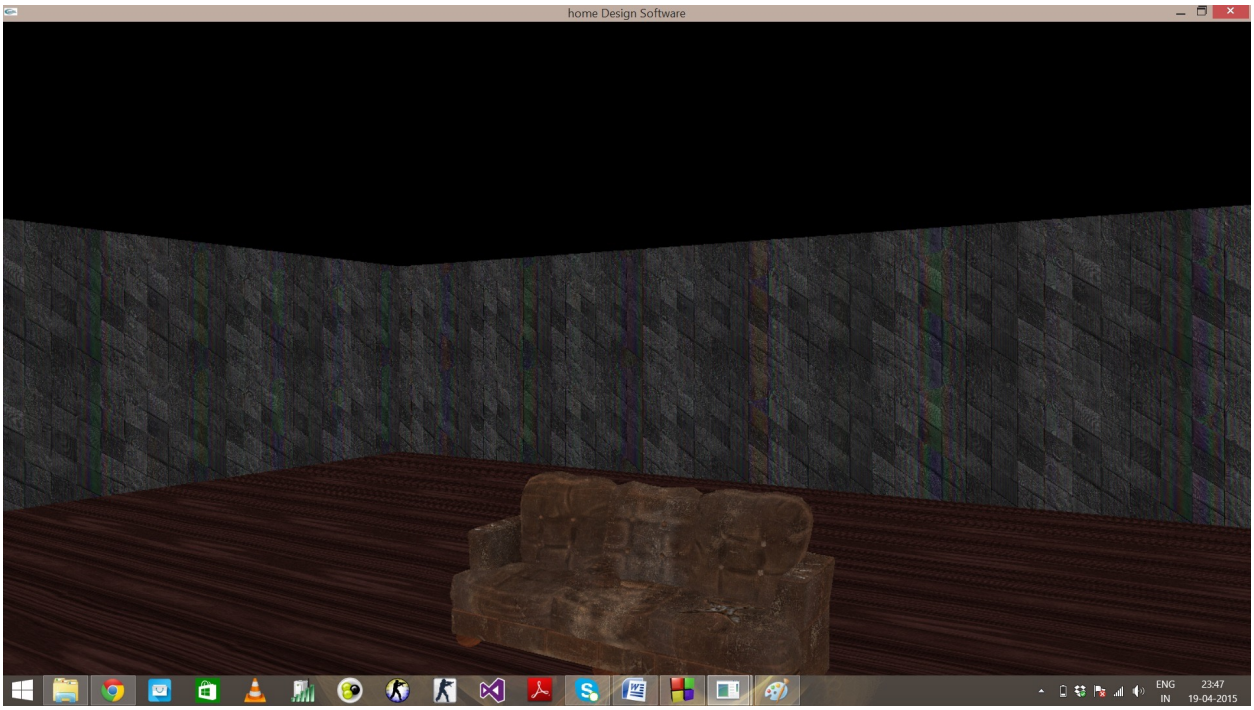
For the first aspect of our project we created a 2D panel in netbeans which was provided by us to the user as a workspace for them to edit. by using buttons and defining functions like rotate, clear,delete and save image
we have also provided several objects under the sections of furnitures like chairs, sofa , bed ,table and also floor textures

This is the first screen which pops up when the code is run.



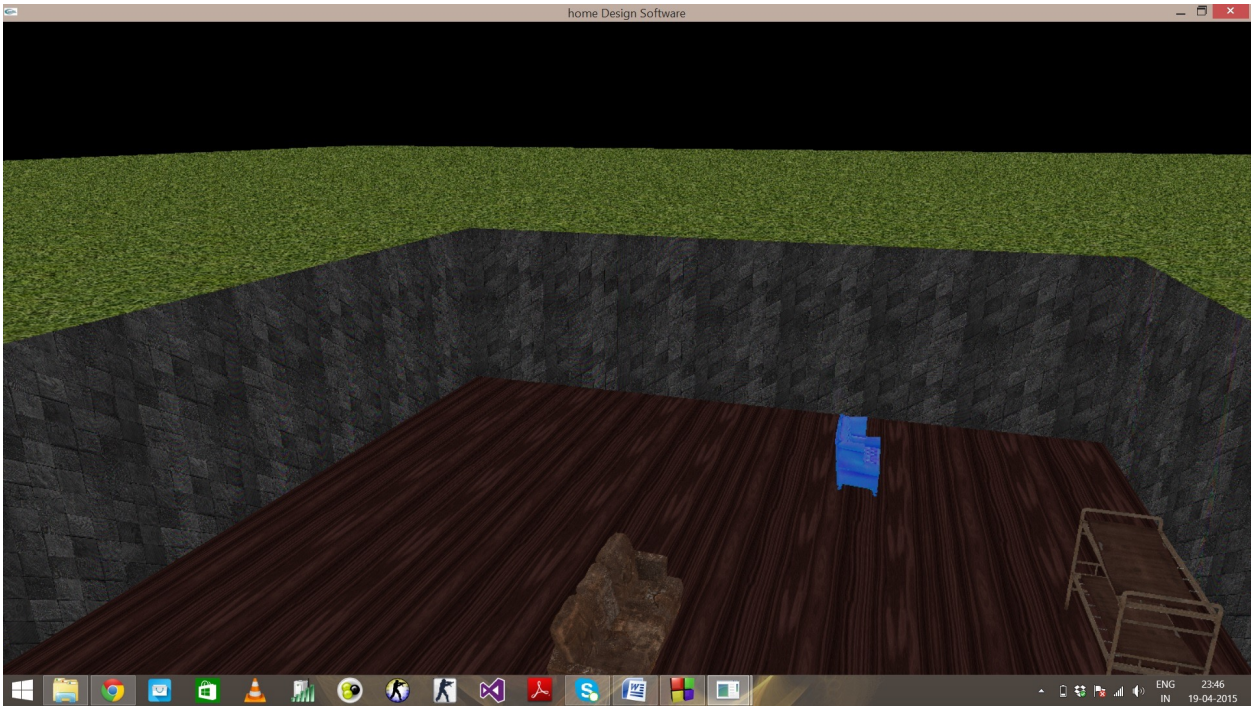
this is the basic workspace of our project.





For the next aspect, we have used opengl with c++ interface. the user when clicks the 3D view button a txt file is generated with first the texture coordinates. in the next

line , we have given int value for the type of furniture to be created then its x, y coordinate.



final 3D interface

The installation setup and the working of our project is given by the video link

https://youtu.be/fq-pMi3Tqao

https://youtu.be/yWgRc9ym8NI

6. Discussion of System:

A) What are worked as per plan?

i. **Making of a 2D interface for designing** : A 2D interface was successfully made giving the relative positions of the furniture according to the user. The user could only not put the walls of the room on the display.

ii. **Displaying the 3D view of the room :** The given room along with its contents could be viewed in 3D. The coordinates by the user is transcripted into text file which acts as an input to the open gl which gives out the 3D view

B) What we added more than discussed in SRS?

For integration we have introduced a text file to act as a mediator between openGL and Netbeans where the coordinates will be written in the text file itself. We have

also added a feature namely floor textures which we did not introduce in the SRS.

(C) Changes made in plan:

As introduced in the SRS we were successful in database connectivity but the server did not quite work well with the netbeans version. So as proposed in the SRS we were not able to provide an account feature in the project. But we are providing the code in the project for the domain of future work.

7) **Future Work**

1. The software can be extended to design offices, museums, bungalows etc.
2. The interface could be extended to support circular walls, designer walls, false ceilings and other features.
3. Electronic items such as TV’s, fans, lights could be extended into our database.
4. The 3D view could be made more interactive by drag and rotate features to view from any angle.

8) Conclusion

The project gives us the desired results which we proposed at the beginning, that is, to help the user design his dream home.
The interface in 2D gives the user a fair chance to create his choice of 2D room and the 3D view is only helps users visualize better their designs.

9) References

- Our Inspiration
  http://www.roomsketcher.com/
- Java interface from netbeans and other sources
  https://www.youtube.com/watch?v=3u1fu6f8Hto
  http://www.tutorialspoint.com/
  https://netbeans.org/
- 3D interface