A Mid-Term Progress Report

On

Automated Building Drawings

Submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology
(Computer Science and Engineering)

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CHAPTER 1

INTRODUCTION

1.1 Overview

Automated Building Drawing is a project for creating two-dimensional drawings (front-view, top-view, side-view etc.) from a three-dimensional model.
The main purpose or objective of the project is to make it usable even by the layman. The main target users are the Civil Engineers who want their plans to be printed on the sheets. As of now, they have to create the drawings separately with different views in any CAD software and the 3D model separately. So to automate converting a particular three-dimensional model to the print-ready drawings (with different views), this project will be beneficial. The interface should be easy to use and pretty intuitive. Because the interface is a thing that makes user experience better and to make the user use it.
The Drawing module allows you to put your 3D work on paper. That is, to put views of your models in a 2D window and to insert that window in a drawing, for example a sheet with a border, a title and your logo and finally print that sheet. The drawing may consist of different views like top, front, side and orthographic views.

1.2 Objectives

- To put views of your models in a 2D window and to insert that window in a drawing,.
- Automatically creates orthographic views of an object.

CHAPTER 2

SYSTEM REQUIREMENTS

2.1 System Requirements

2.1.1 Hardware Requirements

- Operating System: ubuntu 12.04 or windows 7
- Processor Speed: 512KHz or more
- RAM: Minimum 256MB

2.1.2 Software Requirements

- Software: Xampp or lampp(in case of ubuntu)
- Programming Language: C++, Python, Qt
- Database: MySQL or some Object-oriented database

CHAPTER 3

SOFTWARE REQUIREMENT ANALYSIS

3.1 Software Requirement Analysis

A Software Requirements Analysis for a software system is a complete description of the behaviour of a system to be developed. It includes a set of use cases that describe all the interactions the users will have with the software. In addition to use cases, the SRS also contains non-functional requirements. Non-functional requirements are requirements which impose constraints on the design or implementation.

- **General Description**: The Drawing module allows you to put your 3D work on paper. That is, to put views of your models in a 2D window and to insert that window in a drawing, for example a sheet with a border, a title and your logo and finally print that sheet. The drawing may consist of different views like top, front, side and orthographic views. It is developed using FreeCad, Qt and C++.

- **Users of the System**: The main target users are the Civil Engineers who want their plans to be printed on the sheets. As of now, they have to create the drawings separately with different views in any CAD software and the 3D model separately. So to automate converting a particular three-dimensional model to the print-ready drawings (with different views), this project will be beneficial. So to decrease the efforts, time and cost, it would be really beneficial.

3.1.1 Functional Requiremets

- **Specific Requirements**: This phase covers the whole requirements for the system. After understanding the system we need the input data to the system then we watch the output and determine whether the output from the system is according to our requirements or not. So what we have to input and then what well get as output is given in this phase. This phase also describe the software and non-function requirements of the system.

- **Input Requirements of the System**

  1. Three Dimensional Model.
  2. Dimensions Of Different Views.

3. Scaling Parameters.
4. Name Of Particular Object.

- **Output Requirements of the System**

1. 2Dimensional Model.
2. Generation Of Front View.
3. Generation Of Top View.
4. Generation Of Side View.

- **Special User Requirements**

1. Exporting the 2D model in pdf or svg format.

- **Software Requirements**

1. Programming language: C++
2. Framework: Qt
3. Documentation: Doxygen 1.8.3
4. Text Editor: Gedit, Notepad++, Sublime
5. Operating System: Ubuntu 12.04 or up
6. Web Server: Apache 2.4

3.1.2 Non functional requirements

1. Scalability: System should be able to handle a number of users. For e.g., handling around hundred users at the same time.
2. Usability: Simple user interfaces that a layman can understand.
3. Speed: Speed of the system should be responsive i.e. Response to a particular action should be available in short period of time.

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