A Project Report on

Electronic Circuit Simulation Software

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in

Computer Engineering

by

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Abstract

A virtual prototyping system for electronic devices, which incorporate visualization, that makes a combination of user interaction with photo-realistic 3D models. It basically helps to link product development with a modelling environment. Also, it creates a huge amount of increase in product reliability, quality and fulfillment of user requirements.

Contents

Chapter 1

Introduction

Simulation is the imitation of a real environment. It is software program that allows the user to observe an operation virtually, without actually performing that operation. Being free from the disasters that take place during training sessions with circuits/electronic devices, a simulation software looks upon all physical limitations

1.1 Objectives

- A 3D visualized simulation of electronic circuits
- Interactive, vivid and intuitive
- Easy understanding of the basic theory of circuits

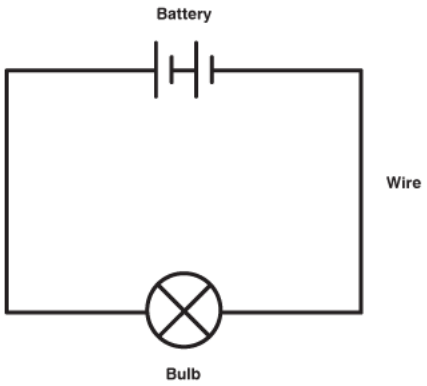


Fig 1.1 A basic electronic circuit

Chapter 2

Literature Review

Chapter 3

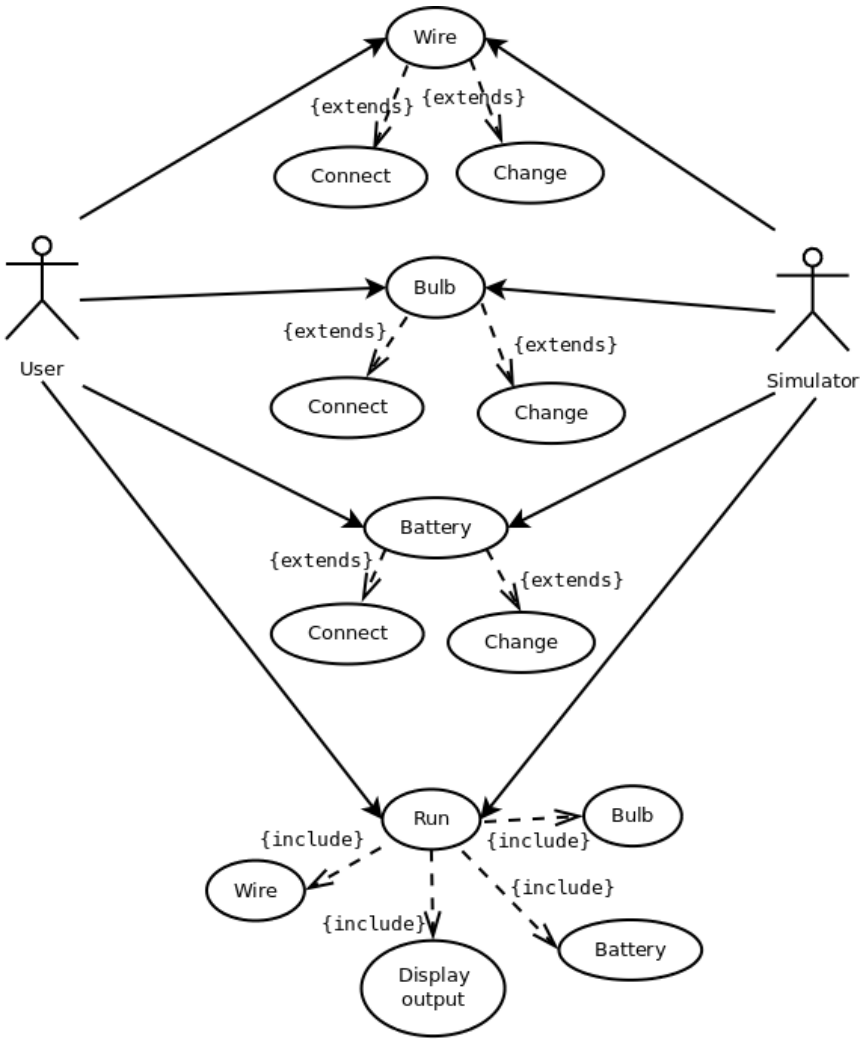
3.1 Problem definition

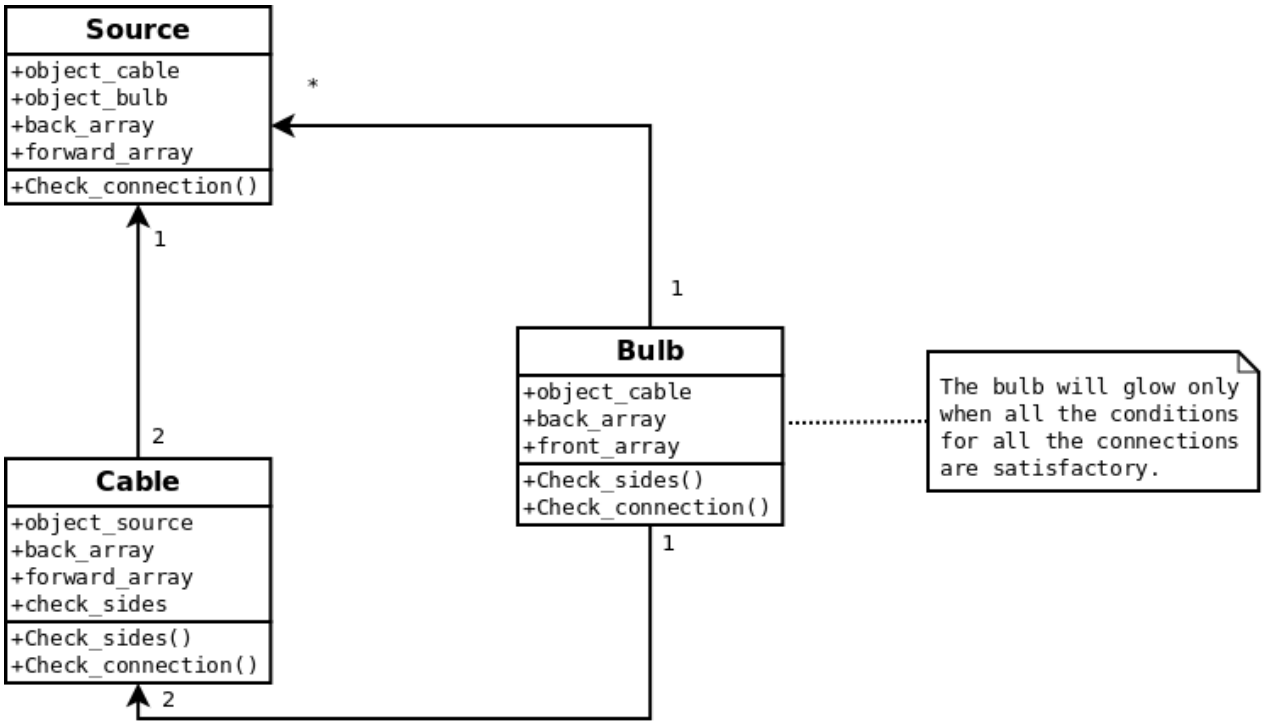
To develop a 3D visualized simulation of electronic circuits that is interactive, vivid and intuitive, so that students easily understand the basic theory of circuits.

Chapter 4

UML Diagrams

USE CASE DIAGRAM




Source
+object_cable
+object_bulb
+back_array
+forward_array
+Check_connection()
*
1
1
2
Bulb
+object_cable
+back_array
+front_array
+Check_sides()
+Check_connection()
1
The bulb will glow only when all the conditions for all the connections are satisfactory.
Cable
+object_source
+back_array
+forward_array
+check_sides
+Check_sides()
+Check_connection()
2

Chapter 5

Conclusions and Future Scope

Simulation is going to be the innovation of the future, due to it's ease of functioning. Also, due to overcoming physical limitations that are possible in a real environment. So, developing a circuit simulation can be really effective especially for educational purposes, for better understanding of concepts and ideas, also implementation of the same.