Indian Institute of Information Technology,
Allahabad

SOFTWARE REQUIREMENT SPECIFICATION

CLIMATRON

ROOM CLIMATE CONTROLLER EXPERT SYSTEM SHELL

Declaration by the Candidates

We, hereby declare that the project titled *CLIMATRON* is a record of bonafide project work carried out by us under the guidance of Professor Anupam Agarwal in partial fulfillment of the 5th semester Project work(expert system shell) for the B.Tech (IT) Course in Indian Institute of Information Technology, Allahabad.

Sachin Agarwal – IIT2014501
Saurabh Tanwar – IIT2014140
D. Rajeswar Rao – IIT2014055

LIST OF CONTENTS

1.0. Introduction

1.1. Purpose

The purpose of this document is to present a detailed description of the project titled “CLIMATRON”. It will explain the purpose and features of the expert system, the interfaces of the expert system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system.

1.2. Scope of Project

The expert system that we intend to develop simulates a room environment where every occupants’ needs are tended to as every occupant has specific preferences of temperature and humidity preferences .It takes every occupants’ preferences into consideration and maintains a suitable temperature .

This results in an expert system shell which takes as inputs indoor temperature , outdoor temperature , occupant preferences of temperature and humidity and displays the best indoor temperature/humidity and explains the means by which the change is being achieved.

1.3. Glossary

Term	Definition
MEDIAN	Middlemost data in a dataset
MEAN	Average value in a dataset
CURRENT TEMPERATURE	Current temperature maintained inside premises
CURRENT HUMIDITY	Current humidity maintained inside premises
NEW TEMPERATURE	Calculated temperature to be maintained inside premises
NEW HUMIDITY	Calculated humidity to be maintained inside premises
OUTDOOR TEMPERATURE	Temperature outside room premises
INTERFACE	Graphical interface to make interaction with the shell easier
ACTIVITY DIAGRAM	flow chart to show flow from one activity to another

1.4. References

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.* IEEE Computer Society, 1998.

1.5. Overview of Document

The next chapter, the Overall Description section, of this document gives an overview of the functionality of the project. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

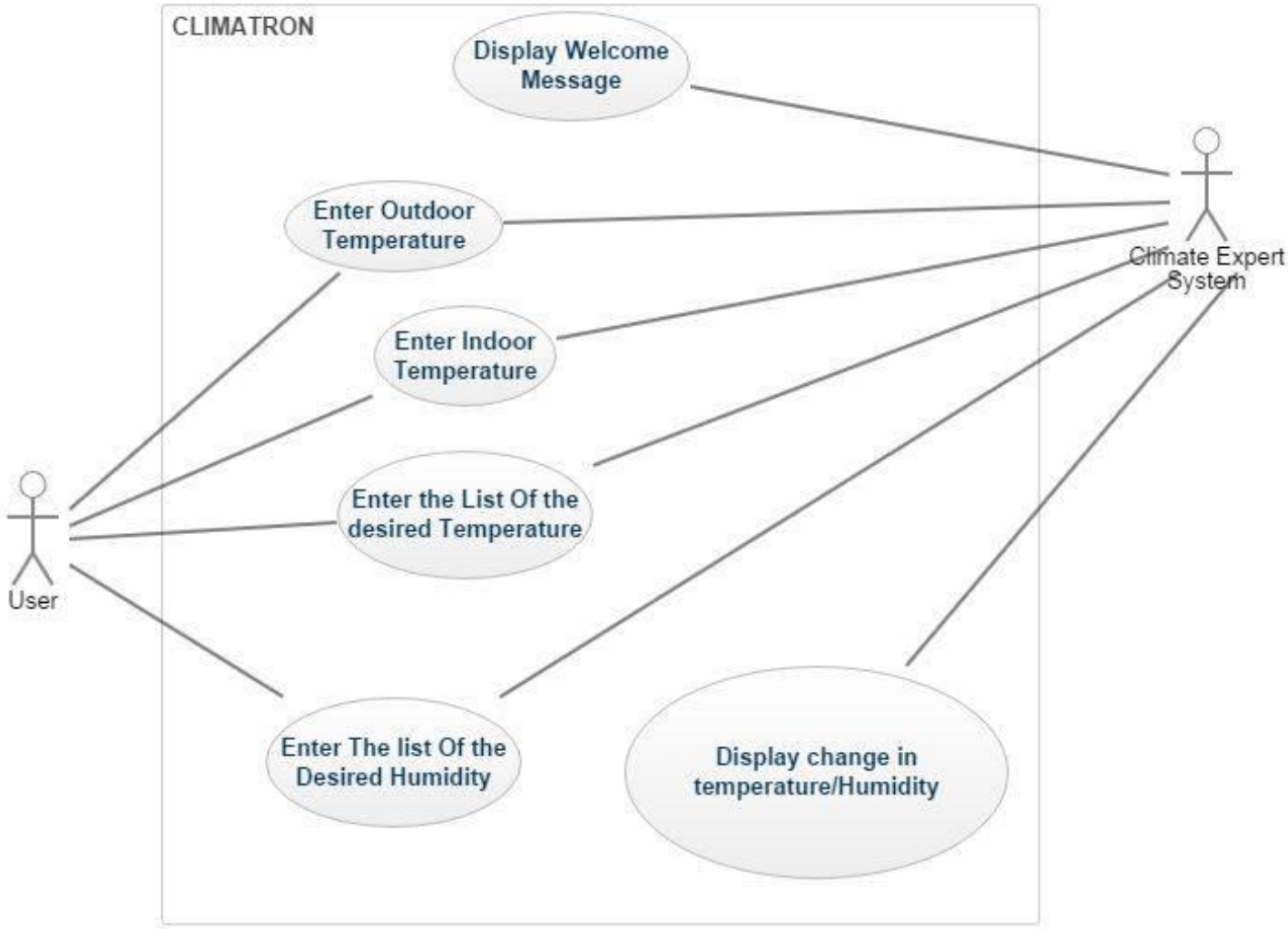
The third chapter, Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the project.

Both sections of the document describe the same project in its entirety, but are intended for different audiences and thus use different language.

2.0 Overall Description

2.1 Functional Requirements Specification

Use Cases



2.2 User Characteristics

The user of the expert system shell is an occupant of the room who is expected to be literate enough to enter desired temperature or humidity (within bearing capacity of other occupants) using a graphical user interface .
The Expert system shell is expected to return a temperature / humidity based on a set of rules and facts satisfactory to majority of people and explain the measures which are being taken to achieve the aforementioned temperature/humidity.

2.3 Non-Functional Requirements

The expert system shell developed here assumes SWI Prolog is installed and the shell is developed in Prolog.

The User Interface is a simple GUI with instructions displayed on the screen for occupants to select from and enter their choice accordingly. The Output to a response / request for change in humidity / temperature is displayed through an alert to the screen .

3.0. Requirements Specification

3.1 Activity diagrams