**Chapter 3: Design**

# Introduction to design

The third stage of software development that can be considered as a bridge between the analysis of a software requirement and implementation is known as design. This stage helps transform the gathered system requirement into suitable logical form with an intent to help the programmers in coding and implementation. This is one of the crucial step of software development that usually answers the **“How?”** aspects of software development. (i.e. how the system should look like, how it should perform etc.) Various diagrammatic models are created using different tools so as to answer the above questions.

The importance of this step on my project can be highlighted from the following points.

* It clarifies the ways and paths to be taken during the coding and implementation of project Ilam Tea Garden.
* Prototyping used in this process will allow the local people of my place to visualize what the system is going to look and function like.
* It makes uses of the different classes and objects generated during analysis and helps to create different diagrams which eventually helps to ease the programmers task.

For project Ilam Tea Garden, I will be designing 4 different models which are listed below.

* Structural model
* Behavior Model
* Database Modelling
* Prototyping

## **Structural Model**

Models that shows how different components, (usually objects and classes) and their relationships are organized in a system is known as structural modelling. Structural model diagrams reflect the static relationship of the different components in a system. Below are different structural model diagrams.

## Class Diagram (Final)

This class diagram makes use of relationships of objects at a greater depth and is more informative than an initial class diagram shown in the analysis stage. T

he final class diagram for project Ilam Tea Garden is given below.

## Data Flow Diagram

The diagram that represents the flow of data within a system in an informative manner is known as Data Flow Diagram (**DFD).** It is a traditional approach to structural modelling which can be manual, automated as well as both at a time. A neat, clear and well-designed DFD can give out a lot of information and observers can clearly understand the scope and boundaries of the system.

The Data Flow Diagram for my project is shown below.