# 6.0 IMPLEMENTATION PLANNING

The purpose of the implementation phase of software development is to translate the software design into source code. Each component of the design is implemented as a program module. The end-product of this phase is a set of program modules created individually.

## 6.1 IMPLEMENTATION ENVIRONMENT

The project is developed or more correctly coded in a multi user environment. It is a web portal that manipulates the information online and hence can be accessed by multiple users at the same time in a multi user system. The system is developed in a way to show dynamically different content based on the specific input provided by the user or the user specific interaction to the system.

Also, the system developed in PHP is GUI based web portal and the input, output as well as interfaces are GUI based and are developed in a user friendly manner. Thus, all the development is centered to the ease of use with respect to the user and the administrator of the portal.

## 6.2 PROGRAMS/MODULES SPECIFICATION

The program modules are as described below:

➢ Login Module

   The Login module is available for the login of the client and WAF admin and on authentication of the login credentials, the user specific information is displayed by the portal.

➢ Client Details module

   This module mainly deals with the storage and manipulation of the client's details as well as the availability of a particular core rule set configuration based on the vulnerabilities reports satisfaction of the user or the client.

- ➢ Details updating module

  This module includes the addition, updating and deletion of blacklisting Machine IPs and other relevant updates regarding the WAF signature development procedure, information about a particular company and log records regarding the daily scanning reports & attacks reports exclusively by WAF admin.

- ➢ Clients analysis module

  This module includes the online analysis of the Clients by an attacks reports to know the clients satisfying the WAF signature specific criteria and knowing the clients interested in a particular Custom Rule set and blacklist any machine IPs.

## 6.3 SECURITY FEATURES

I have implemented the security of the portal in the form of user authentication and the authorization based on the type of user to access a particular data or perform a particular task.

Here, there are three types of user who can access the system.

- ➢ WAF admin

  This is the user who acts as the administrator of the portal and is responsible for handling and manipulating the overall information on the portal. The WAF admin is also responsible for the management of client login activation and therefore adds to the security.

- ➢ Client

  The client user has to be first activated by the WAF admin to be allowed to login and then only he/she can login by providing valid userid and password.

## 6.4 CODING STANDARDS

The coding standards are developed specific to a particular organization that is best suited and depending on the type of products developed.

The coding standards developed for this project are:

1. Mod security spider labs core rules no implemented.
2. No use of Goto Statements.
3. The PHP functions should not be of more than 15 source lines and should be easy to understand to a new unfamiliar person.
4. Minimize the use of session variables.
5. The code should be developed in a way that is not too difficult to understand.
6. The variable names should denote the functional context of its use as far as possible.
7. Use of variables in a limited manner.
8. No use of the same identifier to denote multiple purposes.
9. The code should be well documented.
10. The code should be commented to help a new developer understand the flow of implementation.
11. The code should be documented in such a manner that a new developer is able to make appropriate changes if required in future.