CHAPTER – 7

IMPLEMENTATION & TESTING
7.1 Implementation of SUID

Implementing SUID system is very big task from the eye of government also because this system is not involving only government but also include citizens in it.

Now from the basic level we can divide whole implementation of SUID in following steps.

After complete development of SUID system to implement government have to do following things.

- First and very basic task for the government is to constitute rules and administrative structure for SUID system.

- Because this system involves government and citizens both in it and we must have all rules. What step we should take when something happen? We need to decide everything from the root level.

- After constitution of rules and administrative structure next step is to appoint coordinators from educational institutions and coordinators from government offices like “Jan Seva Kendra in Gujarat”.

- Next step to aware them with SUID system. Give them a complete training and make them aware with rules and regulations of SUID. (Specially aware for steps to be taken against any corruption or malpractices found or any other wrong things which is considered as out of rules and regulations)
- Coordinator at educational institutions will work same like admin but he does not any rights to modify or delete any record.

- Next step is to provide resources at every town and village’s “Jan Seva Kendra” and at educational institutions which is approved by government.

This resource include

- 1 computer with good configuration
- 1 finger print scanner
- 1 web camera with high megapixel.

- As we have created our system as web application. So we do not require any kind of installation for SUID system in computers government provided. Except installation of drivers for web camera and of software of finger print scanner.

- As we know that this system is centralized so government has to implement a very good server at every state level and if possible at every district level for storage of data.

- For every server at district level or state level there should be one dedicated DBA for maintaining data properly.
Following the implementation of resources and manpower at every town and village and educational institutions, the next step is to register students and create a SUID for all students from 1st standard to Doctorate level.

For successful registration, we need to arrange awareness seminars and workshops in all educational institutions and at every town and village level. If people understand the benefits of this system, they will support.

Now, we are going to see how to register any student when he wants his SUID from the system.

We will see each implementation step by step.
First of all we need to start our system by providing its appropriate web address for example. Say **www.suid.gov.in** and following screen will appear in front of us.

![Figure 7.1 Main Screen of SUID](image)
- Second step is to login ourselves.

![Login Screen of SUID with Admin Login](image)

Figure 7.2 Login Screen of SUID with Admin Login
- Our next step is to enter details of student by clicking on Create New SUID.

7.3 admin screen after login as admin
- After clicking on “Create New SUID” we will get following screen.

Figure 7.4 Student Personal Information Entry screen
- Following screen is filled data of student’s personal information.

Figure 7.5 Student Personal Information Entry screen
- Following screen is student’s educational information data entry.

![Student Educational Information Entry screen](image.png)

Figure 7.6 Student Educational Information Entry screen
- Next step is to capture photograph and scan finger print of student.

Figure 7.7 Photograph capture and Finger print scan
Figure 7.8 Photograph captured and Finger print scanned and SUID Created
- Government can implement this system at initial level by providing it in intranet network like GSWAN of Gujarat government.

- Following figure shows the GSWAN network in Gujarat.

![GSWAN network in Gujarat](image)

**Figure 7.9** GSWAN network
7.2 Testing of SUID system

Testing of any software is very crucial task without testing we can't implement even a desktop application and our system is directly effective to public and citizens both so we have to test it by every aspect.

STLC (Software Testing Life Cycle) is an integral component of SDLC (Software Development Life Cycle). Gone are the times when any software was made on the basis of its requirements and the moment it used to get completed by the development team, it got released to the customer. But now, **Testing has become a distinct phenomenon during and after the development of software. No software is released to the customer without a comprehensive testing by QC or Testing team in the organization.** The Scope and Methodology may vary from product to product, customer to customer, and organization to organization. There are certain aspects of Software Testing Life Cycle. To name top few among them, I would like to list twelve essential steps of Software Testing Life Cycle.

The Steps are to be followed from the start of Testing of software to the end of the testing as follows:

1- Before the dynamic testing, there is a static testing. Static testing includes review of documents required for the software development. This includes following activities:

(a) All the documents related to customer requirements and business rules that are required for software design and development should be handed over to QA. These documents should be complete and dually signed by client and representative of the company (usually Project Manager).

(b) QA reviews these documents. The reviewing of documents includes comprehensive and thorough study of the documents. If any discrepancy is found then it should be noted and raised in the review meeting with the Development team.

(c) After this there should be a formal meeting between the QA and development team regarding these documents, the agenda of this meeting mainly includes what is missing in the document, QA queries to be answered by Development/Project Team and/or clarification required for any confusions.
2- After the Software development or build of a module, QA starts dynamic testing. If during the development the requirement has been changed on customer demand or due to any other reason, then that should be documented and a copy of this revised document is given to the QA and also discussed as explained in point 1 above.

3- Development and testing environment should be made clear to the QA by the Development team. It include the following activities:
   (a) Server to hit for Testing
   (b) Installation of latest build on the test server.
   (c) Modules/Screens to test.
   (d) Test duration as decided by test manager and project manager mutually based on scope of work and team strength.
   (e) Demo of the software on test server by development team to the QC members.

4- After this Test cases and test scenarios are prepared and then the Test execution by QC.

5- A comprehensive Report of Bugs is prepared by the Testers and a review/verification by QC/QA/Testing Head takes place. Before handing over this report to Development Team there is a thorough review of Bugs List by Test Manager and in case of any clarification required on a bug submitted, the Testing Head discusses the bugs with the assigned tester.

6- Release of bug report by QC Team to Development Team.

7- Discussion/simulation of bugs by QC with development team if development team requires and time required for fixing the bugs should be made clear by Dev team at this stage.

8- Feedback from Development team on reported bugs with the stipulated time frame required to fix all bugs.

9- Any changes in the software being made in respect to fix these bugs should be made clear to the QA team by the Development team.

10- Testing team then Retests or verifies the bugs fixed by the development team.
11- Submitting the retesting bug report to the Test manager and after this the step 5 to step 10 are followed until the product has reached a stage where it can be released to customer.

12- Criteria for ending the testing should be defined by management or Test Manager Like when all major bugs are reported and fixed. Major bugs mean the bugs that affect the Business of the Client.
Figure 7.10 STLC Lifecycle
We can divide our testing at various faces.

a. Coding level Testing  
b. Beta Implementation Testing

a. Coding level Testing

Basic testing of any software is done at coding level.

b. Beta Implementation Testing

To test SUID system I have thought to implement it for schools under Municipal Corporation in any city or town.

We can test SUID system by going through following steps

1. First implement in any 10 primary municipal schools that has maximum students.

2. Next step is to register that entire student with our system.

3. How to register in our system is explained in fourth chapter.

4. At last give reports and outcomes of this students to municipal corporation so that corporation can take appropriate steps to improve education and services to students.