

# SOFTWARE ENGINEERING

## UNIT 3 HANDS ON

**Team Number : 14**

3. Evaluate your project according to the measures and metrics in "Proceeding as planned" and "Technical quality". Your team is also expected to evaluate and document the quality of the project according to FLURPS+.

**Shriya Harish, PES2UG20CS463**

**Advait Shet, PES2UG20CS490**

Proceeding as planned

Measures	Metrics
Effort Expenditure	Efforts put by our team on their four individual functionalities is as follows, From cocomo model for semi detached projects $\text{Effort} = a * (\text{KLOC})^b$ $= 3 \text{ person months}$
Estimated Productivity	$\text{KLOC} = 1$ $\text{Effort} = 3 \text{ person months}$ $\text{Productivity} = \text{KLOC} / \text{Effort} = 1/3$ $= 33\%$

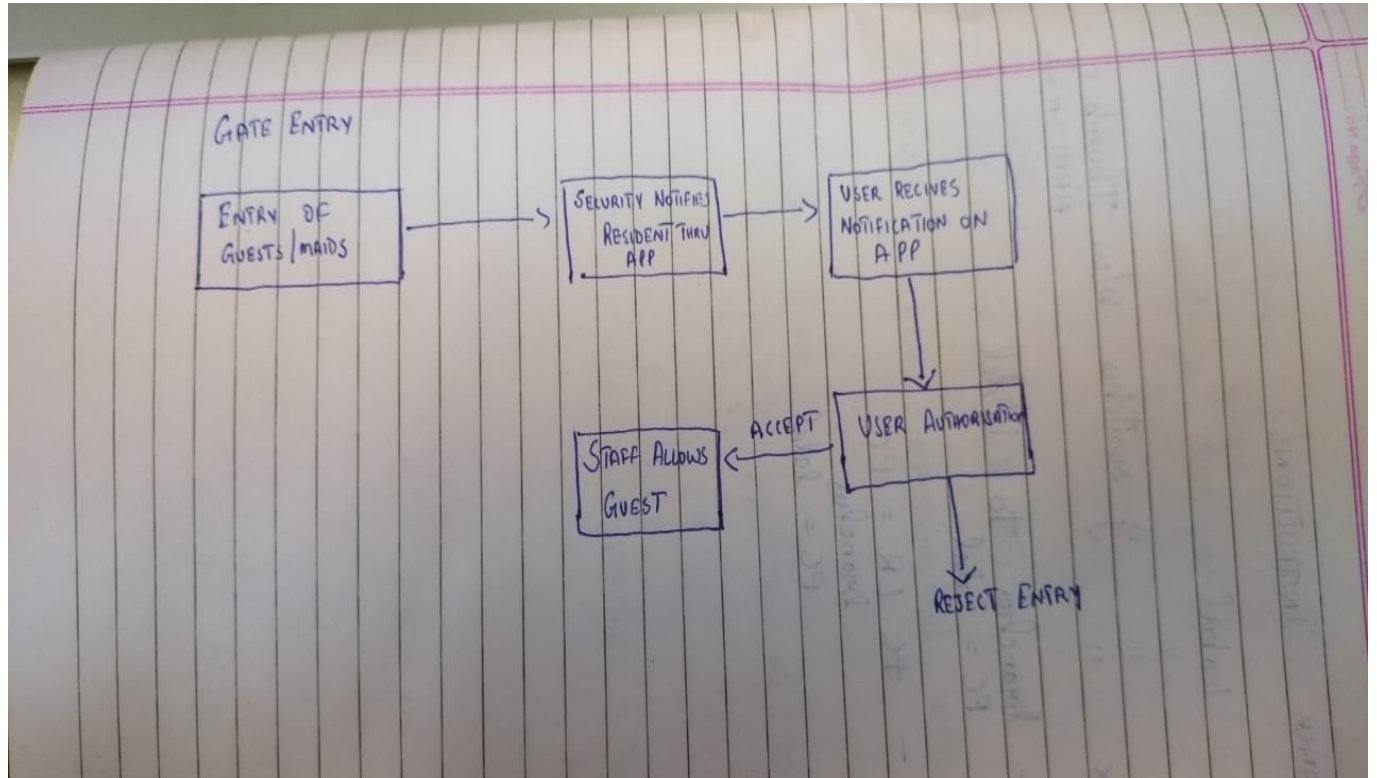
Technical Quality

Measures	Metrics
Lines Of Code	Average of 1 KLOC generated by each member for their respective functionalities.
No of Code errors	Approximately 200 syntax and semantic errors per KLOC

FLURPS+:

Property	Evaluation
Functionality	Authorization, Directories, Gate Security, Maintenance, Forums and Chat
Localisability	Supports only English at the moment
Usability	This app can be extended to be used by any apartment/societies.
Reliability	Mean time to failure = Number of operational hours / Number of failues = 10 hours / 4 failures = 2.5
Performance	Throughput = Work In Progress/cycle time Work in progress is calculated as number of tasks completed Cycle time is measured in weeks  Throughput = 12(Total tasks)/2 weeks = 6 tasks
Supportability	Code fixes during outages

Pick a function from your project with significant computations, use a pen and paper to statically analyze the flow of execution and the value of the variables for a specified input



#### Problem Statement

4. Let's assume you have received funding to launch your project as a startup. Being at the nascent stage of development processes, you have been tagged under the "Initial" maturity level. Your task is to brainstorm and come up with at least 2-3 new functionality or ways to improve the quality of your project and attain higher levels of maturity according to the CMM model.

**PES2UG20CS486 Aarav Babu**

**PES2UG20CS488 Aditya Lawankar**

Solution:

#### Software Management Tool

To make the process less chaotic and ad hoc, we need to use a Software Management Tool that can help organize and keep track of progress of Plans/Processes.

- a. Tools can help managers and team members keep track of Progress and this can also help in identifying what part of the project is already implemented and what is yet to be done.
- b. Tools can help in allotting tasks to each team member, to make sure all team members are taking up tasks which they specialize in.
- c. This tool can also help in Version Management and Bug Management.
- d. This tool allows members to spend less time explaining how things are done and more time executing it.

### **Need For Documentation**

Projects are better estimated, better planned and more flexible when there is a final and agreeable path to a goal.

- a. No ambiguity arises when there is comprehensive documentation to rely on and refer to, this results in better clarity.
- b. The requirements of Users are defined, and the Software project standards are defined.
- c. The documentation explains how the functionalities of the system, have to be met by the programmers during the development stage.
- d. Functionalities and working of the system become easier to comprehend with better documentation.

### **Need for Metrics and Measurement**

To prevent variations in the schedule, cost, functionality and quality targets there has to be a method to estimate project parameters.

- a. This helps quantify some of the attributes to help improve the product.
- b. This can also help the company identify their strong suits and help the company get better to specialize and get higher in CCM Level.
- c. This helps integrate quality into projects.