Name — B. Pravena
SRN - PES2UG19CS076
Section - B

Software Engineering Assignment

Scenario #4 -:

a) Strategy being planned with any of the following -:

1) The testing mindset or the test models that will be followed.

The testing mindset to be followed is to enhance the functionality of the already existing product to reach users who use in lower bandwidths. The mindset to be followed is to check for the enhanced functionality since the product already exists.

2) What types of tests would be used and why that is planned to be used as part of the process?

- **Regression testing** - everytime new functionality is added, they must not break initial build. It must be done to make sure none of the changes made overtime have caused bugs and no old bugs appear from addition of new software modules overtime.

- **Migration testing** - If team of developers decide to change system infrastructure, it should be done to ensure if software can be moved from older system infrastructure to new one.

- **Performance testing** — Designed to test speed and effectiveness of program. this can check if it meets the requirement of running in lower bandwidth.

- **Load testing** - Its neccessary to know if the new software can work well with real life load sizes.

3) Test environment that will be needed to be available for supporting the strategy.

This needs a main environment of performance testing environment as the main goal of the company is to how will the product ~~corresponed~~ in conditions with lower bandwidth. Various aspects such as page load speeds, input processing, stability and reliability are tested in this environment.

4) Automation strategy to be followed with brief rationale.

The team first define the goal of increasing performance in conditions with lower bandwidth. Then plan the test approaches to follow such as performance and load testing, then selecting an automation framework to support automated testing. Then selecting the ~~selectin~~ testing tools to be used. The team must then decide the design for the test cases such as different available bandwiths and their performance and its plan and its execution. Then comes test result generation and its analysis to see the performance of the changes in the different test cases. The test script is then maintained.

5) Risk identification for the strategy, analysis, contingency planning and trigger for the risk.

Risks include the resources abilable may not be enough, quality of a software product bing developed might not be the best, errors in automation, testing type chosen may not be able to be used. These risks that may be found would need to be planned for addressing as part of the migration and contingency. Risk triggers can be identified by stress testing also.

6) Process improvement suggested

Process improvement can be done by decreasing functionalities available to users with low bandwidth internet connections. This also will be having considerably lesser cost in development as they do not need to redesign the entire working of videopub. Maybe even decreasing the allowed video quality to edit, upload and publish for such users would allow them to make use of the app with lesser bandwidth as they will have lesser data to process.

7) Other (please specify) and explain as necessary.

Testing can be done by automating each test case to work at different bandwidth levels below 2 Mbps and also stress test the process to identify the limitations of the model. End-to-end testing must be done to understand if the entire application is working efficently with the new changes.

b) Two test cases with all fields needed to be into a test case (with one each with the different test types chosen).

Test Case 1 -:

Fields — bandwidth (in mbps), const video, ~~and quality~~ quality and length to be worked on, functionality being checked (example — upload, edit or publish). This will help testers understand what ~~to expect~~ aspect of the model is lacking (editing feature, upload feature, etc.) and the lowest bandwidth the application will work in.

Test Case 2 -:

Fields - differing minimal bandwidth, differing video qualities

Checks how fast the video player functionality works and helps identify and helps identify any improvement from previous versions.

---

c) Measures and metrics & which are planned for use.

Measures and metrics planned for use -:

- Fault Density - to see ratios of number of faults found to size of programs.
- Defect density - ratio of defect count to size of the release.
- MTBF - Mean Time Between Failures. Used to see how much time it takes for failure at bandwidth below 2 Mbps.
- Defect leakage - To see if the tests are efficient.

⇒ Defect Removal effectiveness

⇒ Cost incurred