FRONT-END APPLICATION USING REST APIS

1. Where would you start? What would be your first steps?

In order to establish a QA process, the process flow can be defined in the following steps-

- Understanding the application
  - Product Backlog (source where all the user stories are kept) will be created by the product owner
  - Architect/ Technologists creates the behavioral specification document for the application
  - Scrum team reviews the document to understand the new product to be built / an existing product to be updated and provides inputs if necessary.
- Getting the requirements that the Development Team assured to deliver
- Getting HLD(High Level Definition) and LLD(Low Level Definition) of the requirements
- Calculating Validation effort for the requirements
- Documenting test scenarios for the new features and review of the test scenarios from the Architect/ Technologists
- Writing new test cases based on test scenarios

2. Which process would you establish around testing new functionality?

I would like to establish **SCRUM**: SCRUM is a process in agile methodology which is a combination of the Iterative model and the incremental model. Scrum project has 3 roles, 3 artifacts, and 5 events.

Scrum team: Product Owner, Scrum master, and development team (both development and QA team).
Artifacts: Product Backlog, Sprint Backlog and Product increment.
Events: Sprint, Sprint planning, Daily Scrum, Sprint review and Sprint retrospective.
Sprint is a predefined interval in which the work has to be completed and make it ready for review or ready for production deployment. This time box usually lies between 2 weeks to 1 month.

How would you want the features to be tested?

- Testing can be started as soon as a functioning requirement is built.
- **Build Verification Testing(BVT):** Set of test cases are run on every new build to verify that build is testable before it is released to test team for further testing. These test cases are core functionality test cases that ensure the application is stable and can be tested thoroughly.
- **Unit tests in product development:** Prior to formal testing stage Developers perform unit testing for the new functionality built, which is expected to complete its discrete task.
- **Test cases in product development:** QA Engineers can use product requirements to create Test cases. According to the new functionality that is built test cases can be selected and executed in every type of environment the product is used.
- **Regression testing in product development:** When adding new features, it is important to also test old features. Although existing features have not explicitly changed, new features can have an unintentional impact on older features. By using test cases from past releases, testers can ensure that the entire product operates as expected.

- **Automated testing in product development:** As your product gets stable, the next step is automated testing. This type of testing can help with executing regression tests each time a developer creates new functionality, to ensure that they did not break old functionality.

Apart from this Performance Testing, Stress testing, Security Testing and other testing can be performed in respective sprints.

3. Which tools would you suggest using to help your team with a daily work?

- **JIRA** - JIRA is an Agile Testing tool. JIRA which is used for defect tracking, planning, reports, and managing all agile software development projects.
- **QMetry** - QMetry is an Open source agile testing tool. QMetry helps the agile team to build, manage and deploy the software faster as compared to other tools.
- **Confluence** - content collaboration tool used to help teams to collaborate and share knowledge efficiently.
- **Jenkins** - is an open-source, continuous integration software tool. The software enables developers to find and solve defects in a code base rapidly and to automate testing of their builds.

4. If you would do a test automation which techniques or best practices would you use the Application?

Best practices can ensure that testing is successful and get the maximum return of investment (ROI)

- Proof of Concept (POC) for Test Automation: Tool selection, Evaluate Suitable framework; build POC, Develop test script execute and analyze, and Test Automation feasibility analysis.
- Create Test Automation strategy
- Deciding the test cases to Automate - tests that run for multiple build, tests that require multiple data sets, frequently used functionality that introduces high risk conditions.
- Testing Early and Testing often – BVT test cases , regression testing, sanity testing. Automation can be used for running BVT test cases, Regression testing etc.
- Creating Quality Test data
- Most of the new Test cases can be automated within the sprint , which can be later useful in extend sprints