

Task 1: Imagine the following situation. You need to establish a QA process in a cross-functional team.

The team builds a front-end application using REST APIs.

1. Where would you start? What would be your first steps?
2. Which process would you establish around testing new functionality? How would you want the features to be tested?
3. Which tools would you suggest using to help your team with a daily work?
4. If you would do a test automation which techniques or best practices would you use the application?

Answer: Please find answers to above questions as mentioned below:

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

Answer: I would start as mentioned below:

- i. **Requirement Gathering & Analysis:** I would first setup a meeting with the BA/stakeholders and team members to understand requirement and collect requirement documents in order to have a proper understanding of upcoming feature. In case of any concerns/issues, I will raise the same in planning meeting and get it rectified.
- ii. **Test Planning & Strategy:** In this phase, I would break down the feature in smaller testable user stories. Then, I would start working on the test plan document so as to identify details about the approach to be followed during testing. In this phase, we will figure out details like what all needs to be tested as a part of this feature and what all is not in the scope, what type of testing is required to be done, who will be responsible for which task etc.

Note: I will also try to setup a daily or weekly meeting(as required by team members) in order to have smooth flow of information.

2. Which process would you establish around testing new functionality? How would you want the features to be tested?

Answer: Since this will be a completely new project, I would like to go ahead with agile methodology. So I would go ahead and setup the process as follows:

Prioritization Meeting: In the beginning of each sprint, we will decide which all user stories will be picked up to work upon.

Sprint Planning Meeting: Then there will be planning meeting in which all the stories will be estimated and assigned to team members.

Test Case Design: Once the story is assigned, dev team will start development work and at the same time QA member will start working on the test case creation in order to test the functionality in different test areas.

Analysis for Automation Feasibility: After the test cases are designed, we will identify the test cases that should be automated based on below mentioned criteria.

- i. Repeating scenarios that are easy to be automated
- ii. Repeating scenarios that are complex to be automated

- iii. Non-repeating scenarios

We will start developing automation scripts at this phase based on the above criteria.

Test Execution & Bug Reporting: Once the development activity has been completed and the feature is forwarded to testing team, we will start executing manual and automation scripts on same.

Execution Result Analysis: After test execution, we will analyse the result and will figure out the reason of failure. It could either be a bug in the functionality or it might be because of invalid test case or a flake/incorrect automation script. In former case, we will log a bug and will assign it to development team and in later case, we will fix the manual or automation script as required.

Bug Retesting: Once the bugs are fixed and tested fine, we can give a go-ahead from QA perspective.

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

Answer: Depending upon the requirement and also upon the comfort of the team(in terms of what most people are familiar with), we can choose from a variety of tools as mentioned below:

- i. JIRA/VSO (for sprint, user story, bug tracking)
- ii. Confluence/Wiki (for maintaining documents related to project)
- iii. Python or Java (to develop test script)
- iv. IDE can be selected based on individual's comfort (PyCharm, Eclipse/IntelliJ)
- v. GIT/TFS (for version control)
- vi. Rest Assured/POSTMAN for automated or manual testing of APIs
- vii. Jenkins/CircleCI (for continuous integration and deployment)
- viii. Microsoft Teams/Skype for business/Slack (for communication)
- ix. Jmeter/LoadRunner (In case performance testing involves)

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

Answer: For automation, I would like to follow a technique where people from the team can work on the same project at the same time. For achieving this, we would need our code to be very modular, reusable and easy to understand. I would propose to use page object model(POM) as it is verify easy to start with and to understand as well. In case, if business also want to understand the whereabouts of framework, we can use Cucumber in which we can maintain feature files. For reporting purpose, I would like to use open source reporting tools like Extent Report or Allure report.

Also, depending on whether it is a backend or frontend project and on the number and type of devices to be used, we can come up with scalability options like using cloud services for execution of scripts.