Tasks

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?**

I would first define the test strategy and plan, that will describe the approach and scope for the testing activities for the project. In the mentions deliverables the following should be included:

- Introduction to the project
- Description of system under test
- Specify where the system will be run, i.e.: browsers, phones and other devices or platforms
- Scope and objectives
- Roles and responsibilities
- Environments, with entry and exit criteria
- Features to be tested
- Features out of scope for testing
- Risks and mitigation
- Test techniques, such as functional test, exploratory test, automations, etc
- Testing tasks
- Defect reporting and tracking
- Tools to be used
- Test deliverables
- Test schedule

Once the test plan has been defined, the next step would be creating a test suite, including the test cases written against the requirements to be met. Both positive and negative scenarios should be identified. In an agile environment, the test cases will be written from sprint to sprint, when the new functionalities to be build are refined and ready to be developed.
By that point, the requirements should be clear and technical documentation provided, such as the definition of the API being used, be it RAML, Swagger or any other tool.

The execution of tests will start as soon as the functionalities have been built, starting with the test cases previously described making sure all the acceptance criteria are met. The execution of the test cases should be supplemented with exploratory tests.

By then of the phase, being the sprint in an agile environment, all the relevant test cases should have been executed, covering all the business and technical requirements, and critical and mayor bugs should have been fixed. In case of having open bugs at the end of the sprint, a decision on how to proceed for the next sprint should be agreed on within the development team and the product owner.
If there is automation in place for the project, the main flows and critical paths should be covered by it.

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

Based on my experience in the mobile development field Postman, I have been using and recommend to use the following:

- A proxy like Charles or Fiddler, to help debugging or even replicating scenarios like errors and such.
- For mobile app development projects, Xcode and Android Studio for debugging and logging errors.
- For web apps, use the development tools of the specific browser.
- Postman for testing manually the APIs.
- Selenium for web UI automation. REST-assured for API automation (Java).
- Git as a version control system.

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

Before starting to automate, it is important to identify what is worth automating, which usually will cover the main flows of the app and critical paths.
Testing the service (API) would usually be the first priority, given that it is faster in execution and development time, more reliable and often provide more relevant insights of the issues being found. Testing an app through its UI is slow in execution and prone to errors. Even though it may be needed to cover integration and end-to-end tests.

Write cross browser tests providing abstraction from the driver being used, so that your tests can handle different browser types or be run in parallel.

Make use of data providers, so that the same test will be run for different sets of data without writing multiple test methods. Write the tests in such a way that will allow to do so.

Separate the assertions that should be done in the test classes from the interface. This can be done for example by following the Page Object Pattern. Assertions shouldn't be done in the Page Object class, but in the test class.

Avoid dependencies from other tests when possible. Preconditions for each test should be set up before the test itself. Otherwise the results would be misleading, i.e.: if the initial setup is defined in the test and it fails, the test is marked as failed, even though it wasn't performed.

2. How would you test search UI functionality of your favourite website (e.g. https://medium.com, https://www.google.de)?

1. **Choose your favourite website which has search functionality.**
2. **Document several test cases.**
3. **Implement one or two automated tests based on the test cases.**

Title: Search - search page - display			
Preconditions:			
	Step actions	**Expected result**	**Result**
1	Browse google.com on the browser	The following is present in the page: - Gmail link at the top right - Images link next to the Gmail one - Button to login at the top right - Google logo - Search input field - Search button The whole page is country and language located	

Title: Search - search term Is one word			
Preconditions:			
	Step actions	**Expected result**	**Result**
1	Browse google.com on the browser	The following is present in the page: - Gmail link at the top right - Images link next to the Gmail one - Button to login at the top right - Google logo - Search input field - Search button The whole page is country and language located	
2	Click on the search input field	Focus is on the search input field displaying a cursor	
3	Type the search term and press enter	The search is made providing results relevant to the search term	

Title: Search - search term contains multiple words

Preconditions:			
	Step actions	**Expected result**	**Result**
1	Browse google.com on the browser	The following is present in the page: - Gmail link at the top right - Images link next to the Gmail one - Button to login at the top right - Google logo - Search input field - Search button The whole page is country and language located	
2	Click on the search input field	Focus is on the search input field displaying a cursor	
3	Type the search term (multiple words) and press enter	The search is made providing results relevant to the search terms	

Title: Search - search term contains numbers and special characters			
Preconditions:			
	Step actions	**Expected result**	**Result**
1	Browse google.com on the browser	The following is present in the page: - Gmail link at the top right - Images link next to the Gmail one - Button to login at the top right - Google logo - Search input field - Search button The whole page is country and language located	
2	Click on the search input field	Focus is on the search input field displaying a cursor	
3	Type the search term and press enter	The search is made providing results relevant to the search term	

Title: Search - search input field boundaries
Preconditions:

	Step actions	Expected result	Result
1	Browse google.com on the browser	The following is present in the page: - Gmail link at the top right - Images link next to the Gmail one - Button to login at the top right - Google logo - Search input field - Search button The whole page is country and language located	
2	Click on the search input field	Focus is on the search input field displaying a cursor	
3	Type a search term with more than 2048 characters	The term search gets cropped to 2048 characters	

Title: Search - search button			
Preconditions:			
	Step actions	**Expected result**	**Result**
1	Browse google.com on the browser	The following is present in the page: - Gmail link at the top right - Images link next to the Gmail one - Button to login at the top right - Google logo - Search input field - Search button The whole page is country and language located	
2	Click on the search input field	Focus is on the search input field displaying a cursor	
3	Type the search term and click on the search button	The search is made providing results relevant to the search term	

Title: Search - autocompletion dialog			
Preconditions:			
	Step actions	**Expected result**	**Result**

1	Browse google.com on the browser	The following is present in the page: - Gmail link at the top right - Images link next to the Gmail one - Button to login at the top right - Google logo - Search input field - Search button The whole page is country and language located	
2	Click on the search input field	Focus is on the search input field displaying a cursor	
3	Type the search term	A drop-down list with relevant suggestions is displayed	

Title: Search - autocompletion dialog - select suggestion			
Preconditions:			
	Step actions	**Expected result**	**Result**
1	Browse google.com on the browser	The following is present in the page: - Gmail link at the top right - Images link next to the Gmail one - Button to login at the top right - Google logo - Search input field - Search button The whole page is country and language located	
2	Click on the search input field	Focus is on the search input field displaying a cursor	
3	Type the search term	A drop-down list with relevant suggestions is displayed	
4	Click on one of the suggestions	The search input field gets filled with the suggestion. Search is performed providing results for the suggested term	

Title: Results - display			
Preconditions: a search has already been performed			
	Step actions	**Expected result**	**Result**

1	Inspect the results page	The following is present in the page: - The search input field is at the top of the page - A bar with search options is available underneath (All, Images, Maps, News) - A text stating the name of results found and the tame it took - A list of results is shown sorted by relevancy - Related searches suggestions - Google logo as an indicator of the pages available at the bottom The whole page is country and language located	

Title: Results - images			
Preconditions: a search has already been performed			
	Step actions	**Expected result**	**Result**
1	Click on the Images tab	The results page shows images relevant to the search term	

Title: Results - news			
Preconditions: a search has already been performed			
	Step actions	**Expected result**	**Result**
1	Click on the News tab	The results page shows news relevant to the search term	

Title: Results - no results			
Preconditions: a search providing no results has already been performed			
	Step actions	**Expected result**	**Result**

1	Inspect the results page	The following is present in the page: - The search input field is at the top of the page - A bar with search options is available underneath (All, Images, Maps, News) - No list of results is present - A message is displayed informing the user their search did provide any result The whole page is country and language located	

Title: Results - pagination			
Preconditions: a search providing results has already been performed			
	Step actions	**Expected result**	**Result**
1	Inspect the results page	The following is present in the page: - The search input field is at the top of the page - A bar with search options is available underneath (All, Images, Maps, News) - A text stating the name of results found and the tame it took - A list of results is shown sorted by relevancy - Related searches suggestions - Google logo as an indicator of the pages available at the bottom The whole page is country and language located	
2	Click on next	A new results page with further results is displayed	

Title: Results - click on result			
Preconditions: a search providing results has already been performed			
	Step actions	**Expected result**	**Result**

1	Inspect the results page	The following is present in the page: - The search input field is at the top of the page - A bar with search options is available underneath (All, Images, Maps, News) - A text stating the name of results found and the tame it took - A list of results is shown sorted by relevancy - Related searches suggestions - Google logo as an indicator of the pages available at the bottom The whole page is country and language located	
2	Click on one of the results	Browses the result website	

Title: Results - click on image result			
Preconditions: a search providing image results has already been performed			
	Step actions	**Expected result**	**Result**
1	Click on the Images tab	The results page shows images relevant to the search term	
2	Click on one of the results	Expands the image clicked on	