Please download and install JMeter (Windows, Mac) and LoadRunner (Installation) tools into your systems. Also, clone and run the Contest CRUD backend code from the git repository: https://github.com/pratiksiwakoti/jmeter_loadrunner.git or you can use the attached zip folder for the backend code.

1) JMeter Tasks:
    a. **Performance Testing**:
        i. Create a Test Plan for Contest REST API testing. In the test plan, create a Thread Group for the populate endpoint and test the endpoint's performance. Show the results using View Result Tree. Report the load time, latency, and data size (bytes).
        ii. Create another Thread group for the deleteContest endpoint and test the endpoint's performance. Show the results using a View Result Tree: show the Sampler result, Request, and Response data.
    b. **Load Testing:**
        i. Create another Thread Group for getAllContest endpoint with 10 users and a loop count of 10. Also, add a Duration Assertion of 1 second. Describe the results using View Results Tree, Summary Report, View Results in Table, and Graph Results. Select a test that failed and describe why it failed.
2) LoadRunner Tasks:
    a. Performance Testing:
        i. Create a script in the LoadRunner Virtual Generator to test the performance of createContest endpoint. Show the output and the Summary Report.
        ii. Create another script in the Virtual Generator to test the performance of getContest endpoint. Parametrize the input contestId in the script and add three values for the parameter. Show the runtime parameters and the output for the three iterations.
        iii. Create a script for getAllContest in the Virtual Generator for heavy load testing and test its performance. (**Note**: The result is more than 1500 records)
    b. Load Testing:
        i. Create a scenario in the LoadRunner Controller with 20 virtual users. Import the script you created for 2.a.iii and run it. Describe the graphs for Running Vusers (Running Curve) and Response Time.
        ii. Show the results of the above scenario in a session LoadRunner Analysis component. Add a Service Level Agreement for the endpoint above with a response time of 0.1 seconds for 10 or fewer users and a response time of 0.2 seconds for more than 10 users. Show the results of the SLA.