



Department of Computer Science

Comp438 – QA Course

Fall 2024/2025

Title of Project:

Software Testing for LinkedIn Platform

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Project Overview :

This report summarizes the strategy, execution, and results of comprehensive testing of the professional networking platform called LinkedIn. The objective of this project is to conduct an assessment of the quality of core features in LinkedIn, both manually and automated using Selenium IDE, to ensure the functional and non-functional requirements of the system are met. The reason to choose LinkedIn for the research has been its sufficient complexity and multiplicity of different functionalities, including user authentication, profile management, job search messaging, and content sharing, in order to execute a holistic approach in software testing.

Requirements Analysis

Functional Requirements

- User authentication (login, logout, registration).
- Profile management (create, update, delete profiles).
- Job-related functionalities (save/unsave jobs, apply for jobs "Easy Apply ,By link(Redirect)", search for jobs).
- Messaging system (send, receive, delete messages).
- Connection management (add, accept/decline, and view connections).
- Group Management(join, create, and manage professional groups).
- Communities Management (Discussion forums and community engagement features).

Non-Functional Requirements

- Usability: User-friendly interface and descriptive error messages.
- Performance: Fast page load times and dashboard updates ,login accounts in same time.
- Security: Secure data handling and input validation.
- Compatibility: Support for major browsers and platforms.
- Scalability: Efficient handling of high user traffic.

Test Plan

Objective

The objective of the test plan is to:

- Validate the functional and non-functional requirements of LinkedIn.
- Identify defects and recommend improvements.
- Ensure the platform's quality and reliability.
- Ensure performance and usability under different load conditions.

Scope

Inclusions:

- **The main features of the website:**
 - User Registration, login, and logout.
 - Profile Management.
 - Networking (connections, follow, and recommendations).
 - Job Search and application workflow.
 - Messaging and notification systems.
 - Feed updates, posts, and user interactions (like, comment).
- Performance testing under high user load.

Exclusions:

- Third-party plugins or extensions linked to LinkedIn.
- External system integration, such as payment gateways.

Test Strategy

Methodology

- Agile-based iterative testing combining manual and automated approaches.

Testing Levels

1. **Unit Testing:** Validating individual components.
2. **System Testing:** End-to-end testing of functionalities.
3. **Performance Testing:** Simulating high-load scenarios.

Techniques

- Black-box testing for functional validation (Using Equivalence Classes).

Test Schedule

Task	Duratio n	Start Date	End Date
<i>Requirement Analysis</i>	1 week	Week 1	Week 1
<i>Test Plan Creation</i>	3 Days	Week 2	Week 2
<i>Test Case Development</i>	4 Days	Week 2	Week 3
<i>Test Execution</i>	1 weeks	Week 3	Week 4
<i>Automation & Performance</i>	2 Days	Week 4	Week 4
<i>Results Documentation</i>	1 Day	Week 4	Week 4

Test Objectives

1. Functional Objectives:

- Verify users can register, log in, and log out seamlessly.
- Ensure profile creation and updates function as expected.
- Test job-related workflows (save, unsave, apply for jobs).
- Validate messaging system for sending, receiving, and deleting messages.
- Test connection-related functionalities (adding connections, managing network).

2. Performance Objectives:

- Handle 180 concurrent users open feed page in 15 second without significant delays.
- Handle 500 concurrent users open feed page in 15 second without significant delays.

3. Security Objectives:

- Ensure encryption of sensitive user data.

4. Usability Objectives:

- Confirm intuitive navigation across LinkedIn's workflows.
- Validate actionable and descriptive error messages.

Test Resources

- **Team:** All team members responsible for functional and non-functional test cases.
- **Environment:** A staging server replicating LinkedIn's production setup.

Tools

- **Jira:** For managing and documenting test cases.
- **Selenium IDE:** For automating user scenarios.
- **JMeter:** For performance and load testing.

Process

- Execution of manual test cases for core functionalities.
- Automation of repetitive scenarios.
- Conduct performance testing under simulated high-load conditions.

Roles and Responsibilities

- **All Team Members:**
 - Write 4 test cases covering core functionalities.
 - Execute assigned test cases and document results in Jira.
 - Automate 2 test cases each using Selenium IDE.
 - Collaborate on performance testing with JMeter.

Test Deliverables

- Test cases and associated data.
- Execution results with defect logs.
- Automation scripts for GUI scenarios.
- Performance analysis reports.
- Final summary report and presentation.

Risks and Assumptions

- **Risks:**
 - Unavailability of production-like data for specific tests.
 - API rate limits may hinder performance testing scenarios.
- **Assumptions:**
 - The staging environment mirrors production.
 - All team members have access to necessary tools and resources.

Exit Criteria

- All high-priority defects resolved.
 - Functional and non-functional test cases executed successfully.
 - Regression testing completed with zero critical failures.
-

Approvals

- Test Plan approved by QA lead and project manager.
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Test Cases

Test Case 1: Easy Apply Application

Description	
Field	Details
Test Case ID	TC003
Test Title	Easy Apply
Description	Verify that the user can successfully submit an application using the "Easy Apply" feature.
Preconditions	<ol style="list-style-type: none">1. User is logged in to LinkedIn.2. A job posting with the "Easy Apply" option is available.
Test Data	Email: 1210264@student.birzeit.edu phone country code :+972 mobile phone Number:0599248733 CV
Test Steps	<ol style="list-style-type: none">1. Click to search bar2. type title of job(e.g. QA)3. select filters(Remote , Easy Apply ,Entry level)4. Open a job posting with "Easy Apply" functionality.5. Fill in the required fields.6. Submit the application.7. Validate submission success.
Expected Result	Application is successfully submitted using "Easy Apply."
Actual Result	As Expected :Application is successfully submitted using "Easy Apply."
Priority	High
Status	Pass

Test Case 2: Save a job

Description	
Field	Details
Test Case ID	TC005
Test Title	Save a Job
Description	Verify that a job can be saved and appears in the "Saved Jobs" section.
Preconditions	<ol style="list-style-type: none">1. User is logged in to LinkedIn.2. A job posting is available.
Test Data	Not required for this test.
Test Steps	<ol style="list-style-type: none">1. Open a job posting.2. Click the "Save" button.3. Navigate to the "Saved Jobs" section.4. Verify the job is listed under saved jobs.
Expected Result	Job is saved and listed in the "Saved Jobs" section.
Actual Result	Job is saved and appear in the "Saved Jobs" section.
Priority	Medium
Status	pass

Test Case 3: Usability - Navigation

Description	
Field	Details
Test Case ID	TC018
Test Title	Verify Job Application Navigation
Description	Ensure users can navigate to the job application form with minimal clicks.
Preconditions	1. User is logged in to LinkedIn. 2. User on the LinkedIn homepage.
Test Data	N/A
Test Steps	1. Navigate to a job posting. 2. Click "Easy Apply."
Expected Result	The user is redirected to the job application form within 2 clicks.
Actual Result	As expected
Priority	High
Status (Pass/Fail)	Pass

Test Case 4: Invalid Apply

Description	
Field	Details
Test Case ID	TC007
Test Title	Invalid Apply
Description	Verify that an error is displayed when attempting to apply with invalid credentials.
Preconditions	1. User is logged in to LinkedIn. 2. A job posting is available.
Test Data	Email: invalid-email(e.g. 1210264@student.birzeit.edu) mobile phone number :88843888888888888888888888
Test Steps	1. Open a job posting. 2. select a job with "Easy Apply" 3. fill the Require fields 4. Use invalid phone number to apply. 5. Attempt to proceed with the application.
Expected Result	Application fails, and an appropriate error message is displayed.
Actual Result	Application fails, and an appropriate password error message is displayed.
Priority	High
Status	pass

Test case 8: React to a Comment

Field	Details
Test Case ID	TC039
Test Title	React a Comment
Description	Validate that users can react to comments.
Preconditions	User is logged in and has access to a post with comments.
Test Data	Reaction: "Like"
Test Steps	1. Locate a comment on a post. 2. Click the "Like" button under the comment.
Expected Result	The reaction count under the comment increases.
Actual Result	The reaction count under the comment did increase.
Priority	Medium
Status	Pass

Test Case 9: Comment on a Post

Field	Details
Test Case ID	TC032
Test Title	Comment on a Post
Description	Validate that users can add comments to posts.
Preconditions	User is logged in and has access to the feed.
Test Data	Comment Content: "Great post!"
Test Steps	1. Locate a post on the feed. 2. Click "Comment." 3. Enter "Great post!" and click "Post Comment."
Expected Result	The comment appears under the post.
Actual Result	The comment did appear under the post.
Priority	High
Status	Pass

Test Case 10:Repost a post

Field	Details
Test Case ID	TC034
Test Title	Repost a Post
Description	Validate that users can Repost posts with comments.
Preconditions	User is logged in and has access to the feed.
Test Data	Repost a post (no data)
Test Steps	1. Locate a post on the feed. 2. Click "repost."
Expected Result	The reposted post count on the post increment by one.
Actual Result	The reposted post count on the post has incremented by one.
Priority	Medium
Status	Pass

Test Case 11: Edit a post

Field	Details
Test Case ID	TC035
Test Title	Edit a Post
Description	Validate that users can edit their existing posts.
Preconditions	User is logged in and has access to the feed.
Test Data	Edited Content: "Updated: Hello, LinkedIn!"
Test Steps	<ol style="list-style-type: none"> 1. Locate an existing post. 2. Click the "More" menu (three dots). 3. Select "Edit post." 4. Update the content to "Updated: Hello, LinkedIn!" and save changes.
Expected Result	The post updates with the new content.
Actual Result	The post updates with the new content.
Priority	Medium
Status	Pass

Test Case 13: Send Connection Request

Description	
Field	Details
Test Case ID	TC009
Test Title	Send connection Request
Description	Ensure that the user can send a connection request to another user successfully.
Preconditions	<ol style="list-style-type: none"> 1- User is logged into LinkedIn. 2- A user send a request with the "Connect" button is available.
Test Data	Not required for this test.
Test Steps	<ol style="list-style-type: none"> 1- Open the user's profile. 2- Send a connection request using "Connect" button. 3- Add personalized note (optional).
Expected Result	Display "Your invitation is sent" message after ensuring the connection process.
Actual Result	The connection request is successfully sent, and receive the confirmation message
Priority	High
Status	Pass

Test Case 14: Join A Group

Description	
Field	Details
Test Case ID	TC011
Test Title	Join a public group
Description	Ensure that a user can join a group successfully.
Preconditions	User is logged in and the group is public.
Test Data	No require data for this test.
Test Steps	1- Go to the "Groups" section. 2- Navigate "Python Web Developers". 3- Clicks on "Join" button.
Expected Result	User is added to the group, and the group's content becomes accessible.
Actual Result	User is added to the group, and the group's content becomes accessible.
Priority	High
Status	Pass

Test Case 15: Send Message to 1st-Degree Connection

Description	
Field	Details
Test Case ID	TC013
Test Title	Send a Message to a 1st-Degree Connection
Description	Ensure that a user can successfully send a message to a 1st-degree connection.
Preconditions	User is logged in and connected to a 1st-degree connection.
Test Data	Message Content: How are you brother?
Test Steps	1. Navigate to the messaging section. 2. Select Mohammad Issa from the contacts list. 3. Enter the message and click "Send."
Expected Result	Message is successfully sent and appears in the conversation thread.
Actual Result	Message is successfully sent and appears in the conversation thread.
Priority	High
Status	Pass

Test Case 16: Leave the group

Field	Details
Test Case ID	TC012
Test Title	Leave the group
Description	Ensure that a user can successfully leave a group they are a member of.
Preconditions	User is logged in and a member of the group.
Test Data	Not required for this test.
Test Steps	1. Navigate to the "Python Web Developers" group page. 2. Click the "Leave Group" button.
Expected Result	User is removed from the group, and the group is no longer accessible.
Actual Result	User is removed from the group, and the group is no longer accessible.
Priority	Medium
Status	Pass

Test Case 17: Edit profile information

Description	
Field	Details
Test Case ID	TC026
Test Title	Edit Profile Information on LinkedIn
Description	Ensure that a user can successfully edit and save changes to their LinkedIn profile information.
Preconditions	User is logged in and has access to their LinkedIn profile.
Test Data	New Job Title: Software Engineer New Location: Ramallah, Palestine
Test Steps	<ol style="list-style-type: none"> 1. Navigate to the profile section. 2. Click "Edit" on the desired section (e.g., "Experience"). 3. Update the job title and location. 4. Click "Save".
Expected Result	The profile is successfully updated with the new job title and location.
Actual Result	The profile is successfully updated with the new job title and location.
Priority	High
Status	Pass

Test Case 18: Add a profile section

Description	
Field	Details
Test Case ID	TC028
Test Title	Add a Profile Section on LinkedIn
Description	Ensure that a user can successfully add a new section to their LinkedIn profile.
Preconditions	User is logged in and has access to the "Add Profile Section" feature.
Test Data	Section to Add: "Certifications" Certification Name: "AWS Certified Solutions Architect"
Test Steps	<ol style="list-style-type: none"> 1. Navigate to the profile page. 2. Click on the "Add Profile Section" button. 3. Select the "Certifications" section. 4. Enter the certification details. 5. Click "Save".
Expected Result	The new section is added to the profile, and the entered certification details appear correctly.
Actual Result	The new section is added to the profile, and the certification details appear correctly.
Priority	High
Status	Pass

Test Case 19: edit language profile section

Description	
Field	Details
Test Case ID	TC040
Test Title	Invalid Edit of Language Section on LinkedIn
Description	Ensure that a user cannot successfully edit a language section on their LinkedIn profile with invalid or incorrect data.
Preconditions	User is logged in. User has access to the "Edit Language" feature.
Test Data	Language: "12345"
Test Steps	<ol style="list-style-type: none"> 1. Navigate to the profile page. 2. Click on the "Edit Language" button for "Languages". 3. Enter invalid language details ("12345" as the Language). 4. Click "Save".
Expected Result	An error message is displayed indicating that invalid data cannot be saved.
Actual Result	No changes are saved, and an error message is displayed as expected.
Priority	High
Status	Pass

Test Case 20: add Skill

Description	
FIELD	DETAILS
TEST CASE ID	TC015
TEST TITLE	ADD A SKILL TO LINKED LIST PROFILE
DESCRIPTION	ENSURE THAT A USER CAN SUCCESSFULLY ADD SKILLS TO THEIR LINKEDIN PROFILE .
PRECONDITIONS	USER IS LOGGED IN AND HAS ACCSESSES TO THEIR LINKEDIN PROFILE .
TEST DATA	SKILL : TEAM WORK
TEST STEPS	<ol style="list-style-type: none"> 1. Navigate to the profile section. 2. Scroll down to the skills section . 3. Click "Add new Skill." 4. Enter the Skill name and click add .
EXPECTED RESULT	SKILL IS SUCCESSFULLY ADDED TO THE PROFILE SECTION AND APPEARS IN THE PROFILE SECTION.
ACTUAL RESULT	SKILL IS SUCCESSFULLY ADDED APPEARS IN THE SKILL SECTION.
PRIORITY	HIGH
STATUS	PASS

Automation

Automated Test Cases

Test Case 2: Save a Job

- Description:** Verify users can save jobs to their saved list.

The screenshot shows the Selenium IDE interface with the following details:

- Project:** QA project1*
- Executing:** ✓ Save a job*
- Run current test** button
- Table:** A table showing the test steps with columns: Command, Target, and Value.

Command	Target	Value
13 ✓ assert text	m__message > span	You've saved this job.
14 ✓ verify element present	css=.artdeco-toast-item__message > span	
15 ✓ click	linkText=See saved jobs	
16 ✓ click	linkText=See saved jobs	
17 ✓ click	id=ember525	
18 ✓ click	css=#ember546 .image-text-lockup__text	
19 ✓ close		

- Log:** Shows the execution log with entries:

 - 18. Trying to find css=#ember546 .image-text-lockup__text... OK
 - Warning Element found with secondary locator xpath=/div[4]/div/span. To use it by default, update the test step to use it as the primary locator.
 - 19. close OK
 - 'Save a job' completed successfully

- Reference:** Shows the URL https://www.linkedin.com/

Test Case 4: Invalid Apply

Description: Test system behavior during an invalid job application attempt. The system addresses this by displaying a warning message under the invalid field.

The screenshot shows the Selenium IDE interface with the following details:

- Project:** QA project1*
- Executing:** ✓ invalid Apply*
- Run current test** button
- Table:** A table showing the test steps with columns: Command, Target, and Value.

Command	Target	Value
9 ✓ click	id=ember471	
10 ✓ click	id=single-line-text-for-m-component-formElement-urn-li-jobs-app...	
11 ✓ click	id=single-line-text-for-m-component-formElement-urn-li-jobs-app...	
12 ✓ double click	id=single-line-text-for-m-component-formElement-urn-li-jobs-app...	
13 ✓ type	id=single-line-text-for-m-component-formElement-urn-li-jobs-app...	12345678908765432
14 ✓ verify element present	css=.artdeco-inline-feedback__message	456789876543

- Log:** Shows the execution log with entries:

 - 12.4120423321-14095736556-phoneNumber-nationalNumber OK
 - 13. type on id=single-line-text-form-component-formElement-urn-li-jobs-applyformcommon-easyApplyFormElement-4120423321-14095736556-phoneNumber-nationalNumber with value 12345678908765432456789876543 OK
 - 14. verifyElementPresent on css=.artdeco-inline-feedback__message OK
 - 'invalid Apply' completed successfully

- Reference:** Shows the URL https://www.linkedin.com/

Test Case 5: Send Connection Request:

- Description:** In this case, a user sends a connection request to another connection user successfully by writing a particular key “Ibra” then shows him the desired profile.

Selenium IDE - QaTesting

Project: QaTesting

Executing: ✓ SendConnectionRequest

https://www.linkedin.com/feed/

Command	Target	Value
1 ✓ open	https://www.linkedin.com/feed/	
2 ✓ set window size	1552x832	
3 ✓ mouse over	css=profile-card-background-image	
4 ✓ mouse out	css=profile-card-background-image	
5 ✓ click	css=search-global-typeahead__input	Ibra
6 ✓ type	css=search-global-typeahead__input	\$KEY_DOWN
7 ✓ send keys	css=search-global-typeahead__input	\$KEY_DOWN
8 ✓ send keys	css=search-global-typeahead__input	\$KEY_ENTER
9 ✓ send keys	css=search-global-typeahead__input	
10 ✓ click	css#ember301 > .artdeco-button__text	
11 ✓ click	css#ember473 > .artdeco-button__text	

Runs: 1 Failures: 0

Test Case 6: Send Message to 1st-degree Connection user

- Description:** In this case, we send a message for our 1st-degree connection by navigating to the search bar and select his profile.

Selenium IDE - QaTesting

Project: QaTesting

Executing: ✓ SendMessage

https://www.linkedin.com/feed/?trk=guest_homepage-basic_google-one-tap-submit

Command	Target	Value
1 ✓ open	https://www.linkedin.com/feed/?trk=guest_homepage-basic_google-one-tap-submit	
2 ✓ set window size	1054x800	
3 ✓ click	css=search-global-typeahead__input	
4 ✓ click	id=ember200	
5 ✓ click	id=ember226	
6 ✓ edit content	css=msg-form__contenteditable	<p>Hello</p><p> </p>
7 ✓ click	css=msg-form__send-button	
8 ✓ edit content	css=msg-form__contenteditable	<p> </p>
9 ✓ click	id=ember457	

Runs: 1 Failures: 0

Test Case 7: Create a post :

- Validate that users can successfully create a post.

The screenshot shows the LinkedIn feed interface with a sidebar for 'All activity'. A context menu is open over a post by 'Hi Mo'. The menu path 'Create a post*' is highlighted. The Selenium IDE tool is overlaid, showing a test titled 'Create a post*' with the following steps:

Command	Target	Value
click	css=block:nth-child(1)	
mouse out	css=block:nth-child(1)	
edit content	css=share-creation-state__text-edit or ql-editor	<p>Hi Mo</p>
click	css#ember259 > .artdeco-button__text	
mouse over	id=ember50	

The 'Log' section shows the execution results for each step, indicating they were successful. The status message at the bottom is: "'Create a post*' completed successfully".

Test Case 8: React to a Comment:

- Validate that users can react to Comments on posts.

The screenshot shows the LinkedIn feed interface with a sidebar for 'All activity'. A context menu is open over a comment by 'Alaa Al'. The menu path 'React to a Post*' is highlighted. The Selenium IDE tool is overlaid, showing a test titled 'React to a Post*' with the following steps:

Command	Target	Value
set window size	eURN:isActivity:7282894082979299328	800x616
mouse over	css=update-components-actor__avat ar > ivm-view-attr__img-wrapper	
mouse out	css=update-components-actor__avat ar > ivm-view-attr__img-wrapper	
click	css=react-button__text nth-child(1)	

The 'Log' section shows the execution results for each step, indicating they were successful. The status message at the bottom is: "'React to a Comment' completed successfully".

Test Case 9: Comment on a Post :

- Validate that users can add comments to posts.

The screenshot shows the LinkedIn feed interface with a sidebar for 'All activity'. A context menu is open over a post by 'heyyy'. The menu path 'Comment on a Post*' is highlighted. The Selenium IDE tool is overlaid, showing a test titled 'Comment on a Post*' with the following steps:

Command	Target	Value
mouse over	css=description-update-components	
click	css=shared-social-action-bar__comment-ember105 > .artdeco-button__text	<p>heyyyy</p> </p>
edit content	css=editor	
click	id=ember256	
mouse over	id=ember256	

The 'Log' section shows the execution results for each step, indicating they were successful. The status message at the bottom is: "'Comment on a Post*' completed successfully".

Test Case 10:Edit a post :

- Validate that users can edit their existing posts.

The screenshot shows the Selenium IDE interface with the following details:

- Project:** LinkedInContent
- Executing:** https://www.linkedin.com/in/john-star-60a682344/recent-activity/all/
- Log:**
 - setWindowSize on 1562x832
 - click on #member102
 - click on #member251 feed-shared-control-menu__headline
 - edit content
 - click on #member200 > artdeco-button__text
- Reference:**
 - Trying to find css:#member251 feed-shared-control-menu__headline OK
 - Trying to find css:#member200 > artdeco-button__text OK
- Warning:** Element found with secondary locator xpath://div[2]/div/div/button/span. To use it by default, update the test step to use it as the primary locator.
- Status:** Edit a Post completed successfully
- System Status:** Sun 5:18 PM (Local)

Test Case 11:Delete a Post :

- Validate that users can delete their posts.

The screenshot shows the Selenium IDE interface with the following details:

- Project:** LinkedInContent
- Tests:** Run current test Ctrl+R https://www.linkedin.com/in/john-star-60a682344/recent-activity/all/
- Comment on a Post***
- Create a post***
- Delete a Post***
- Edit a Post***
- React to a Comment**
- Share a Post**
- TestCreatePost**
- Log:**
 - open on https://www.linkedin.com/in/john-star-60a682344/recent-activity/all/ OK
 - setWindowSize on 1562x832
 - click on #member102
 - mouse over #member24
 - click on #member200 feed-shared-control-menu__headline
- Reference:**
 - Trying to find css:#member102 > svg OK
 - Trying to find css:#member200 > svg OK
 - click on css:#member254 feed-shared-control-menu__headline OK
 - click on css:#member102 > artdeco-button-primary OK
- Status:** 'Delete a Post' completed successfully
- System Status:** Sun 5:25 PM (Local)

Test Case 12: Add skill

Description: The "Add Skill" functionality tests the ability to add a new skill to a linked list, ensuring that the skill is correctly inserted.

The screenshot shows the Selenium IDE interface with the following details:

- Project:** QaProjects
- Test Name:** skillcheck
- URL:** https://www.linkedin.com
- Test Steps (Table):**

Command	Target	Value
1. open	/feed/	
2. set window size	802x816	
3. click	css=t-16 nth-child(2)	
4. mouse over	xpath=/div[@id='profile-content']div/div[2]div/main/section/div[2]div/div/div/button/img	
5. mouse out	id=ember290	
6. run script	window.scrollTo(0, 1759.199951171875)	
7. click	css>#navigation-add-edit-deeplink-add-skills use	
8. run script	window.scrollTo(0, 1700)	
9. click	css="#ember640 > .artdeco-button__text	
10. click	css=.ember-view form-component-profileEditFormElement-SKILL-AND-ASSOCIATION-skill-ACoAAFMUCpsB7Xl2zYghxHWOBVf8yIARMzKkR9A-1-associations-positionUrms_t-14	
- Log:**
 - Runs: 1 Failures: 0
 - Step 10: click on css="#checkbox-form-component-profileEditFormElement-SKILL-AND-ASSOCIATION-skill-ACoAAFMUCpsB7Xl2zYghxHWOBVf8yIARMzKkR9A-1-associations-positionUrms_t-14 OK
 - Warning: Element found with secondary locator xpath=/div[3]/button/span. To use it by default, update the test step to use it as the primary locator.
 - Step 12: runScript on window.scrollTo(0, 1756) OK
 - 'skillcheck' completed successfully
- System Status:**
 - Activate Windows
 - Go to Settings to activate Windows.
 - 00:33:08
- Taskbar:**
 - 10°C Partly cloudy
 - Search bar
 - Icons for various applications like File Explorer, Mail, Task View, etc.
 - System tray showing date (12/01/2025), time (00:33), and battery status.

Test Case 13: Add experience

- Description: The "Add Experience" functionality on LinkedIn tests the ability to add new professional experiences to a user's profile. It ensures that the experience is accurately added, and linked with other relevant sections.

The screenshot shows the Selenium IDE interface with the following details:

- Project:** QaProjects
- Test Name:** addexp*
- URL:** https://www.linkedin.com
- Test Steps (Table):**

Command	Target	Value
1. open	/feed/	
2. set window size	800x816	
3. mouse over	linkText=_الاتصال	
4. mouse over	css= global-nav__primary-item nth-child(3) path	
5. mouse over	css= global-nav__primary-item nth-child(5) path	
6. mouse out	css= global-nav__primary-item nth-child(5) path	
7. mouse over	id=ember15	
8. mouse out	id=ember15	
9. mouse over	id=ember16	
10. click	id=ember16	
11. mouse out	id=ember16	
- Log:**
 - Warning: Element found with secondary locator linkText=_الاتصال. To use it by default, update the test step to use it as the primary locator.
 - Step 13: mouseOver on css=pi-update-supported-locales-section__dropdown-button-icon OK
 - Step 14: mouseOut on css=pi-update-supported-locales-section__dropdown-button-icon OK
 - Step 15: runScript on window.scrollTo(0, 420) OK
 - 'addexp*' completed successfully
- System Status:**
 - Activate Windows
 - Go to Settings to activate Windows.
 - 04:28:57
- Taskbar:**
 - 10°C Partly cloudy
 - Search bar
 - Icons for various applications like File Explorer, Mail, Task View, etc.
 - System tray showing date (13/01/2025), time (04:29), and battery status.

Performance Testing

Tool: JMeter

- Scenarios:

- Simulate 180 concurrent users login to the system.
- Simulate 500 concurrent users open feed page.

1) Simulate users login to system

Test Setup

- Thread Group Configuration:**

- 180 users in 15 seconds: All requests were successful.
- 195 users in 15 seconds: Some requests encountered errors.

- Tools Used:** Apache JMeter (Version 5.6.3)

- Test Cases:** Simulated login requests using the "HTTP Request" sampler.
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1. Load Testing at 180 Users (15 Seconds):

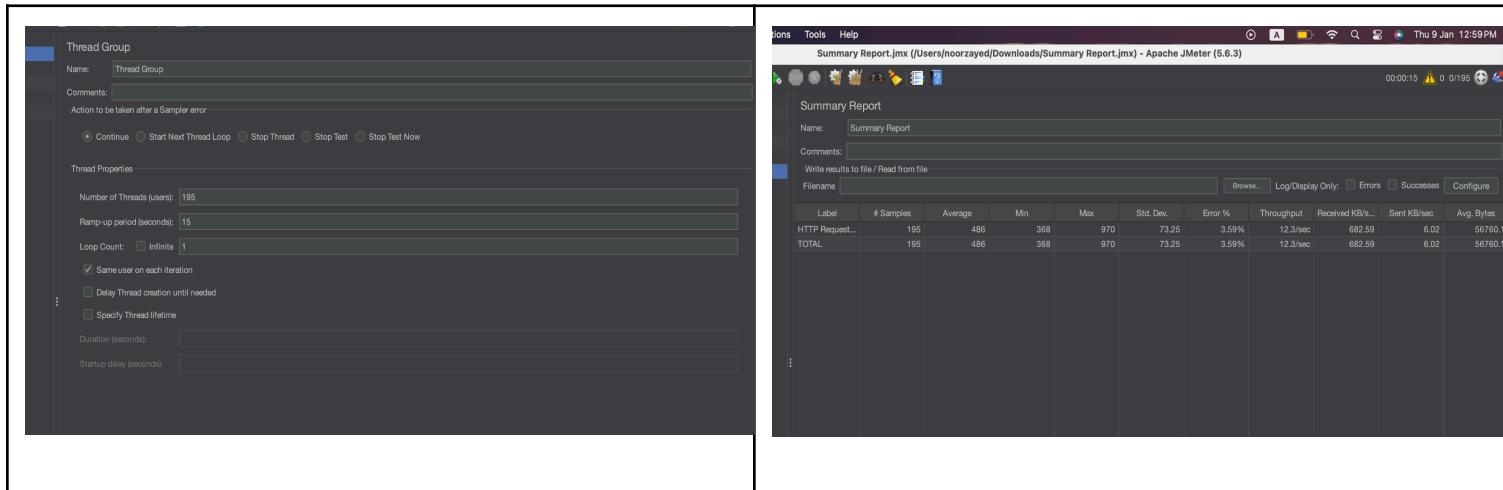
The figure consists of four screenshots of the Apache JMeter application interface, arranged in a 2x2 grid. Each screenshot shows a different part of the test plan configuration.

- Top Left (Test Plan - Thread Group):** Shows the 'Thread Group' configuration with 180 threads over 15 seconds. It includes options like 'Same user on each iteration' and 'Specify Thread Lifetime'.
- Top Right (Test Plan - HTTP Request login):** Shows the 'HTTP Request' configuration for the login scenario. It specifies the protocol (http), path (/checkpoint/login-in-another-account?fromLogin=true&mk-guest), and content type (text/plain). Parameters include 'username' (noe1234) and 'password' (noe1234).
- Bottom Left (Test Plan - Summary Report):** Shows the 'Summary Report' configuration, which is part of the overall test plan structure.
- Bottom Right (Test Plan - HTTP Header Manager):** Shows the 'HTTP Header Manager' configuration, which includes headers for User-Agent, Accept, Accept-Language, and Content-Type.

- Outcome:** All login requests were processed successfully without errors.

- **Observations:** The system handled the load effectively, and the response time remained within acceptable limits.

2. Load Testing at 195 Users (15 Seconds):

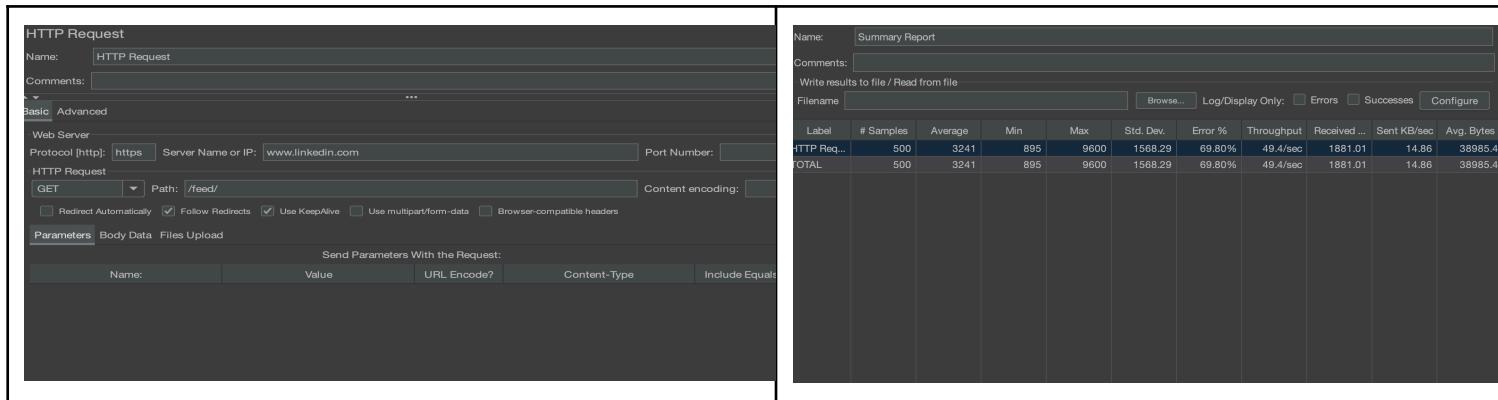


- **Outcome:** A few login requests failed with errors (Response code: 429 - Too Many Requests).
- **Observations:** The server started rejecting requests, indicating it reached its resource threshold or rate-limiting mechanism.

so, as the result shows in figures ,The system handled 180 users smoothly with stable performance. However, adding more users (195) led to a 3.59% error rate due to rate-limiting.

LinkedIn login works well for up to 180 users but struggles beyond that, likely due to system or security limits.

2) Simulate 500 concurrent users' open feed page(home page) in 15 sec.



The stress performance test for the `/feed` page with 500 users in 1 second showed an average response time of **1568.29 ms** and a throughput of **49.41 requests/second**, with a low error rate of **0.698%**. However, occasional bottlenecks resulted in a maximum response time of **9600 ms**.

Results and Analysis

Summary of Findings

- Functional testing identified minor bugs in profile updates.
- Automated tests enhanced testing efficiency and uncovered UI inconsistencies.
- Performance tests validated scalability but highlighted limitations with higher user loads.

Results

- All functional test cases executed successfully, uncovering minor defects in profile management workflows.
- Automated tests confirmed the accuracy of frequently used features.

Challenges and Solutions

Challenges Faced:

- Limited access to production-like data for testing.
- API rate limits impacting load testing.

Solutions:

- Used staging environments mimicking production to validate test cases.
- Aligned load scenarios with server rate limits.

Conclusion:

This project has taught us the importance of systematic testing for software quality. By applying both manual and automated approaches, our team identified some important areas to be improved while validating the core functionalities of LinkedIn. This experience provided invaluable insights into real-world QA practices, reinforcing the critical role that quality assurance plays in software development.