National University of Computer and Emerging Sciences Chiniot-Faisalabad Campus



**metabase**

Software Quality Engineering

### Semester Project

### Phase 2

### BS (SE) 5A

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# **Automation Test Cases of API: -**

## Test Case 1: Authentication Test

package api;

import org.junit.After;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import org.apache.http.HttpResponse;

import org.apache.http.client.methods.HttpGet;

import org.apache.http.impl.client.CloseableHttpClient;

import org.apache.http.impl.client.HttpClients;

import org.apache.http.util.EntityUtils;

import java.io.IOException;

public class AuthenticationAPITest {

CloseableHttpClient httpClient;

@Before

public void setup() {

httpClient = HttpClients.createDefault();

}

@Test

public void testAuthenticationAPI() throws IOException {

String authToken = "valid\_authentication\_token";

String apiUrl = "api\_endpoint\_url";

HttpGet request = new HttpGet(apiUrl);

request.addHeader("Authorization", "Bearer " + authToken);

HttpResponse response = httpClient.execute(request);

int statusCode = response.getStatusLine().getStatusCode();

Assert.assertEquals(200, statusCode);

String responseBody = EntityUtils.toString(response.getEntity());

boolean isAuthenticated = responseBody.contains("authenticated");

Assert.assertTrue("API request is authenticated", isAuthenticated);

}

@After

public void tearDown() throws IOException {

if (httpClient != null) {

httpClient.close();

}

}

}

## Test Case 2: Invalid Token Handling

package api;

import org.junit.After;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import org.apache.http.HttpResponse;

import org.apache.http.client.methods.HttpGet;

import org.apache.http.impl.client.CloseableHttpClient;

import org.apache.http.impl.client.HttpClients;

import org.apache.http.util.EntityUtils;

import java.io.IOException;

public class InvalidTokenHandlingTest {

CloseableHttpClient httpClient;

@Before

public void setup() {

httpClient = HttpClients.createDefault();

}

@Test

public void testInvalidTokenHandling() throws IOException {

String invalidToken = "invalid\_authentication\_token";

String apiUrl = "api\_endpoint\_url";

HttpGet request = new HttpGet(apiUrl);

request.addHeader("Authorization", "Bearer " + invalidToken);

HttpResponse response = httpClient.execute(request);

int statusCode = response.getStatusLine().getStatusCode();

Assert.assertTrue("API responds with an error status code for invalid token", statusCode == 401 || statusCode == 403);

String responseBody = EntityUtils.toString(response.getEntity());

boolean isRejectedDueToInvalidToken = responseBody.contains("invalid\_token\_error\_message");

Assert.assertTrue("API request is rejected due to invalid token", isRejectedDueToInvalidToken);

}

@After

public void tearDown() throws IOException {

if (httpClient != null) {

httpClient.close();

}

}

}

## Test Case 3: Report Format Selection

package api;

import org.junit.After;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import org.apache.http.HttpResponse;

import org.apache.http.client.methods.HttpPost;

import org.apache.http.entity.ContentType;

import org.apache.http.entity.StringEntity;

import org.apache.http.impl.client.CloseableHttpClient;

import org.apache.http.impl.client.HttpClients;

import java.io.IOException;

public class ReportFormatSelectionTest {

CloseableHttpClient httpClient;

@Before

public void setup() {

httpClient = HttpClients.createDefault();

}

@Test

public void testReportFormatSelection() throws IOException {

String apiUrl = "api\_endpoint\_url";

HttpPost request = new HttpPost(apiUrl);

request.addHeader("Content-Type", "application/json");

String formatSelection = "PDF"; // Change this based on the desired format

StringEntity requestBody = new StringEntity("{\"format\": \"" + formatSelection + "\"}",

ContentType.APPLICATION\_JSON);

request.setEntity(requestBody);

HttpResponse response = httpClient.execute(request);

int statusCode = response.getStatusLine().getStatusCode();

Assert.assertEquals("API responds with success status code", 200, statusCode);

String contentType = response.getFirstHeader("Content-Type").getValue();

Assert.assertTrue("API responds with the chosen report format", contentType.contains(formatSelection));

}

@After

public void tearDown() throws IOException {

if (httpClient != null) {

httpClient.close();

}

}

}

## Test Case 4: Data Range Selection

package api;

import org.junit.After;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import org.apache.http.HttpResponse;

import org.apache.http.client.methods.HttpPost;

import org.apache.http.entity.ContentType;

import org.apache.http.entity.StringEntity;

import org.apache.http.impl.client.CloseableHttpClient;

import org.apache.http.impl.client.HttpClients;

import java.io.IOException;

public class DataRangeSelectionTest {

CloseableHttpClient httpClient;

@Before

public void setup() {

httpClient = HttpClients.createDefault();

}

@Test

public void testDataRangeSelection() throws IOException {

String apiUrl = "api\_endpoint\_url";

String startDate = "2023-01-01";

String endDate = "2023-12-31";

String dateRange = "{\"startDate\": \"" + startDate + "\", \"endDate\": \"" + endDate + "\"}";

HttpPost request = new HttpPost(apiUrl);

request.addHeader("Content-Type", "application/json");

StringEntity requestBody = new StringEntity(dateRange, ContentType.APPLICATION\_JSON);

request.setEntity(requestBody);

HttpResponse response = httpClient.execute(request);

int statusCode = response.getStatusLine().getStatusCode();

Assert.assertEquals("API responds with success status code", 200, statusCode);

}

@After

public void tearDown() throws IOException {

if (httpClient != null) {

httpClient.close();

}

}

}

## Test Case 5: Data Filters

package api;

import org.junit.After;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import org.apache.http.HttpResponse;

import org.apache.http.client.methods.HttpPost;

import org.apache.http.entity.ContentType;

import org.apache.http.entity.StringEntity;

import org.apache.http.impl.client.CloseableHttpClient;

import org.apache.http.impl.client.HttpClients;

import java.io.IOException;

public class DataFiltersTest {

CloseableHttpClient httpClient;

@Before

public void setup() {

httpClient = HttpClients.createDefault();

}

@Test

public void testDataFilters() throws IOException {

String apiUrl = "api\_endpoint\_url";

String categoryFilter = "Sales";

String regionFilter = "North";

String filters = "{\"category\": \"" + categoryFilter + "\", \"region\": \"" + regionFilter + "\"}";

HttpPost request = new HttpPost(apiUrl);

request.addHeader("Content-Type", "application/json");

StringEntity requestBody = new StringEntity(filters, ContentType.APPLICATION\_JSON);

request.setEntity(requestBody);

HttpResponse response = httpClient.execute(request);

int statusCode = response.getStatusLine().getStatusCode();

Assert.assertEquals("API responds with success status code", 200, statusCode);

}

@After

public void tearDown() throws IOException {

if (httpClient != null) {

httpClient.close();

}

}

}