



SWE 4604

Software Testing and Quality Assurance Lab

Lab 5

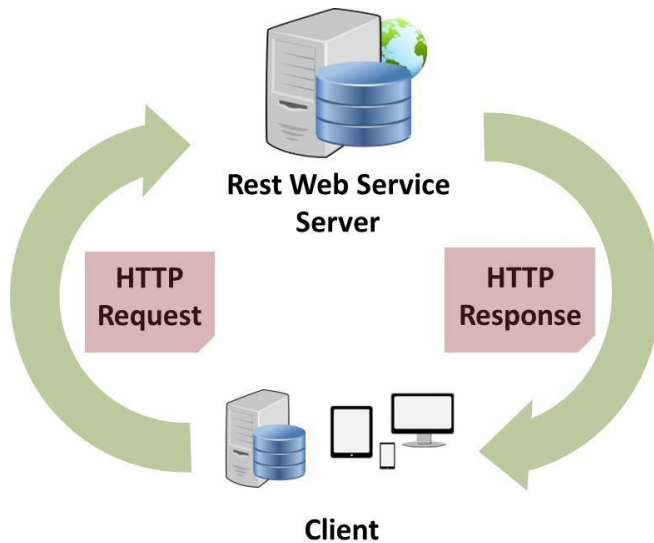
Prepared By Maliha Noushin Raida, Lecturer, CSE
Islamic University of Technology

API Testing

API testing is a type of [software testing](#) that involves testing [application programming interfaces](#) (APIs) directly to determine if they meet expectations for functionality, reliability, performance, and security

RESTful API

A RESTful API is an architectural style for an application program interface ([API](#)) that uses HTTP requests to access and use data.



RESTful API

- Representational state transfer
- A RESTful API uses commands to obtain resources.
- The state of a resource at any given timestamp is called a resource representation.
- A RESTful API uses existing HTTP methodologies defined by the RFC 2616 protocol, such as:
 - **GET** to retrieve a resource
 - **PUT** to change the state of or update a resource, which can be an object, file or block
 - **POST** to create that resource
 - **DELETE** to remove it.

Common Type of Test cases in API Testing

- Verify API doesn't return any response.
- Verify whether API response codes are as desired
- Based on input request, return request should be checked.
- Verification of the API whether it triggers some other event or calls another API
- Verification of the API whether it is updating any data structure
- Delayed in API response
- Response Data not structured
- Difficulty in connecting and getting response from API

POSTMAN Tool for API Testing

- comprehensive set of built-in tools support every stage of the API lifecycle
- individuals and teams can easily maintain and test.
- can design and mock, debug, test, document, monitor, and publish your APIs from the Postman UI.

Features

- [Workspaces](#) - allow team collaboration during software development
- [Request](#) - Connects to APIs
- [Collections](#) - series of HTTP requests organized by purpose
- [Environments](#) - allow for storage and protection of private information
- [Test Scripts](#) - write and run tests for each request using JavaScript.
- [Variables](#) - allow you to reference locally stored data without compromising sensitive information.

Free APIs to use

- [Reqres - A hosted REST-API ready to respond to your AJAX requests](#)
- [JSONPlaceholder - Free Fake REST API \(typicode.com\)](#)
- [AnyAPI \(any-api.com\)](#)
- [Public REST APIs \(getpostman.com\)](#)