Automated Testing Standard

Introduction

State employees, agencies and external partners have an ever-increasing need for testing web-based applications and websites for errors, broken links and security risks. OMES is committed to solving these issues using automated software that would relieve users of repetitive tasks while also testing the integrity and working functionality of the websites and web applications.

Purpose

This document establishes the requirements and procedures for the quality assurance division of OMES.

Definitions

API – application programming interface.

REST API (RESTful API or RESTful web service) – a software architectural style for an application program interface that uses HTTP requests to access and use data. REST is a widely accepted set of guidelines for creating stateless, reliable web APIs.

Mobile device – a portable computing device that has a small form factor such that it can easily be carried by a single individual; is designed to operate without a physical connection (e.g. wirelessly transmit or receive information); possesses local, non-removable data storage; and includes a self-contained power source. Mobile devices may also include voice communication capabilities, on-board sensors that allow the devices to capture information or built-in features that synchronize local data with remote locations. Examples include smartphones, tablets and e-readers.

User interface (UI) – how the user and a computer system interact.

Performance testing – a non-functional software testing technique that determines how the stability, speed, scalability and responsiveness of an application performs under a given workload.

Standard

The automated tools approved for application testing are listed below:

- User interface.
  - Katalon Studio.
  - Katalon Recorder.
  - SauceLabs.
  - Selenium WebDriver.
  - Selenium IDE.
- Mobile device testing.
  - Katalon Studio.
  - SauceLabs.
- REST API.
  - Katalon Studio.
  - Postman.
  - Swagger.

    - Advanced REST Client by Mulesoft.
- Performance testing (load, stress, value).
    - Apache JMeter.
    - Azure Load Testing.
    - BlazeMeter Chrome Extension.
    - Locust ver. 2.33.0.
- IDE.
    - Eclipse.
    - IntelliJ (Java JDK).
    - Java SDK.
    - Maven.
    - Python.
    - PyTest.
- Container orchestration
    - Docker ver. 24.0.
    - Kubernetes ver. 1.28.0.
- Cross-platform tools/environments.
    - Appium ver. 2.0.
    - Node.js ver. 18.17.0.
    - Playwright ver. 1.50.0.
- Optical Character Recognition
    - Tesseract ver. 5.5.0.

Compliance

This standard shall take effect upon publication and is made pursuant to Title 62 O.S. §§ 34.11.1 and 34.12 and Title 62 O.S. § 35.8. OMES IS may amend and publish the amended standards policies and standards at any time. Compliance is expected with all published policies and standards, and any published amendments thereof. Employees found in violation of this standard may be subject to disciplinary action, up to and including termination.

Rationale

To coordinate and require central approval of state agency information technology purchases and projects to enable the chief information officer to assess the needs and capabilities of state agencies as well as streamline and consolidate systems to ensure that the state delivers essential public services to its citizens in the most efficient manner at the lowest possible cost to taxpayers.

Revision history

This standard is subject to periodic review to ensure relevancy.

Effective date: 12/14/2022	**Review cycle:** Annual
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Approved by: Dan Cronin, Chief Information Officer	