**Test Plan for Build Report Application**

**Objective**

The objective of this test plan is to validate the functionality, performance, and accuracy of the **Build Report Application**. This includes verifying data processing for unique customer counts, average build duration, and customer lists, adhering to requirements provided.

**Scope**

The application processes a multiline string and produces a report with:

1. Unique customer IDs for each contract ID.
2. Unique customer IDs for each geozone.
3. Average build duration for each geozone.
4. List of unique customer IDs for each geozone.

The solution will be tested for correctness, edge cases, and robustness of the REST API.

**Test Environment**

* **Programming Language**: Java
* **Framework**: Java and TestNG for automated testing
* **Tools**: Postman (manual testing), TestNG
* **OS**: Windows/Linux/MacOS

**Testing Approach**

* **Functional Testing**: To ensure the application processes data correctly and returns expected results for each endpoint.
* **Integration Testing**: Validate interactions between the controller and service layers.
* **Performance Testing**: Ensure acceptable response times for large data inputs.
* **Error and Exception Handling**: Test robustness in handling invalid inputs or missing data.
* **Boundary Testing**: Validate behaviour with boundary values (e.g., minimum or maximum customer and geozone IDs).

**Roles and Responsibilities**

* **Test Engineer**: Responsible for creating, executing, and managing test cases.
* **Developer**: Responsible for addressing and fixing identified bugs.

**Entry Criteria**

* Application is deployed and accessible at http://localhost:8080/api/report
* REST API endpoints are functional.

**Exit Criteria**

* All high-priority and critical test cases are passed.
* No open high-severity defects.

**Test Schedule(Example values)**

* **Preparation**: 2 days
* **Execution**: 3 days
* **Reporting**: 1 day