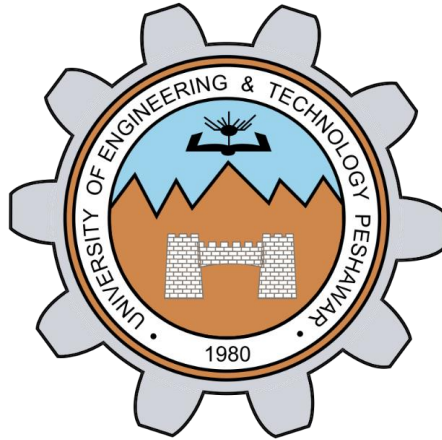


UNIVERSITY OF ENGINEERING AND TECHNOLOGY,  
PESHAWAR PAKISTAN

*Main Campus*



**Software Engineering**

**Lab Task 07**

**Submitted By**

|                         |                             |
|-------------------------|-----------------------------|
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| <b>Semester:</b>        | <b>BS CS 5<sup>th</sup></b> |
| <b>Section:</b>         | <b>A</b>                    |

**Submitted To : Miss Kanwal**

**DEPARTMENT OF COMPUTER SCIENCE & IT**

UNIVERSITY OF ENGINEERING AND TECHNOLOGY, PESHAWAR, PAKISTAN

# 1. Domain Model Table

## 1. User

| Attributes             | Operations         |
|------------------------|--------------------|
| userId                 | login()            |
| name                   | selectWebsite()    |
| email                  | chooseImpairment() |
| role (developer/admin) | startSimulation()  |

## 2. SimulationManager

| Attributes         | Operations                 |
|--------------------|----------------------------|
| simulationId       | applyVisualImpairment()    |
| selectedImpairment | applyMotorImpairment()     |
| severityLevel      | applyCognitiveImpairment() |
| status             | stopSimulation()           |

## 3. ImpairmentProfile

| Attributes                              | Operations       |
|---|------------------|
| impairmentId                            | loadProfile()    |
| impairmentType (visual/motor/cognitive) | adjustSeverity() |
| severityLevel                           | saveProfile()    |
| filterSettings                          | resetProfile()   |

4. WebsiteLoader

| Attributes  | Operations    |
|-------------|---------------|
| targetURL   | loadWebsite() |
| iframeId    | refreshPage() |
| loadStatus  | sanitizeURL() |
| sandboxMode | validateURL() |

5. WCAGAnalyzer

| Attributes      | Operations             |
|-----------------|------------------------|
| ruleSet         | runAnalysis()          |
| issueList       | detectContrastIssues() |
| complianceScore | detectAltTextIssues()  |
| scanTimestamp   | exportFindings()       |

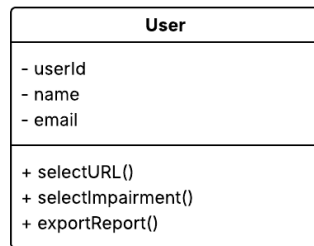
6. ReportGenerator

| Attributes   | Operations             |
|--------------|------------------------|
| reportId     | generatePDF()          |
| reportData   | generateCSV()          |
| summary      | addSimulationDetails() |
| exportFormat | exportReport()         |

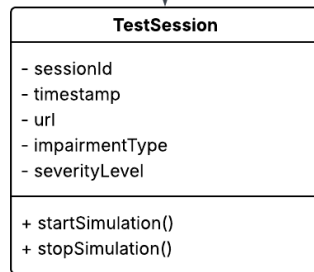
## 7. Session

| Attributes   | Operations      |
|--------------|-----------------|
| sessionId    | startSession()  |
| userId       | endSession()    |
| simulationId | trackActivity() |
| timestamp    | saveSession()   |

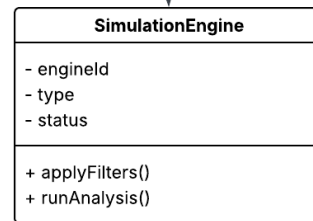
## System Design (Domain Modeling + Class Diagram)



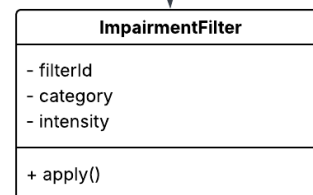
1..\* selects



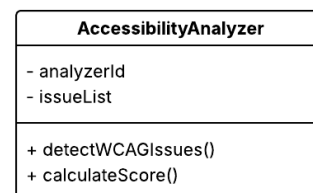
1..1 uses



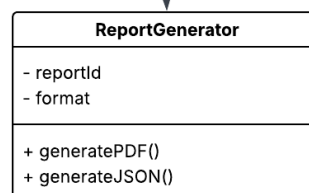
1..\*



v



1..1 generates



My class diagram models the system by showing how the User interacts with the Simulator to test accessibility impairments. The Website class holds URL and content details. The SimulationEngine applies visual, motor, and cognitive filters. The Report class processes detected issues and exports results. All classes work together to provide an accessibility testing workflow.