**Step 1: Create**HighStressOutdoorContext**Instance**

1. **Open Protégé** → Load your ontology.
2. Go to the **Individuals** tab.
3. Click the **+** button to create a new individual.
   * **Name**: HighStressOutdoorContext.
4. **Assign to Class**:
   * In the **Class Assertions** section (right panel), click **+**.
   * Select EnvironmentalContext (under Context hierarchy).
5. **Add Annotation (Optional)**:
   * In the **Annotations** section, add a comment:
     + Property: rdfs:comment.
     + Value: "Interfaces used in high-stress outdoor environments (e.g., emergency vehicles, construction sites).".

**Step 2: Create**OutdoorWCAGCompliance**Instance**

1. In the **Individuals** tab, click **+** to create a new individual.
   * **Name**: OutdoorWCAGCompliance.
2. **Assign to Class**:
   * In the **Class Assertions** section, click **+**.
   * Select WCAGComplianceMetric (under EvaluationMetric hierarchy).
3. **Add Annotation (Optional)**:
   * Property: rdfs:comment.
   * Value: "WCAG compliance standards tailored for outdoor environments.".

**Step 3: Link**OutdoorWCAGCompliance**to**HighStressOutdoorContext

1. **Create/Use Object Property**:
   * Go to the **Object Properties** tab.
   * If the property appliesToEnvironment doesn’t exist:
     + Click **+** → Name: appliesToEnvironment.
     + **Domain**: OutdoorWCAGCompliance.
     + **Range**: HighStressOutdoorContext.
2. **Assert Relationship**:
   * In the **Individuals** tab → Select OutdoorWCAGCompliance.
   * In the **Object Property Assertions** section, click **+**.
   * Property: appliesToEnvironment.
   * Target: HighStressOutdoorContext.

**Step 4: Add Data Property for Contrast Ratio**

1. **Create Data Property** (if missing):
   * Go to the **Data Properties** tab.
   * Click **+** → Name: hasMinimumContrast.
   * **Domain**: OutdoorWCAGCompliance.
   * **Range**: xsd:string.
2. **Assign Value**:
   * In the **Individuals** tab → Select OutdoorWCAGCompliance.
   * In the **Data Property Assertions** section, click **+**.
   * Property: hasMinimumContrast.
   * Value: "7:1" (or your desired ratio).

**Step 5: Validate with Reasoner**

1. **Run Reasoner**:
   * Go to **Reasoner** → Select HermiT or Pellet → Click **Start Reasoner**.
2. **Check Consistency**:
   * If HighStressOutdoorContext or OutdoorWCAGCompliance turns **red**, fix the flagged issues (e.g., missing domain/range).

**Step 6: Test with SPARQL**

sparql

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PREFIX : <http://www.semanticweb.org/asifcomputer/ontology/2025/ui\_ux\_automation#>

SELECT ?compliance ?ratio ?context

WHERE {

?compliance a :OutdoorWCAGCompliance ;

:hasMinimumContrast ?ratio ;

:appliesToEnvironment ?context .

?context a :HighStressOutdoorContext .

}

**Expected Result**:

| **compliance** | **ratio** | **context** |
| --- | --- | --- |
| :OutdoorWCAGCompliance | "7:1" | :HighStressOutdoorContext |

**Final Ontology Snippet**

turtle

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:HighStressOutdoorContext a :EnvironmentalContext ;

rdfs:comment "Interfaces used in high-stress outdoor environments (e.g., emergency vehicles, construction sites)." .

:OutdoorWCAGCompliance a :WCAGComplianceMetric ;

rdfs:comment "WCAG compliance standards tailored for outdoor environments." ;

:hasMinimumContrast "7:1" ;

:appliesToEnvironment :HighStressOutdoorContext .