Exercise

Role-based Access Control
Goals

• Learn and apply languages for role-based access control modelling
• Understand the limitations of these languages
Consider the Following Scenario

(slide 1)

The football game report is started before the match, continued during the match, and finalised once the match is over. The new report is created by the league secretary, who is employed by the Football Federation. The league secretary fills in initial information such as league name, his own contact data, region, division, and game numbers as well as the names of the competing teams. Once done, the league secretary informs the team representatives, so that they could provide the team composition for the game, including player names and their registration numbers. The team composition should be provided no later than 2 h before the game.
Consider the Following Scenario

(slide 2)

During the match the game report needs to be maintained by the umpire, who needs to register the scored goals and “given” cards. The umpire is also responsible for filling in the match results, including the scores (including final, full time, extra time and penalties). After the match, the umpire needs to invite the team representatives to sign the report and (optionally) provide comments. Once signatures from the team representatives are received, the umpire himself comments and signs the report. After the game the report is sent to the league secretary for confirmation.
# WOLFS FOOTBALL LEAGUE MATCH REPORT FORM

League Secretary  
CALEX KARUUANA  
20 STREET ALLEA  
CITY

Each team representative is to sign this form and ensure that all details are correct and that all players are registered with the ERIS system.

<table>
<thead>
<tr>
<th>LEAGUE NAME</th>
<th>WOLFS</th>
<th>DIVISION</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGION</td>
<td>AA</td>
<td>GAME</td>
<td>45</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOME TEAM NAME</th>
<th>FULL NAME</th>
<th>GOALS</th>
<th>AWAY TEAM NAME</th>
<th>FULL NAME</th>
<th>GOALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Rabbits</td>
<td>John [1]</td>
<td>1</td>
<td>Orange Carrots</td>
<td>Joseph</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Peter [2]</td>
<td>YY-&gt;R</td>
<td>Boris</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arnold [3]</td>
<td>Y</td>
<td>Pran</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Davy [4]</td>
<td>5</td>
<td>Ferdinand</td>
<td>10</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>King [6]</td>
<td>7</td>
<td>Svetoslav</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Anupras [8]</td>
<td>10</td>
<td>Matheus</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Full time score</th>
<th>Extra time score</th>
<th>Penalties</th>
<th>Full time score</th>
<th>Extra time score</th>
<th>Penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>

Signature of Home Team Representative  
SignedIt  
HomeSignedIt

Signature of Away Team Representative  
Yes

I am satisfied with my opponents registration/performance (Please indicate YES or NO above)

<table>
<thead>
<tr>
<th>Home Team Caution</th>
<th>Away Team Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO problem, everything is OK</td>
<td>NO problem, everything is OK</td>
</tr>
</tbody>
</table>

Unipire Name  
Billy-Goat the Beard

Referee signature  
BilGoalB

No comments

Confirmation by league secretary  
Confirmed

Umpire Comment  
Not-confirmed

Confirmation date  
2020.02.20
Task 2

• Define the UMLsec model representing the role-based access control policy regarding the gathered and registered data
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• Define the **UMLsec** model representing the role-based access control policy regarding the gathered and registered data

**To guide your solution, consider**

• What are the objects?
• What are their operations?
• What are the roles?
• What are the role’s rights?
• What are the associated tags?
• Who are the users?
Task 2

- Define the **UMLsec** model representing the role-based access control policy regarding the gathered and registered data.

To guide your solution, consider:
- What are the objects?
- What are their operations?
- What are the roles?
- What are the role’s rights?
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- Who are the users?

\[
\begin{align*}
\text{protected} &= \text{protected_action} \\
\text{role} &= \text{(actor, role)} \\
\text{right} &= \text{(role, protected_action)}
\end{align*}
\]