

System

Name: QRS 2025

Entities:

- Name: RobotExecEnvironment
- Name: RobotUT

Attributes:

- Name: where
Type: ENUM
Values:
 - begin
 - mid
 - end
- Name: orientation
Type: ENUM
Values:
 - left
 - mid
 - right

- Name: Obstacle

Sub Entities:

- FixedObstacle
- MovingObstacle

Attributes:

- Name: where
Type: ENUM
Values:
 - begin
 - mid
 - end
- Name: orientation
Type: ENUM
Values:
 - left
 - mid
 - right

- Name: FixedObstacle

Super Entity: Obstacle

Attributes:

- Name: type
Type: ENUM
Values:

- small
 - big
- Name: MovingObstacle
 - Super Entity: Obstacle
 - Attributes:
 - Name: type
 - Type: ENUM
 - Values:
 - person
 - robot
 - Name: behavior
 - Type: ENUM
 - Values:
 - LR
 - FB
- Name: Edge
 - Attributes:
 - Name: edge
 - Type: ENUM
 - Values:
 - e1
 - e2
 - e3
 - e4
- Name: EdgeP
 - Attributes:
 - Name: edge
 - Type: ENUM
 - Values:
 - e1
 - e2
 - e3
 - e4
- Name: EnvParameter
 - Attributes:
 - Name: light
 - Type: ENUM
 - Values:
 - dark
 - medium
 - normal

- Name: slippery
Type: BOOL
- Name: EnvParameterP
Attributes:
 - Name: light
Type: ENUM
Values:
 - dark
 - medium
 - normal
 - Name: slippery
Type: BOOL

Relations:

- Name: has_SUT
Entities: RobotExecEnvironment:RobotUT
Cardinality: 1:1
- Name: has
Entities: RobotExecEnvironment:Obstacle
Cardinality: 0:4
- Name: is_located_at
Entities: Obstacle:Edge
Cardinality: 1:1
- Name: has_property
Entities: Edge:EnvParameter
Cardinality: 1:1
- Name: is_located_at_P
Entities: RobotUT:EdgeP
Cardinality: 1:1
- Name: has_property_P
Entities: EdgeP:EnvParameterP
Cardinality: 1:1

Constraints:

- Name: constr
Expression: (Edge_edge != MovingObstacle_type &&
(FixedObstacle_type == FixedObstacle_type ||
EnvParameterP_slippery != EnvParameter_slippery))