Level 4

Catalysts

Now it is time for your program to take control over the rover! The task for this level is to

1) connect to the Mars Rover Simulator - REST Service rover.catalysts.cc

2) drive the rover 100 meters in any direction and back to the starting position

Mars Rover Simulator API description:

Create rover on simulator: /rover/create?map=<map>&username=<userName>&contestId=<contestId>

Input parameters:

map = input from CatCoder

username = your CatCoder user name

contestId = cluj | linz | remote

returns: UUID = id to communicate stateless with the rover simulator

Get rover specification: /rover/$UUID

returns: wheelBase maxSteeringAngle targetX targetY targetRadius

wheelBase = wheel base of the rover

maxSteeringAngle = maximum steering angle of the rover

targetX, targetY = the target position described relative to your actual position (0/0)

targetRadius = the rover does not need to hit the goal exactly. As soon as the distance to goal is below the targetRadius, the rover reached its goal.

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Move rover: /rover/move/$UUID?distance=$DISTANCE&steeringAngle=$STEERINGANGLE
distance = the distance the rover should move, positive for moving forward, negative for moving backward
steeringAngle = the steering angle; -maxSteeringAngle <= steeringAngle <= +maxSteeringAngle

returns:
OK distance x y angle
distance = the distance that the rover moved
x, y, angle = current position and direction of the rover

ERROR „rover crashed“

PASS passKey totalDistance
passkey = pass key to be entered in CatCoder to finish the level

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Example communication via http (you can easily test with your browser):

rover.catalysts.cc/rover/create?map=L4_MFJS3487&username=cf1&contestId=linz

29ba9060-95af-4cbb-947d-7c0b21cbf4f2

rover.catalysts.cc/rover/29ba9060-95af-4cbb-947d-7c0b21cbf4f2

3.60 14.00 0.00 0.00 3.00 // wheelBase = 3.60; maxSteeringAngle = 14.00
// targetX = 0.00 targetY= 0.00 targetRadius=3.00

rover.catalysts.cc/rover/move/29ba9060-95af-4cbb-947d-7c0b21cbf4f2?distance=100&steeringAngle=0

OK 100.00 0.00 100.00 0.00 // distance = 100.00; x = 0.00; y = 100.00; angle = 0.00

rover.catalysts.cc/rover/move/29ba9060-95af-4cbb-947d-7c0b21cbf4f2?distance=-100&steeringAngle=0

PASS L4_1A25X46T46Z44 200.00 // passKey = L4_1A25X46T46Z44; totalDistance=200.00

Enter the passKey in the CatCoder to finish that level.

Level 4 – Client-Side Code

Catalysts

JAVA

```
URL u = new URL ("http://rover.catalysts.cc/rover/create?map=L4_12345&username=coder&contestId=linz");
InputStream is = u.openStream();
BufferedReader reader = new BufferedReader(new InputStreamReader(is));
String result = reader.readLine();
is.close();
```

C#

```
var client = new WebClient { Proxy = null };
var result = client.DownloadString("http://rover.catalysts.cc/rover/create?
      map=L4_12345&username=coder&contestId=linz");
```