**Virtual Initio Programming: WS19 Sample Answers and Trouble Shooting**

**Question:** The program moves forward for 3 seconds, then backwards for 3 seconds, then turns left for 3 seconds, then turns right for 3 seconds and then stops.

**Sample Answer Exercise 1:**

import simclient.simrobot as initio

import time

actions = ['forward', 'backward', 'left', 'right', 'stop']

initio.init()

for action in actions:

if (action == 'forward'):

initio.forward(10)

time.sleep(3)

elif (action == 'backward'):

initio.reverse(10)

time.sleep(3)

elif (action == 'left'):

initio.spinLeft(10)

time.sleep(3)

elif (action == 'right'):

initio.spinRight(10)

time.sleep(3)

else:

initio.stop()

**Sample Answer Exercise 2:**

import simclient.simrobot as initio

import time

actions = ['forward', 3, 'backward', 2, 'left', 1, 'right', 5, 'stop']

initio.init()

act = 1

for el in actions:

if (act == 1):

if (el == 'forward'):

initio.forward(10)

elif (el == 'backward'):

initio.reverse(10)

elif (el == 'left'):

initio.spinLeft(10)

elif (el == 'right'):

initio.spinRight(10)

else:

initio.stop()

act = 0

else:

time.sleep(el)

act = 1

**Sample Answer Exercise 3:**

import simclient.simrobot as initio

import time

initio.init()

initio.forward(10)

readings = []

while (len(readings) < 30):

reading = initio.getDistance()

readings.append(reading)

time.sleep(3)

initio.stop()

for reading in readings:

print(str(reading))

**Sample Answer Exercise 4:**

import simclient.simrobot as initio

import time

actions = ['forward', 'backward', 'left', 'right', 'stop']

initio.init()

initio.forward(10)

while (len(actions) > 0):

for action in actions:

if (action == 'forward'):

initio.forward(10)

time.sleep(3)

elif (action == 'backward'):

initio.reverse(10)

time.sleep(3)

elif (action == 'left'):

initio.spinLeft(10)

time.sleep(3)

elif (action == 'right'):

initio.spinRight(10)

time.sleep(3)

else:

initio.stop()

time.sleep(3)

if (initio.getDistance() < 50):

actions.remove(action)

print("removing " + action)

initio.stop()

**Sample Answer Exercise 5:**

import simclient.simrobot as initio

import time

actions = ['forward', 'backward', 'left', 'right', 'stop']

permitted = ['backward', 'left', 'stop']

initio.init()

for action in actions:

if (action in permitted):

if (action == 'forward'):

initio.forward(10)

time.sleep(3)

elif (action == 'backward'):

initio.reverse(10)

time.sleep(3)

elif (action == 'left'):

initio.spinLeft(10)

time.sleep(3)

elif (action == 'right'):

initio.spinRight(10)

time.sleep(3)

else:

initio.stop()

else:

print(action + " is not permitted")

**Sample Answer Exercise 6:**

import simclient.simrobot as initio

import time

actions = ['forward', 'backward', 'left', 'right', 'stop']

data = []

initio.init()

for action in actions:

before = initio.getDistance()

if (action == 'forward'):

initio.forward(10)

time.sleep(3)

elif (action == 'backward'):

initio.reverse(10)

time.sleep(3)

elif (action == 'left'):

initio.spinLeft(10)

time.sleep(3)

elif (action == 'right'):

initio.spinRight(10)

time.sleep(3)

else:

initio.stop()

time.sleep(3)

after = initio.getDistance();

data.append([action, before, after])

print(data)



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