

SHARING INSPIRATION 2019

THE POWER OF REALIZATION



Teachers Teaching with Technology™

PLAYSTATION 1.1 – ROVER WHEELCHAIR

Define rovergame()=
Prgm

© Initialization

Send "BEGIN"

DelVar iostr.str0

GetStr iostr.str0

©Disp iostr.str0

Send "CONNECT RV"

Send "CONNECT RANGER 1 TO IN 1"

Send "CONNECT RANGER 2 TO IN 2"

© Quiz questions and answers

question={"What is Newton's first name?","Who is considered the “father” of the scientific method?","In which field did Marie Curie and her daughter Irene-Joliot Curie both win the Nobel Prize?","Who developed the theory of evolution?","Who said, “God does not play dice with the universe”","How old is sunlight by the time it reaches Earth?"," Who was the first person to orbit Earth?","What planet is closest to Saturn?","What is the most common element in water?","Who invented the battery?","What kind of sound is too high for humans to hear?","The relative loudness of a sound is measured by"}

answer={"Isaac","Galileo","Chemistry","Charles Darwin","Albert Einstein","8 minutes","Yuri Gagarin","Jupiter","Hydrogen","Alessandro Volta","Ultrasound","Decibel"}

© Vars initialization

glevel=3

© menu start

Lbl menu

© Clear Screen

For n,1,8

Disp " "

EndFor

© Options menu

Disp "1. Calibrate Sensor"

Disp "2. Select Game Level"

Disp "3. Start Game"

Disp "4. Just drive me!"

Disp "5. Leave me alone!"

Disp "6. Exit"

Disp "Choose Option "

© capture key

tecla=getKey(1)

© Execute option

If tecla="1" Then

Text "Calibrate Left Position Press ENTER When Ready"

Send "READ RANGER 1"

Get dl

Text "Calibrate Right Position Press ENTER When Ready"

Send "READ RANGER 1"

Get dr

dmed=((dl+dr)/(2))

Goto menu

ElseIf tecla="2" Then

Request "Game Level (1-3) ",glevel

twait=((3)/(glevel))

Goto menu

```
ElseIf tecla="3" Then
  score=0
  color=9
  d=dmed
```

```
For i,1,30*(4-glevel)
```

```
  Send "READ RV.COLORINPUT.GREEN"
  Get cgreen
  Send "READ RV.COLORINPUT.RED"
  Get cred
  Send "READ RV.COLORINPUT.BLUE"
  Get cblue
```

```
© Finish Line RED
```

```
  If cred>200 Then
    Send "RV STOP "
    Disp "Congratulations, you did it!"
    Send "SET SOUND 392 0.8"
    Wait 0.4
    Send "SET SOUND 392 0.4"
    Wait 0.2
    Send "SET SOUND 392 0.4"
    Wait 0.2
    Send "SET SOUND 1047 1"
    Disp "Your score ",score
    Text "Press ENTER to continue"
    Goto menu
```

```
  EndIf
```

```
  If cgreen>200 Then
```

```
© Penalization if not in track line
```

```
  Disp "Out of track!"
  score=score-3*glevel
  Send "SET SOUND 200 0.5"
  Disp "SCORE",score
```

```
  EndIf
```

```
  If cblue>190 Then
```

```
    Send "RV STOP "
    j=randInt(1,12)
    Disp question[j]
    RequestStr "",playeranswer
    If playeranswer=answer[j] Then
      Send "SET SOUND 392 0.4"
      Wait 0.2
      Send "SET SOUND 1047 1"
      score=score+8*glevel
      Text "Correct! Your score will be increased!"
      Send "RV FORWARD TIME 1"
```

```

© Wait cycle
Send "READ RV.WAYPOINT.CMDNUM"
  Get m
  n=m
  While n=m
    Send "READ RV.WAYPOINT.CMDNUM"
    Get n
  EndWhile
  Cycle
Else
  Text "Wrong answer. You have to pay your mistake with points... Sorry!"
  score=score-6*glevel
  Send "SET SOUND 200 0.5"
  Send "RV FORWARD TIME 0.5"
© Wait cycle
Send "READ RV.WAYPOINT.CMDNUM"
  Get m
  n=m
  While n=m
    Send "READ RV.WAYPOINT.CMDNUM"
    Get n
  EndWhile
  Cycle
EndIf
EndIf
  If cgreen<200 Then
    © Score count
    score=score+5*(4-glevel)
    Disp "Score = ",score
  EndIf

Send "RV FORWARD TIME 120"
Send "READ RANGER 1"
Get d
Send "READ RV.RANGER"
Get dobs
If dobs<0.1 Then
  Send "RV STOP "
  Send "RV BACKWARD DISTANCE 0.10 M"
  © Wait cycle
  Send "READ RV.WAYPOINT.CMDNUM"
  Get m
  n=m
  While n=m
    Send "READ RV.WAYPOINT.CMDNUM"
    Get n
  EndWhile
  Cycle
EndIf

```

```

If d<dmed-((dl-dr)/(3)) Then
  Send "RV STOP "
  © turn right
  Send "RV RIGHT 30"
  © Wait cycle
  Send "READ RV.WAYPOINT.CMDNUM"
  Get m
  n=m
  While n=m
    Send "READ RV.WAYPOINT.CMDNUM"
    Get n
  EndWhile
  Cycle
EndIf
If d>dmed+((dl-dr)/(3)) Then
  Send "RV STOP "
  © Turn left
  Send "RV LEFT 30"
  © Wait cycle
  Send "READ RV.WAYPOINT.CMDNUM"
  Get m
  n=m
  While n=m
    Send "READ RV.WAYPOINT.CMDNUM"
    Get n
  EndWhile
  Cycle
EndIf

```

EndFor

- © Send "RV STOP "
- © Text "Thank's for driving me!"
- © Goto menu

© If didn't reach finish line

```

Send "RV STOP "
Send "SET SOUND 440 0.5"
Wait 0.2
Send "SET SOUND 220 0.5"
Text "You didn't finish... Maybe next time?"

```

Press ENTER to continue."

Goto menu

ElseIf tecla="4" Then

For i,1,100

Send "RV FORWARD TIME 120"

Send "READ RANGER 1"

Get d

Send "READ RV.RANGER"

Get dobs

If dobs<0.1 Then

Send "RV STOP "

Send "RV BACKWARD DISTANCE 0.10 M"

© Wait cycle

Send "READ RV.WAYPOINT.CMDNUM"

Get m

n=m

While n=m

Send "READ RV.WAYPOINT.CMDNUM"

Get n

EndWhile

Cycle

EndIf

If d<dmed-((dl-dr)/(3)) Then

Send "RV STOP "

© turn right

Send "RV RIGHT 30"

© Wait cycle

Send "READ RV.WAYPOINT.CMDNUM"

Get m

n=m

While n=m

Send "READ RV.WAYPOINT.CMDNUM"

Get n

EndWhile

Cycle

EndIf

If d>dmed+((dl-dr)/(3)) Then

Send "RV STOP "

© Turn left

Send "RV LEFT 30"

© Wait cycle

Send "READ RV.WAYPOINT.CMDNUM"

Get m

n=m

While n=m

Send "READ RV.WAYPOINT.CMDNUM"

```

    Get n
    EndWhile
    Cycle
    EndIf
    EndFor
Send "RV STOP "
Text "Thank's for driving me!"
Goto menu

```

```

ElseIf tecla="5" Then
    Text "Disconnect all drive sensors and connect step sensors at IN 1 and IN 2"

```

```

Send "READ RANGER 1"
Get dfloor1
Send "READ RANGER 2"
Get dfloor2
dfloor=((dfloor1+dfloor2)/(2))
Loop
    Send "RV FORWARD TIME 600"
    Send "READ RV.RANGER"
    Get dobs
    Send "READ RV.COLORINPUT.BLUE"
    Get cblue
    Send "READ RANGER 1"
    Get dstep1
    Send "READ RANGER 2"
    Get dstep2
    If dstep1<0.5*dfloor or dstep2<0.5*dfloor or dobs<0.05 Then
        Send "RV STOP "
        Text "I want to play more!"
        Exit
    EndIf
    If dobs<0.3 Then
        Send "RV STOP "
        Disp "COLISION SENSOR!"
        Send "SET SOUND 1200 0.5"
        Send "SET RV.COLOR 255 0 0 TIME 0.5"
        Send "RV BACKWARD DISTANCE 0.1 M"
        Send "RV RIGHT "
    © Wait cycle
        Send "READ RV.WAYPOINT.COMDNUM"
        Get m
        n=m
        While n=m
            Send "READ RV.WAYPOINT.COMDNUM"
            Get n
        EndWhile
    Cycle

```

```

EndIf
If cblue>150 Then
  Send "RV STOP "
  Disp "FENCE!"
  Send "SET SOUND 1000 0.5"
  Send "SET RV.COLOR 0 255 0 TIME 0.5"
  Send "RV BACKWARD DISTANCE 0.15 M"
  Send "RV RIGHT "
© Wait cycle
  Send "READ RV.WAYPOINT.CMDNUM"
  Get m
  n=m
  While n=m
    Send "READ RV.WAYPOINT.CMDNUM"
    Get n
  EndWhile
  Cycle
EndIf
If dstep1>0.02+dfloor or dstep2>0.02+dfloor Then
  Send "RV STOP "
  Disp "STEP!"
  Send "SET SOUND 440 0.5"
  Send "SET RV.COLOR 0 0 255 TIME 0.5"
  Send "RV BACKWARD DISTANCE 0.1 M"
© Wait cycle
  Send "READ RV.WAYPOINT.CMDNUM"
  Get m
  n=m
  While n=m
    Send "READ RV.WAYPOINT.CMDNUM"
    Get n
  EndWhile
  Send "RV RIGHT 30"
© Wait cycle
  Send "READ RV.WAYPOINT.CMDNUM"
  Get m
  n=m
  While n=m
    Send "READ RV.WAYPOINT.CMDNUM"
    Get n
  EndWhile
  Cycle
EndIf
EndLoop
Goto menu
ElseIf tecla="6" Then
  Text "Thanks for playing with Rover!           Press ENTER to continue."
EndIf

```

Send "DISCONNECT RV"
EndPrgm