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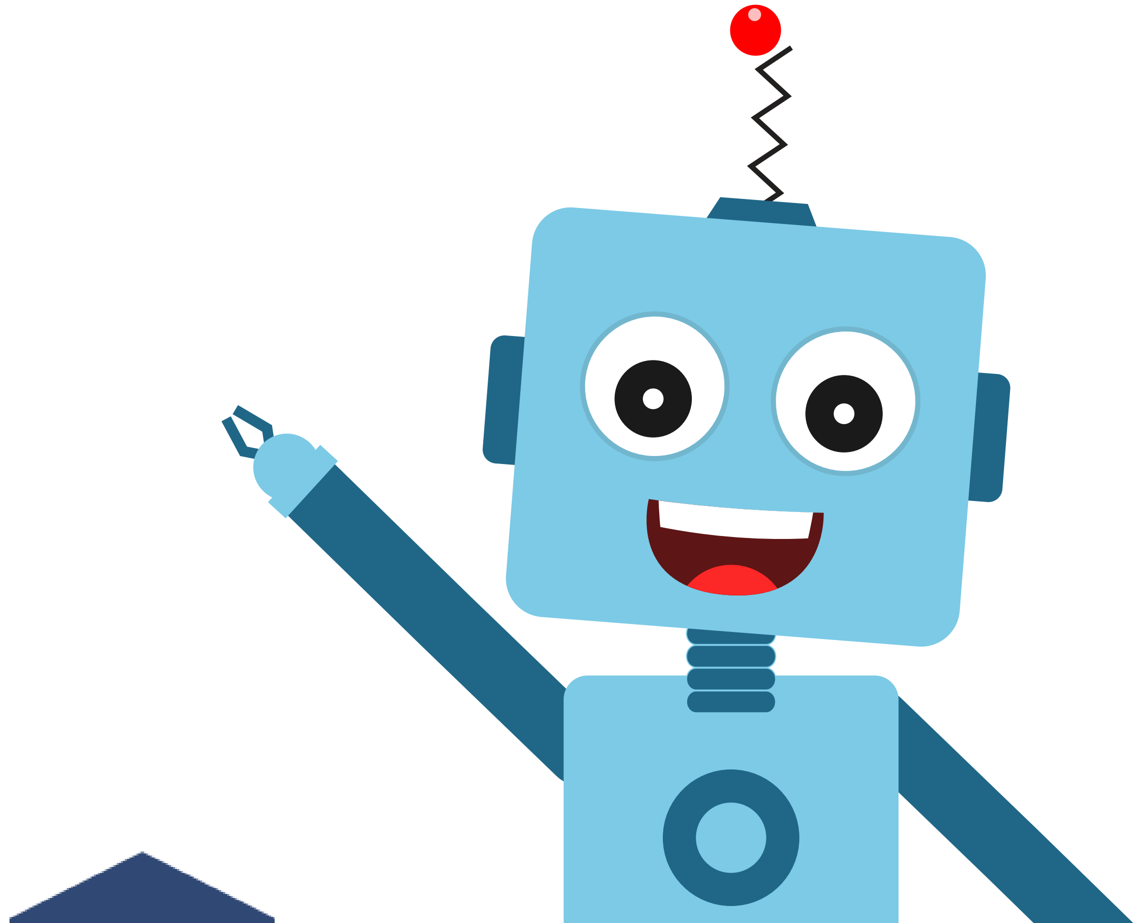
Face Tracking Robot

Session 28



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Topics covered

1.Face Detection Technique

2.Making a Face Tracking Robot

Activity:Servo Sweep

Activity: Servo Sweep

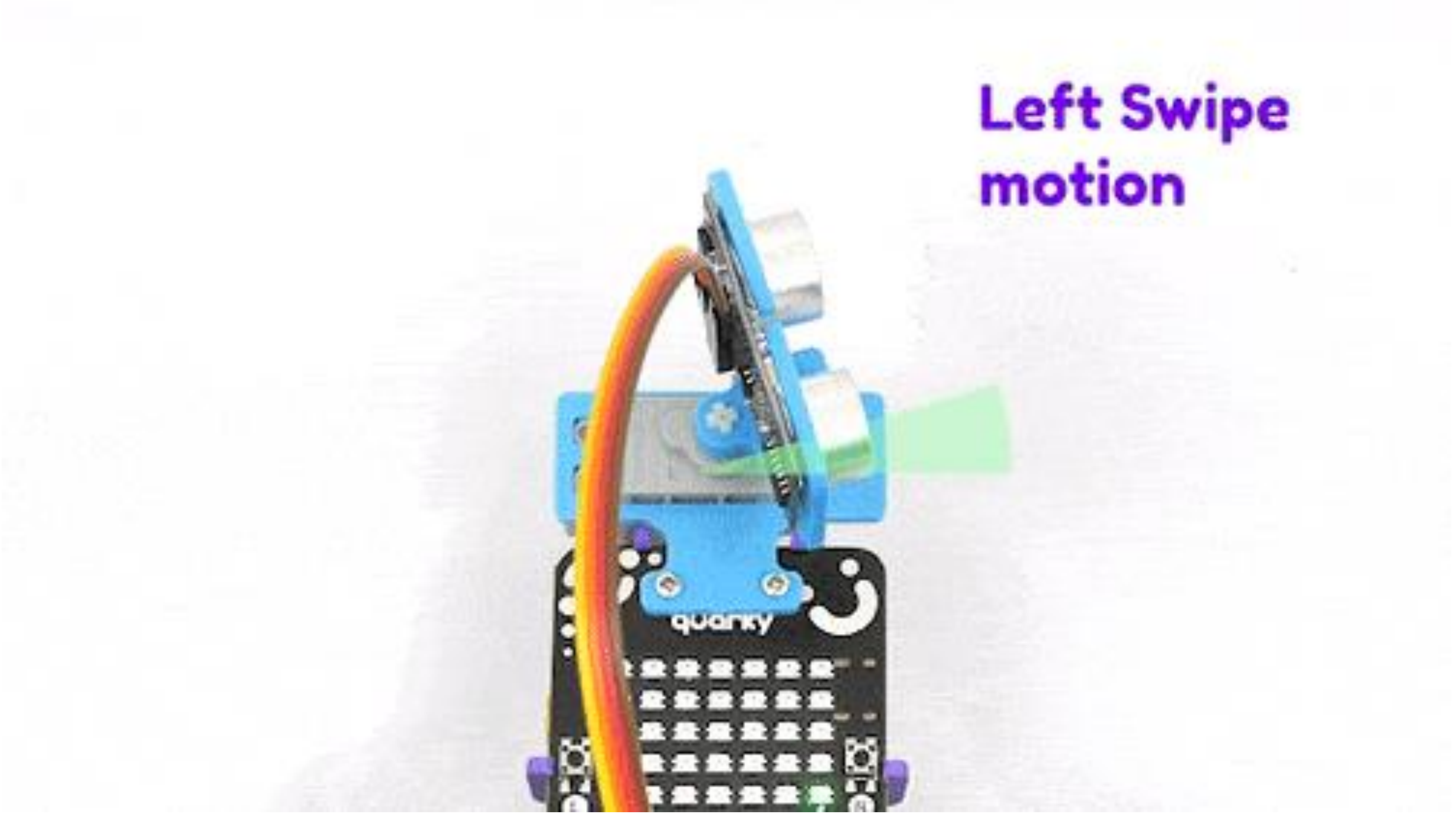
1. Open PictoBlox and create a new file. Select the coding environment as Python Coding.
2. Select The Bluetooth Port from the Connect option. Make sure that the quarky is running and the Pictoblox Link software is running on the device. Select the Quarky and connect it by clicking on connect.
3. The function moveservo() sets the servo motor connected to the specified servo pin to the specified angle.
4. Run this script. The servo head should get aligned properly.
5. Now, for the next part, we want to run our code continuously, hence we use a while loop such that the code keeps running continuously, until we stop it.
6. Now, for adding a time delay of 1 second after forward motion, we will be using time.sleep() function.

Activity: Servo Sweep

```
sprite = Sprite('Tobi')
quarky = Quarky()
import time

Angle = 0
while True:
  for i in range(0, 18):
    Angle += 10
    quarky.moveservo("Servo 1", Angle)
    time.sleep(0.01)

  for i in range(0, 18):
    Angle += -10
    quarky.moveservo("Servo 1", Angle)
    time.sleep(0.01)
```



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Activity: Face Tracker

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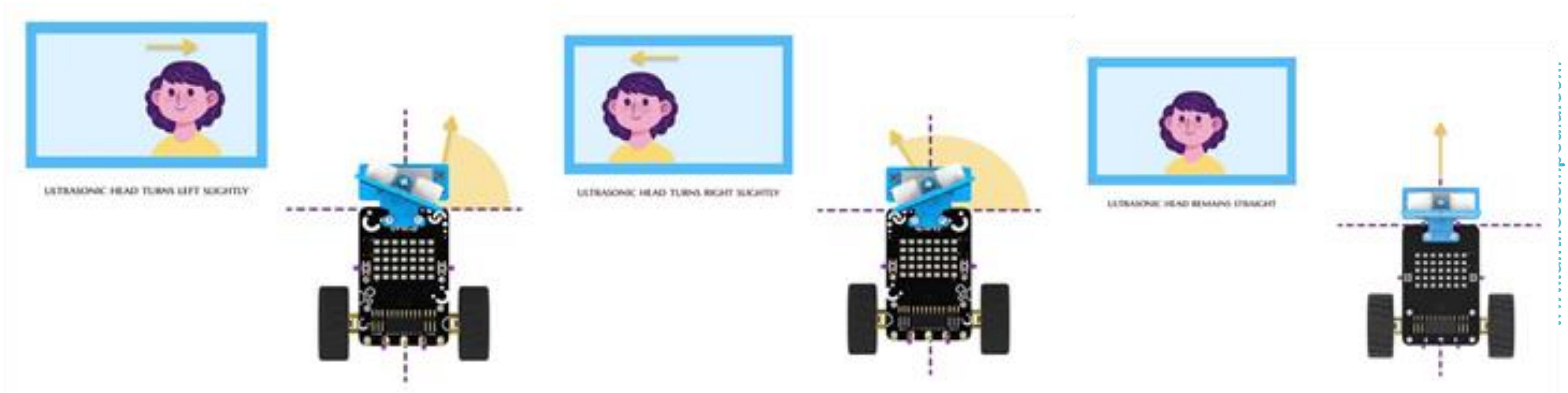
Face Tracking Robot


ULTRASONIC HEAD TURNS LEFT SLIGHTLY
ULTRASONIC HEAD TURNS RIGHT SLIGHTLY
ULTRASONIC HEAD REMAINS STRAIGHT

Activity: Face Tracker

1. Select The Bluetooth Port from the Connect option. Make sure that the quarky is running and the Pictoblox Link software is running on the device. Select the Quarky and connect it by clicking on connect.
2. Now, select the Tobi.py file from the Project Files section and by default, the syntax will be written in sprite as an object.
3. Build a face detection object and store it in the variable ‘fd‘.
4. For this activity, we will be writing functions related to Quarky, so we need to define a function for it.
    1. We use a while loop so that our code runs continuously
    2. Now, for adding a time delay of some second using time.sleep() function.
5. You can use the function count() to get the number of faces recognized from the image.
    1. If there is a chance of identifying a person from their face in terms of percentage of probability, utilize fd .setthreshold()function
1. Now, we will set various properties of the Face Filters sprite, using the respective sprite functions:
    1. setx(): To set the x-position of the sprite
    2. sety(): To set the y-position of the sprite
    3. setsize(): To set the size of sprite
    4. setdirection(): To set the angle of sprite

The function moveservo( ) sets the servo motor connected to the specified servo pin to the specified angle. We want to alter the angle’s orientation by changing its direction

Activity: Face Tracker

```
sprite = Sprite('Tobi')
quarky = Quarky()
import time
fd = FaceDetection()
fd.video("on", 0)
fd.enablebox()
fd.setthreshold(0.5)
time.sleep(1)
while True:
  fd.analysestage()

  for i in range(fd.count()):
    sprite.setx(fd.x(i + 1))
    sprite.sety(fd.y(i + 1))
    sprite.setsize(fd.width(i + 1))
    Angle=fd.width(i + 1)
    quarky.moveservo("Servo 1", Angle)
    time.sleep(1)
```

Face Tracker

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