

# HACK HEROES

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Welcome Heroes :)

# What is CODING ?

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# Why we need CODING ?

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# How can we code ?

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# INSTRUCTIONS

- **Raise Your Hand**

If you have questions or need help, ask! We are here for you.

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- **4 Levels, 10 Stars** ★

Complete challenges in each level to earn stars:

- Level 1: ★★☆☆ stars (Code.org Maze)
- Level 2: ★★☆☆ stars (Scratch Animations)
- Level 3: ★★☆☆ stars (Python Turtle Graphics)
- Level 4: ★★☆☆ stars (Website Development)

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Move to the next level when instructed.

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- **Try Your Best**



# ALGORITHMS

- **Set of step-by-step instructions on how to solve a problem or to finish a task.**



Step 1: Turn on the tap.

Step 2: Wet your hands.

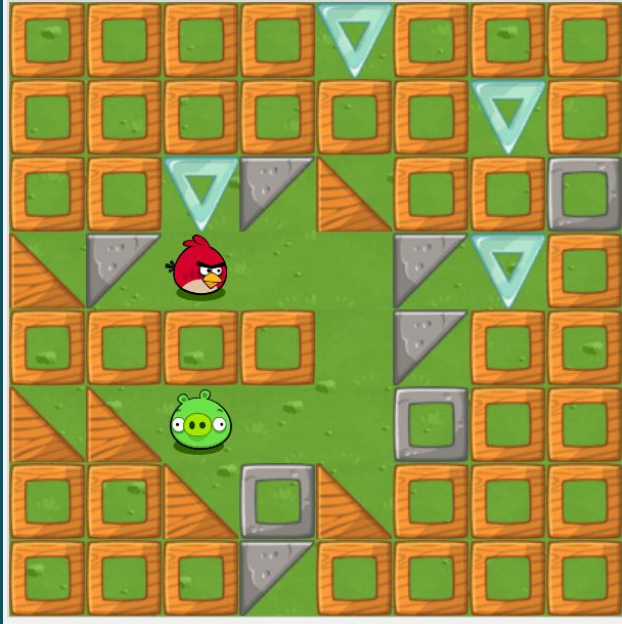
Step 3: Apply soap.

Step 4: Rub hands for 20 seconds.

Step 5: Rinse and dry hands.

# ALGORITHMS

- <https://studio.code.org/hoc/1>



# ALGORITHMS

<https://studio.code.org/hoc/1>

Help the bird reach the green pig.

You can use commands like

- Move forward

- Turn left

- Turn right



# REPEAT

<https://studio.code.org/hoc/1>

Suppose there are 5 steps

Move Forward

Move Forward

Move Forward

Move Forward

Move Forward

Instead we can say,

Repeat this step 5 times:

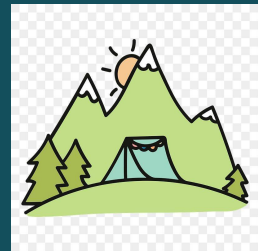
Move Forward

# REPEAT UNTIL

<https://studio.code.org/hoc/1>

- Car needs to reach the mountain
- We don't know how many kilometers
- Repeat until "Mountain"

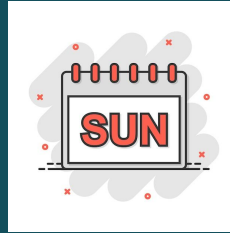
DRIVE



# IF ELSE

<https://studio.code.org/hoc/1>

- **IF** day is Sunday, Kids play
- **Else** kids go to school



# Code Examples - IF

```
a = 33
b = 33
if b > a:
    print("b is greater than a")
elif a == b:
    print("a and b are equal")
```

# Code Examples - REPEAT UNTIL

```
i = 1
while i < 6:
    print(i)
    if i == 3:
        break
    i += 1
```



FUN TIME

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D movie

D movie

D movie

**SECRET** ←

**SECRET**

**SECRET**

Get it

Get it

Get it

Get it



**T\_RN**

**EYE**  
EYE

# TURTLE

**Turtle in Python** is a fun and easy-to-use library that helps kids learn programming by drawing shapes, patterns, and pictures on the screen. It's like controlling a little robot (the "turtle") that moves around to draw based on your instructions.



# TURTLE - Methods

<b>Turtle()</b>	<b>Creates a new turtle object</b>
<b>forward()</b>	<b>Moves the turtle forward by the specified amount</b>
<b>backward()</b>	<b>Moves the turtle backward by the specified amount</b>
<b>right()</b>	<b>Turns the turtle clockwise</b>
<b>left()</b>	<b>Turns the turtle counterclockwise</b>
<b>color()</b>	<b>Changes the color of the turtle pen</b>
<b>dot()</b>	<b>Leave the dot at the current position</b>
<b>shape()</b>	<b>Should be 'arrow', 'classic', 'turtle' or 'circle'</b>

# TURTLE - Steps

1. Import the turtle module
2. Create a turtle to control.
3. Draw around using the turtle methods.
4. Run `turtle.done()`.

Link : <https://trinket.io/turtle>

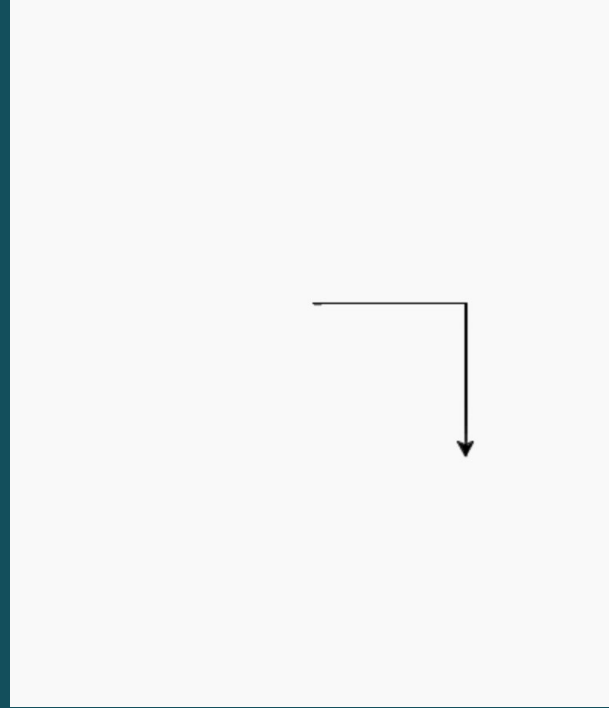
# TURTLE - LINE

```
import turtle  
  
t = turtle.Turtle()  
  
t.forward(100)
```

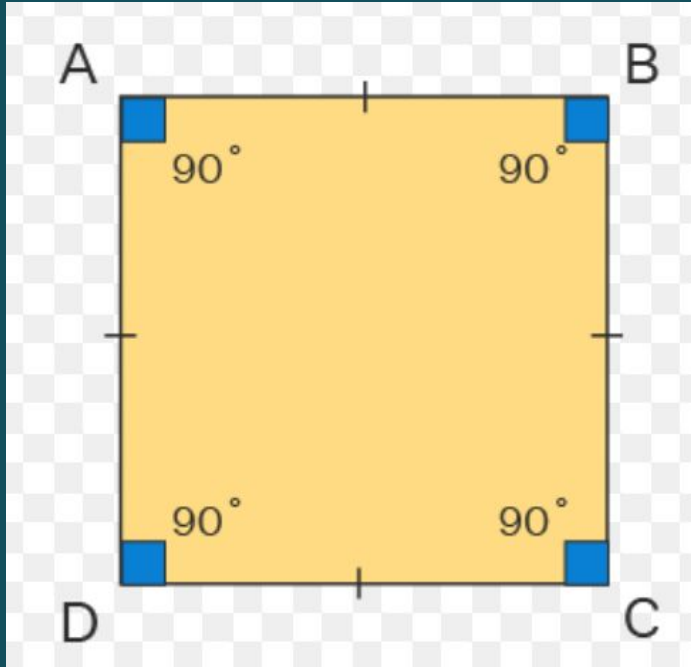


# TURTLE - LINE

```
import turtle  
  
t = turtle.Turtle()  
  
t.forward(100)  
  
t.right(90)  
  
t.forward(100)
```



# TURTLE - SQUARE

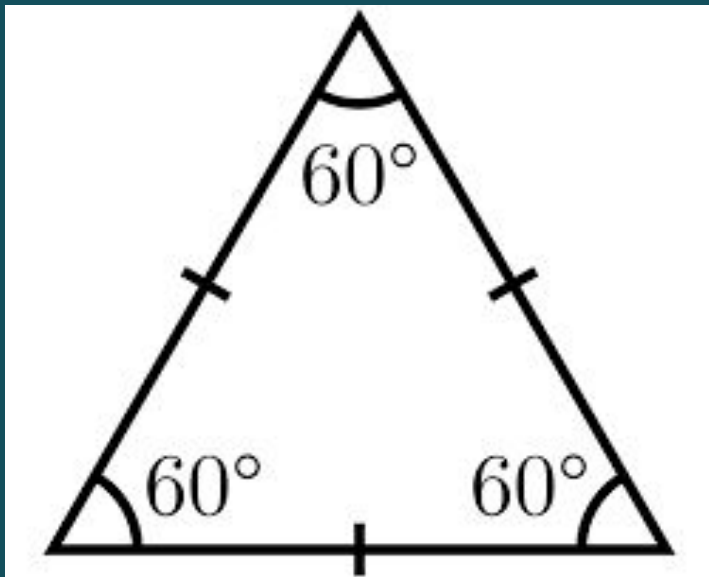


Draw a line from A to B

Turn 90 degrees left

Repeat same steps

# TURTLE - TRIANGLE

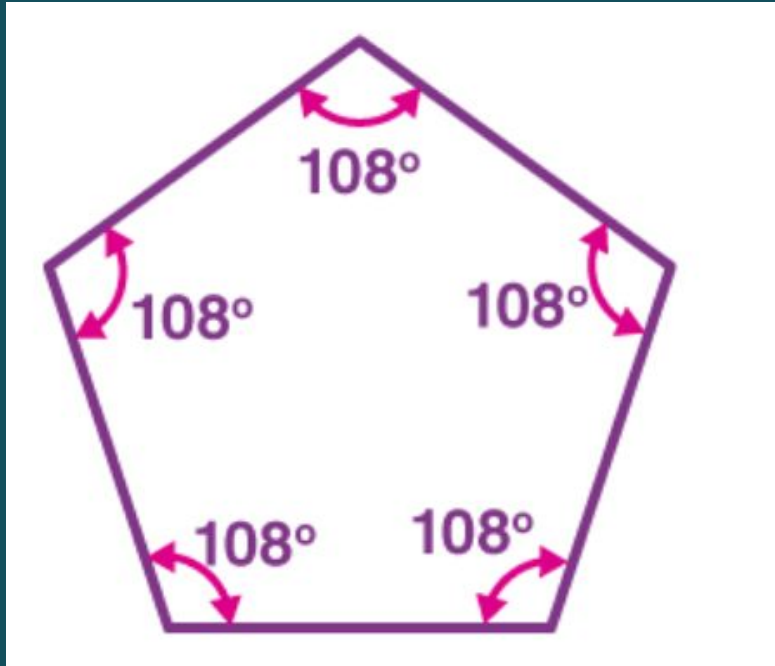


Draw a line

Turn  $180-60$  degrees right

Repeat same steps 3 times

# TURTLE - PENTAGON

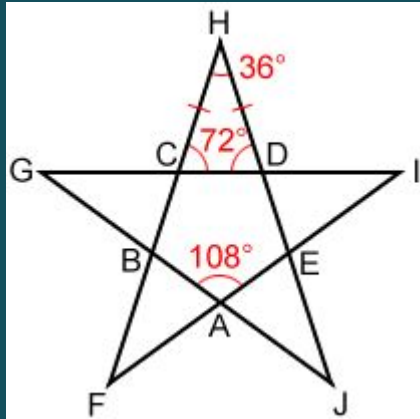


Draw a line

Turn  $180-108$  degrees right

Repeat same steps 5 times

# TURTLE - STAR



Draw a line

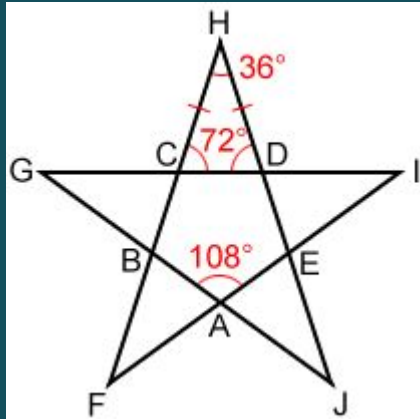
Turn 144 degree right

( $144=180-36$ )

Repeat 5 times



# TURTLE - STAR



```
import turtle
star = turtle.Turtle()

for i in range(5):
    star.forward(100)
    star.right(144)

turtle.done()
```

# WEBSITE DEVELOPMENT

LET US CODE AND CREATE A CALCULATOR ;>)

HAPPY CODING ;))

