IDDCDT Pre-sessional programming

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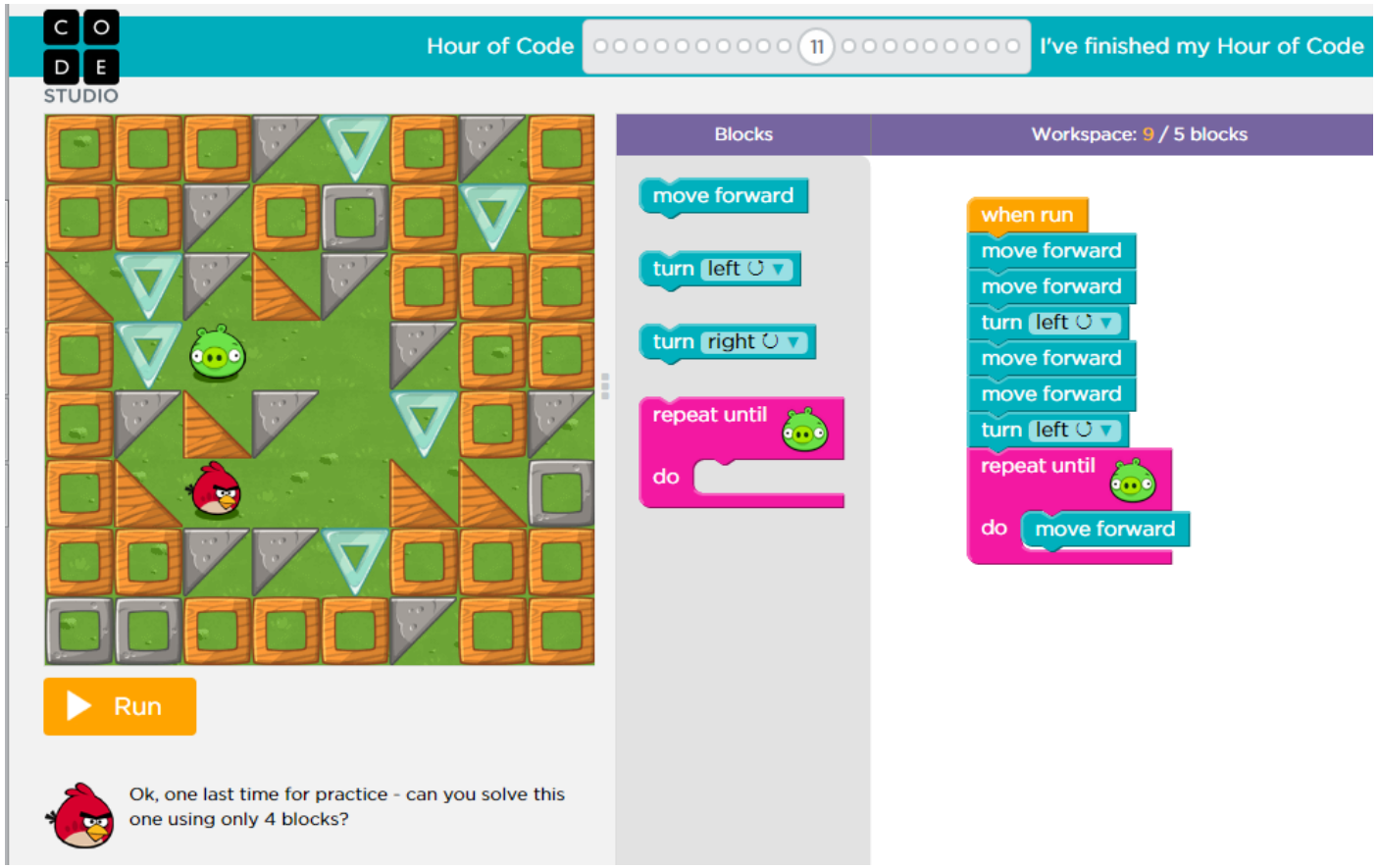
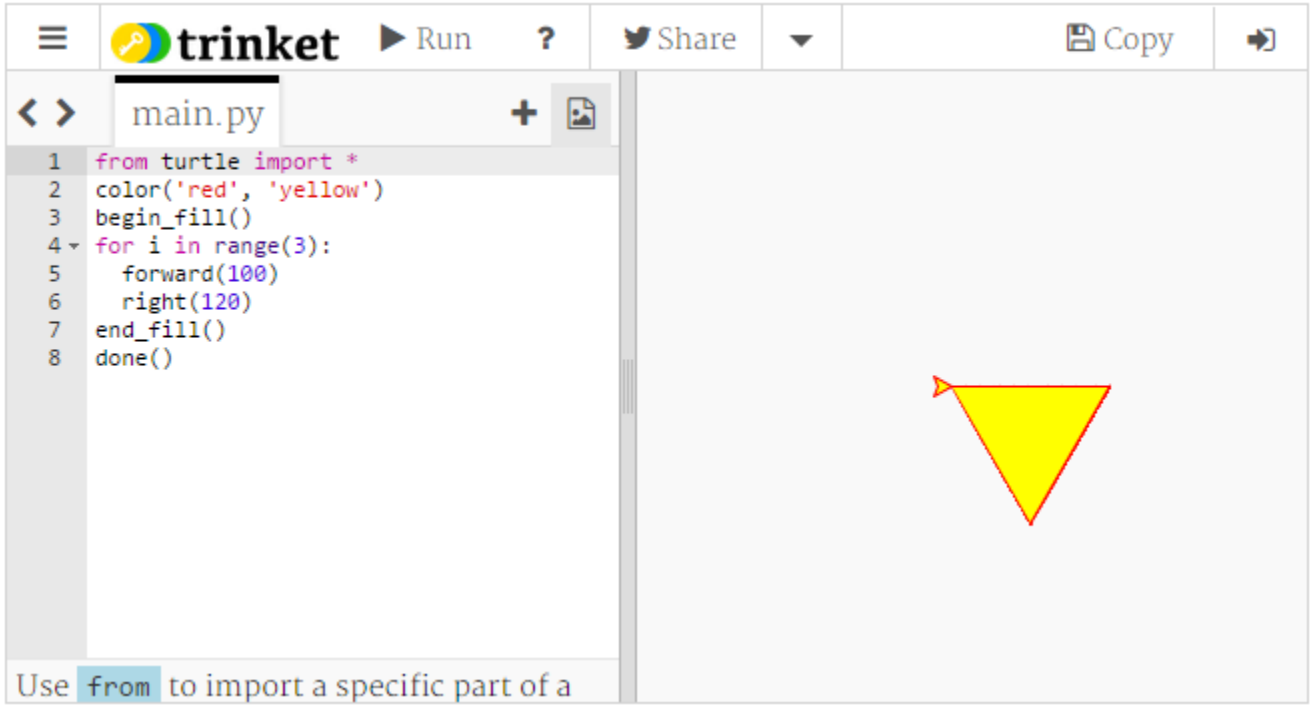
Code.org



Group1: http://studio.code.org/sections/DROXXS
Group2: http://studio.code.org/sections/UXFBZQ

Draw a triangle using the turtle

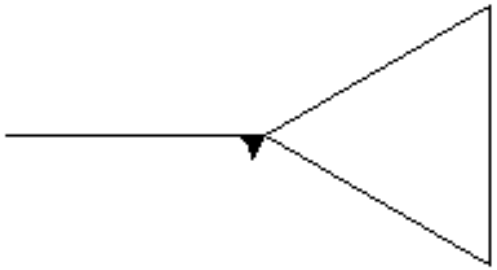


- https://trinket.io/
- https://docs.python.org/3.3/library/turtle.html

A leaf

```
from turtle import *

forward(100)
left(30)
for i in range(3):
    forward(100)
    right(120)
```

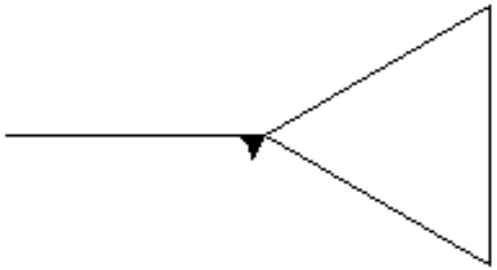


A leaf function

```
from turtle import *

def leaf():
    forward(100)
    left(30)
    for i in range(3):
        forward(100)
        right(120)

leaf()
```

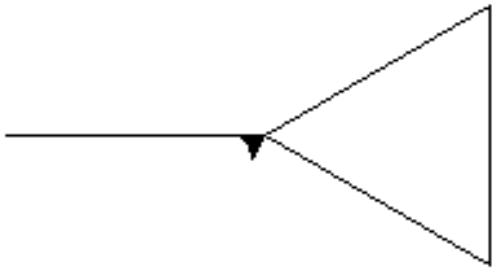


A leaf function with an input parameter

```
from turtle import *

def leaf(size):
    forward(size)
    left(30)
    for i in range(3):
        forward(size)
        right(120)

leaf()
```

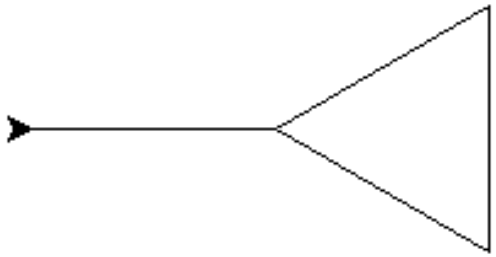


Reset the position after drawing

```
from turtle import *

def leaf(size):
    init_pos=pos()
    init_head=heading()
    forward(size)
    left(30)
    for i in range(3):
        forward(size)
        right(120)
    setpos(init_pos)
    setheading(init_head)

leaf()
```

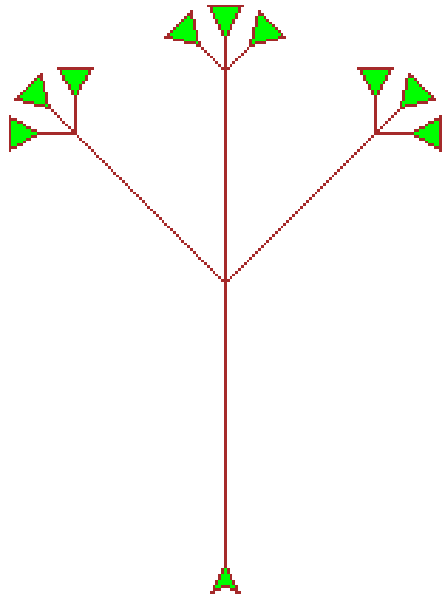


A branch

```
def branch(size):
    init_pos=pos()
    init_head=heading()
    forward(size*0.75)
    left(45)
    for i in range(3):
        leaf(size*0.25)
        right(45)
    setpos(init_pos)
    setheading(init_head)
```

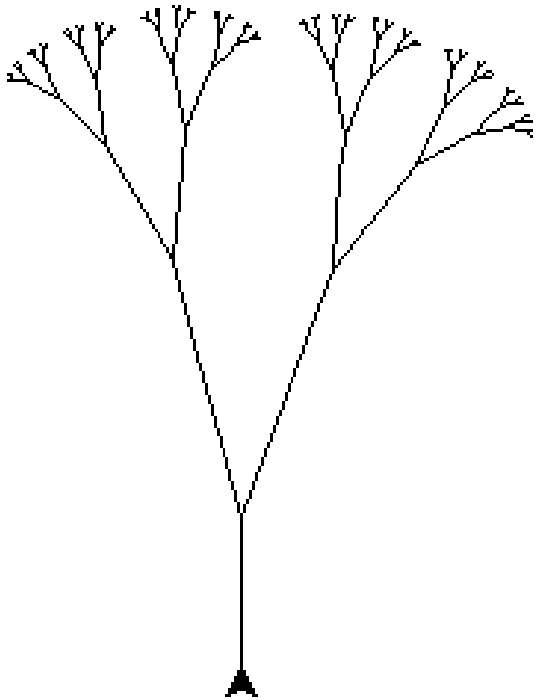
A tree

```
def tree(size):
    left(90)
    init_pos=pos()
    init_head=heading()
    forward(size*0.5)
    left(45)
    for i in range(3):
        branch(size*0.5)
        right(45)
    setpos(init_pos)
    setheading(init_head)
```



https://github.com/wasit7/tutorials/turtle/tree.py

A fractal tree



```
from turtle import *
def branch(size):
    if size<2:
        return
    else:
        forward(size*0.4)
        init_pos=pos()
        init_head=heading()

        left(15)
        forward(size*0.5)
        branch(size*0.5)

        penup()
        setpos(init_pos)
        setheading(init_head)
        pendown()

        right(20)
        forward(size*0.5)
        branch(size*0.5)

        penup()
        setpos(init_pos)
        setheading(init_head)
        pendown()

size=128
penup()
setpos((0,-size))
setheading(90)
pendown()
branch(size)
setpos((0,-size))
```

https://github.com/wasit7/tutorials/turtle/fractal_tree.py