

Python programs

Running them again and again!

Why would you store a program in a file?

Computers become more powerful if you store programs in a file, and run the program many times (often with different inputs) – it also saves a lot of typing!

Running programs from IDLE

Using IDLE on the Raspberry Pi, you can store programs in a file and edit and re-run them many times. This makes them easier to debug if they go wrong.

Just use "FILE, NEW WINDOW" then "FILE, SAVE" to save your program. To run it, use "RUN, RUN MODULE"

Defining your own words in the turtle language

You can add new words to our turtle language by using "def" to *define* a new word (function) for our turtle.

A square

```
def square():  
    for i in range(4):  
        forward(90)  
        right(90)  
  
square()  
forward(10)  
square()
```

A square with any size

```
def square(size):  
    for i in range(4):  
        forward(size)  
        right(90)  
  
square(20)  
square(40)
```

A triangle

```
def triangle():  
    for i in range(3):  
        forward(90)  
        right(120)  
  
triangle()  
rotate(10)  
triangle()
```

Asking for user input

in python 2 use:

```
sides = int(raw_input("sides?"))
```

in python 3 use:

```
sides= int(input("sides?"))
```

Challenges

- 1) Draw triangles of different sizes, using a function
- 2) Draw a house, using a function. Now draw a whole street of houses
- 3) Write a function "polygon" def polygon(sides) that draws any number of sides

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