Module 3

Monday, March 18, 2024 11:23 AM

" "

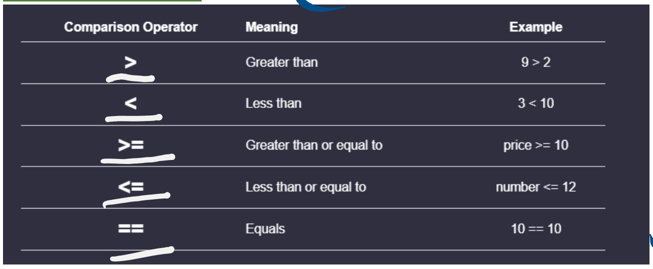
Input statement

```
a= input("Enter your name")
b=int(input("Enter the number"))
```

If Statement

(10>5)

Relational operator



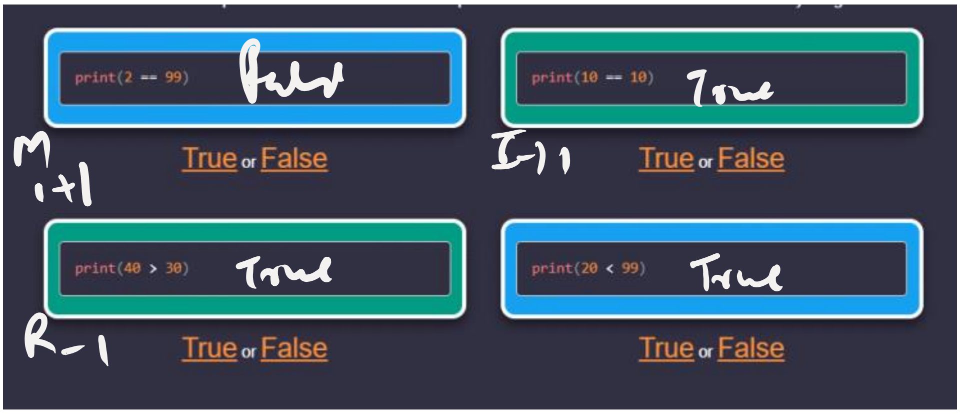
Comparison Operator	Meaning	Example
>	Greater than	9 > 2
<	Less than	3 < 10
>=	Greater than or equal to	price >= 10
<=	Less than or equal to	number <= 12
==	Equals	10 == 10

10==10

True

=

=



```
print(2 == 99)
```

False

True or False

M i+1

```
print(10 == 10)
```

True

True or False

I-11

```
print(40 > 30)
```

True

True or False

R-1

```
print(20 < 99)
```

True

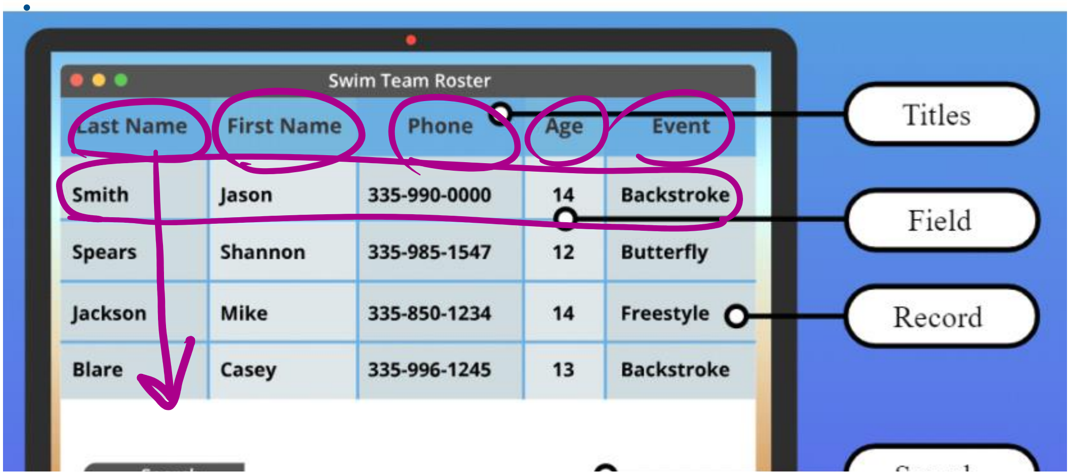
True or False

1. Decide on a question to ask the user. Some ideas include:
    1. What grade are you in?
    2. What sport do you play?
    3. Where did you go on vacation?

if(grade==7):

print("wow we standing same class")

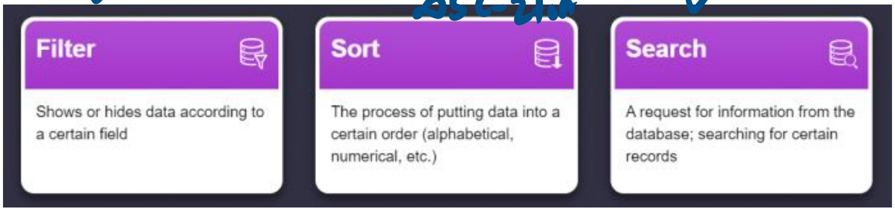
Data Programming



Swim Team Roster

Last Name	First Name	Phone	Age	Event
Smith	Jason	335-990-0000	14	Backstroke
Spears	Shannon	335-985-1547	12	Butterfly
Jackson	Mike	335-850-1234	14	Freestyle
Blare	Casey	335-996-1245	13	Backstroke

ASC - AtoZ
DSC-ZtoA



Filter

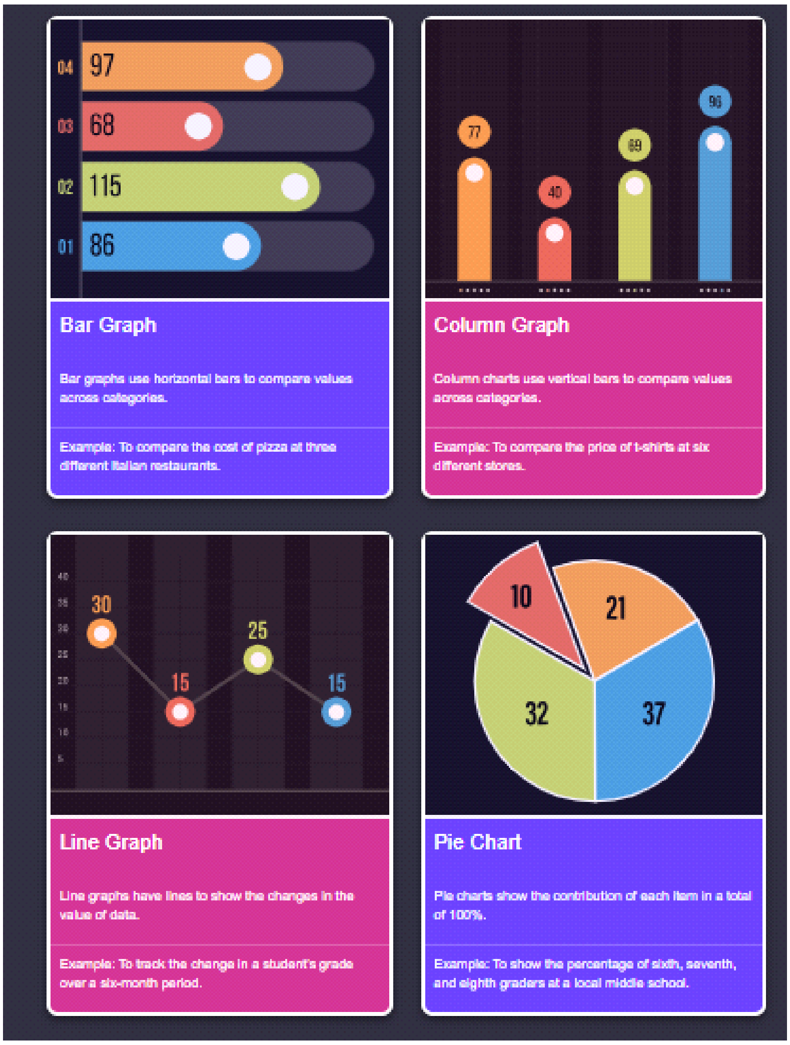
Shows or hides data according to a certain field

Sort

The process of putting data into a certain order (alphabetical, numerical, etc.)

Search

A request for information from the database; searching for certain records



Bar Graph

Bar graphs use horizontal bars to compare values across categories.

Example: To compare the cost of pizza at three different Italian restaurants.

Column Graph

Column charts use vertical bars to compare values across categories.

Example: To compare the price of t-shirts at six different stores.

Line Graph

Line graphs have lines to show the changes in the value of data.

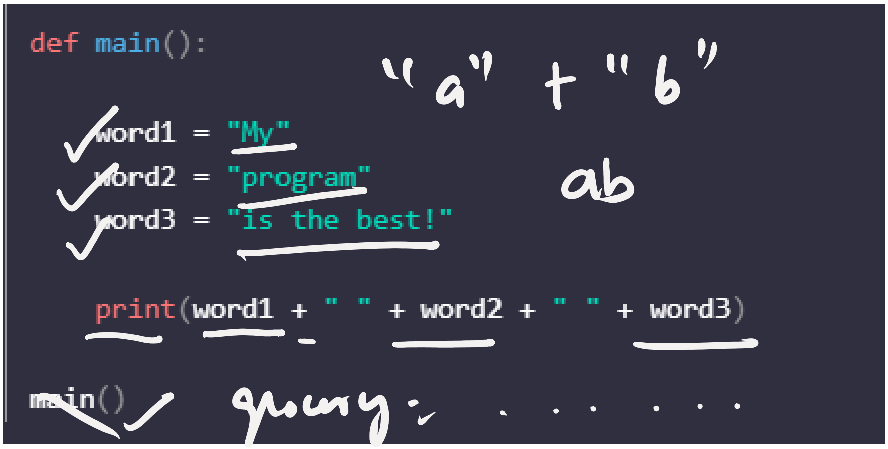
Example: To track the change in a student's grade over a six-month period.

Pie Chart

Pie charts show the contribution of each item in a total of 100%.

Example: To show the percentage of sixth, seventh, and eighth graders at a local middle school.

Concatenation

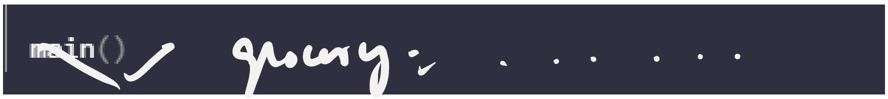


```
def main():

    word1 = "My"
    word2 = "program"
    word3 = "is the best!"

    print(word1 + " " + word2 + " " + word3)

main()
```

"a" + "b"

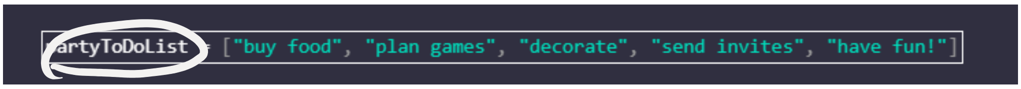
ab

query : . . . . . .

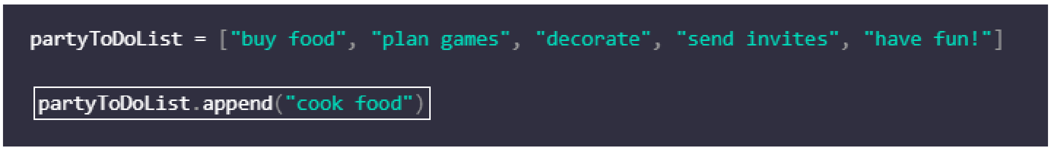


```
main()
```

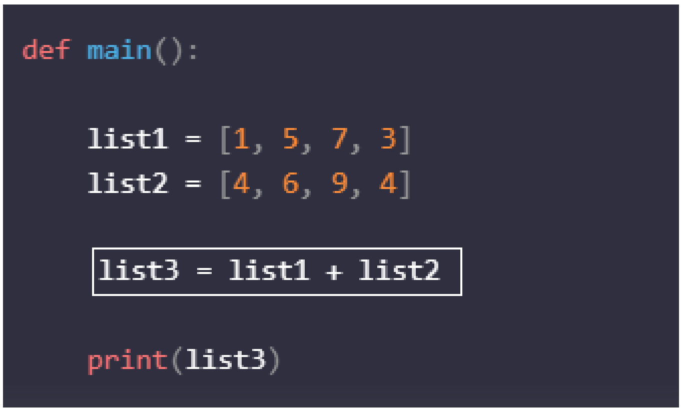
grocery: . . . . . .



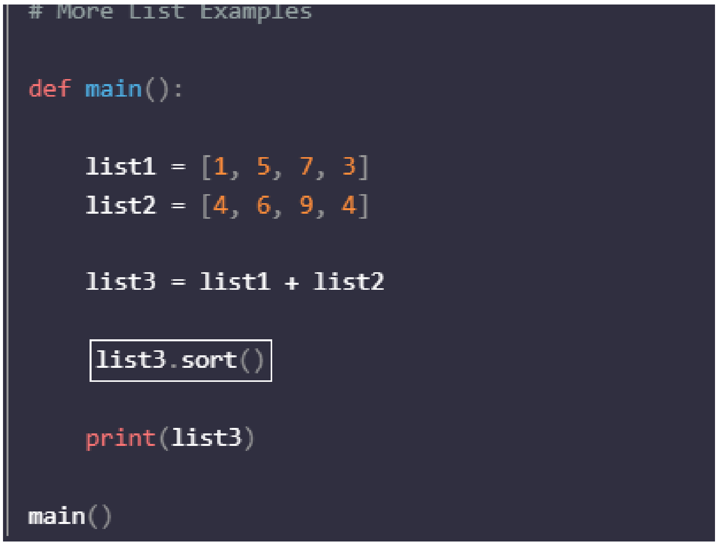
```
partyToDoList = ["buy food", "plan games", "decorate", "send invites", "have fun!"]
```



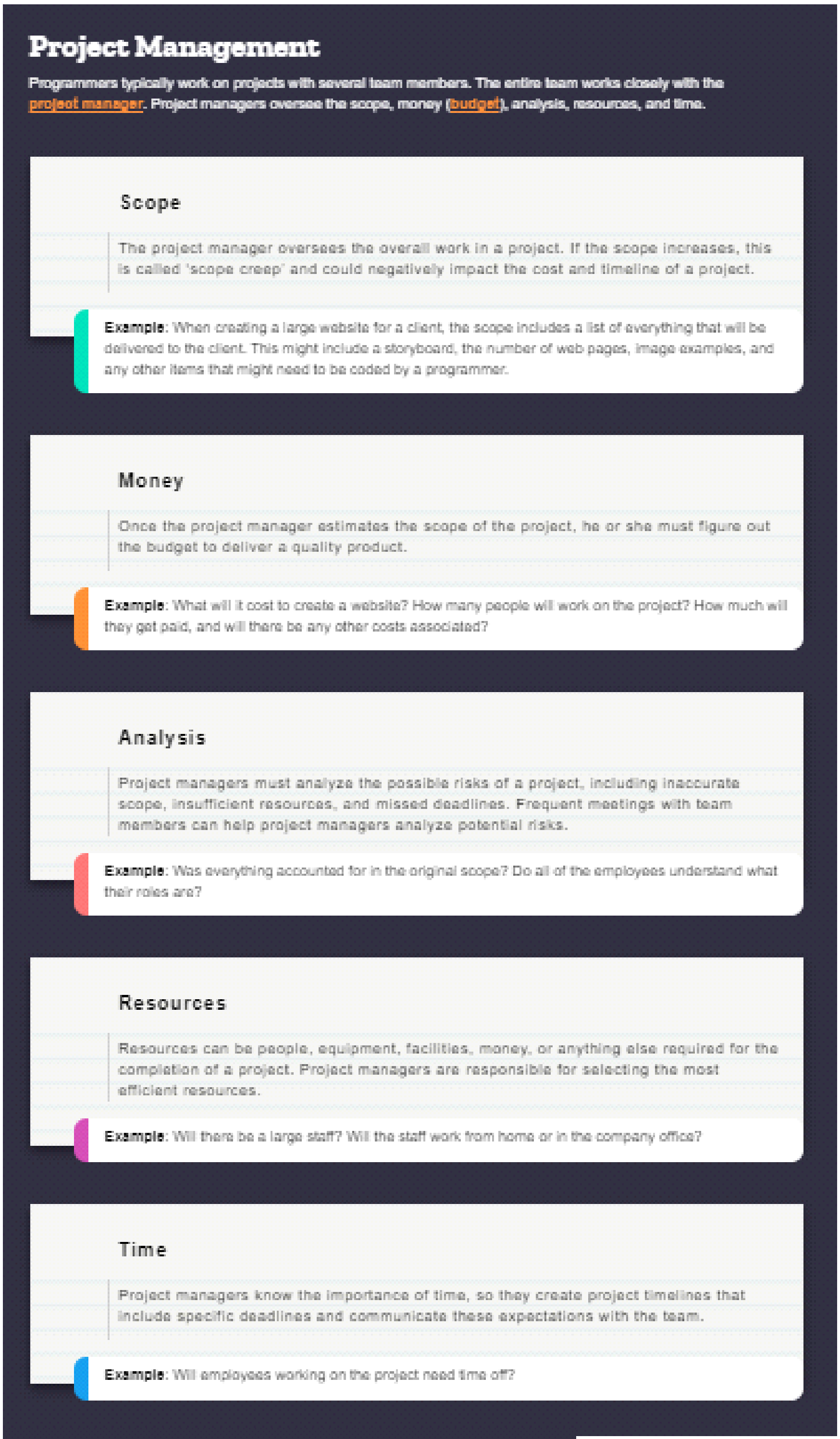
```
partyToDoList = ["buy food", "plan games", "decorate", "send invites", "have fun!"]

partyToDoList.append("cook food")
```



```
def main():

    list1 = [1, 5, 7, 3]
    list2 = [4, 6, 9, 4]

    list3 = list1 + list2

    print(list3)
```



```
# More List Examples

def main():

    list1 = [1, 5, 7, 3]
    list2 = [4, 6, 9, 4]

    list3 = list1 + list2

    list3.sort()

    print(list3)

main()
```



Project Management

Programmers typically work on projects with several team members. The entire team works closely with the project manager. Project managers oversee the scope, money (budget), analysis, resources, and time.

Scope

The project manager oversees the overall work in a project. If the scope increases, this is called 'scope creep' and could negatively impact the cost and timeline of a project.

Example: When creating a large website for a client, the scope includes a list of everything that will be delivered to the client. This might include a storyboard, the number of web pages, image examples, and any other items that might need to be coded by a programmer.

Money

Once the project manager estimates the scope of the project, he or she must figure out the budget to deliver a quality product.

Example: What will it cost to create a website? How many people will work on the project? How much will they get paid, and will there be any other costs associated?

Analysis

Project managers must analyze the possible risks of a project, including inaccurate scope, insufficient resources, and missed deadlines. Frequent meetings with team members can help project managers analyze potential risks.

Example: Was everything accounted for in the original scope? Do all of the employees understand what their roles are?

Resources

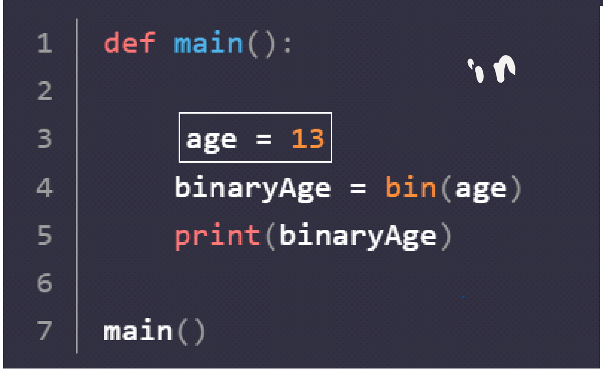
Resources can be people, equipment, facilities, money, or anything else required for the completion of a project. Project managers are responsible for selecting the most efficient resources.

Example: Will there be a large staff? Will the staff work from home or in the company office?

Time

Project managers know the importance of time, so they create project timelines that include specific deadlines and communicate these expectations with the team.

Example: Will employees working on the project need time off?



```
def main():

    age = 13
    binaryAge = bin(age)
    print(binaryAge)

main()
```

in

12

Bin

0 1, 1,

off on

System Development Life cycle

1) Planning and Analysis

2) Designing → Algorithm ✓
→ Pseducode ✓

Algorithm

Step1 : Start

Step2: Take a brush

Step3: Rinse it with water

Step 4: Apply paste on brush brissels

Step5: Brush your teeth in circular motion

Step 6: Rinse your mouth

Step 7: Wash your brush

Step 8: Keep the brush in brush holder.

Step9: you have clean teeth now

word/Phrases

Pseducode

1. Go to the bathroom
2. Pick the pink color brush
3. Rinse it with water
4. Take your fav toothpaste seda its colgate

3 : ~~2~~ Coding

Bug

3. Coding

4. Testing → Bug
debug

5. Maintance

Rules

1. Alphabet or underscore

abc ✓

_abc ✓

2. Use Number

abc123 ✓

123abc ✗

_123 ✓

3. keywords ✗

Print ✗ if

4. camel case, lowercase, capital case (case sensitive)

KAREM

karem

KaReM

Varrable.

KaReM ↵

I22g Sing Moh Rate

$\frac{3+1}{4}$ $\frac{1+1}{2}$ $\frac{1+1}{2}$ $\frac{1+1}{2}$

① 1abc

② abc$\boxed{@}$123 ✗

③ a1111111

④ CamelCase ✓

⑤ for

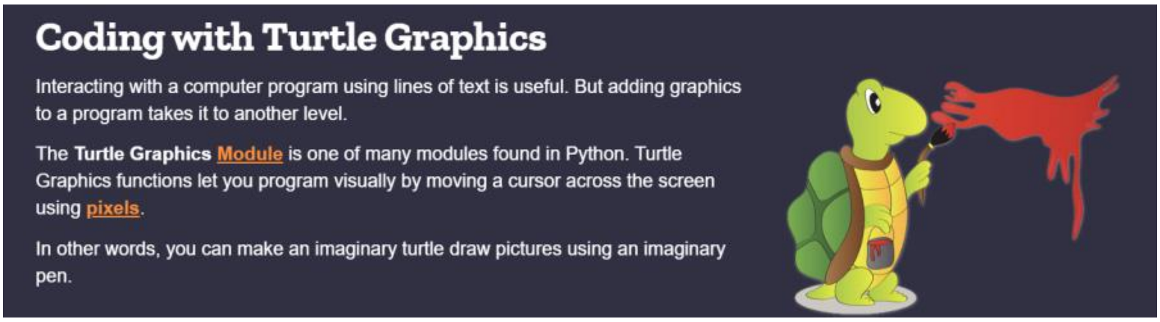
Input

```
a = input("Enter your name")
```

Step 1 : Accept the age of student

Step 2 : Add 5 to the age

Step 3 : Print ("you will be", age, "after 5 years") (age, [illegible] years")



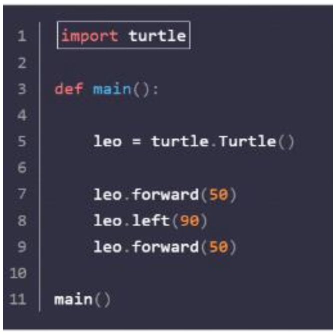
Coding with Turtle Graphics

Interacting with a computer program using lines of text is useful. But adding graphics to a program takes it to another level.

The **Turtle Graphics** Module is one of many modules found in Python. Turtle Graphics functions let you program visually by moving a cursor across the screen using pixels.

In other words, you can make an imaginary turtle draw pictures using an imaginary pen.

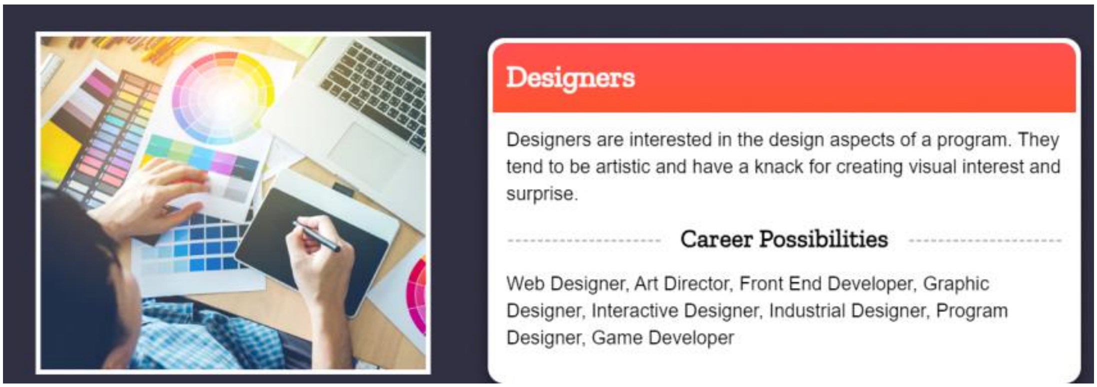
```
# Turtle Graphics Module

import turtle

def main():

    shelly = turtle.Turtle()
    shelly.forward(45)
    shelly.left(90)
    shelly.forward(45)

main()
```



```
import turtle

def main():

    leo = turtle.Turtle()

    leo.forward(50)
    leo.left(90)
    leo.forward(50)

main()
```

```
import turtle
def main():
   tom = turtle.Turtle()

   tom.color("green")
   tom.forward(100)
   tom.left(90)

   tom.color("blue")
   tom.forward(100)
   tom.left(90)

   tom.color("green")
   tom.forward(100)
   tom.left(90)

   tom.color("blue")
   tom.forward(100)
```

```
    tom.left(90)

main()
```

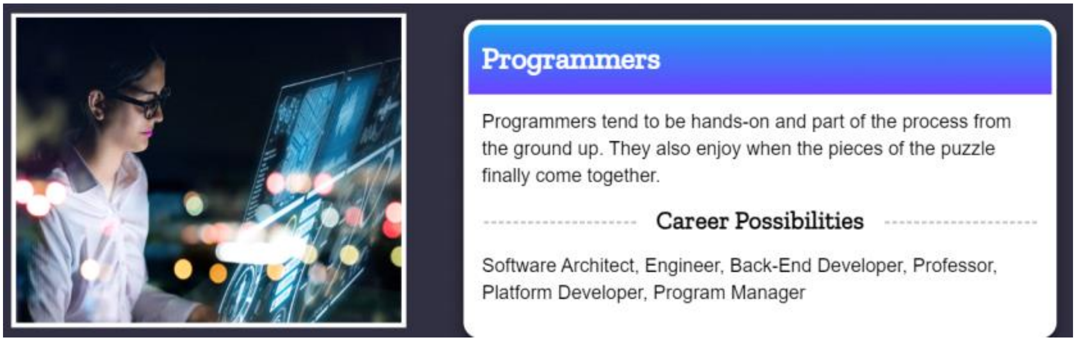


Designers

Designers are interested in the design aspects of a program. They tend to be artistic and have a knack for creating visual interest and surprise.

Career Possibilities

Web Designer, Art Director, Front End Developer, Graphic Designer, Interactive Designer, Industrial Designer, Program Designer, Game Developer

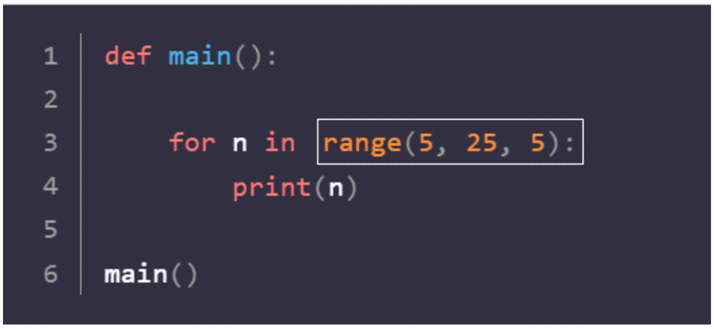


Programmers

Programmers tend to be hands-on and part of the process from the ground up. They also enjoy when the pieces of the puzzle finally come together.

Career Possibilities

Software Architect, Engineer, Back-End Developer, Professor, Platform Developer, Program Manager



```
def main():

    for n in range(5, 25, 5):
        print(n)

main()
```