

1

What is the output when this program is executed?

```
a = 24 : b = 2 : c = 3
if a / c == b ^ c then
    b = b * c
end if
if c + a / b > b then
    a = a - b * c
end if
b = b + a / 3
if b > a + c then
    b = 2 * b
else
    c = a / c
end if
output a + b / c ^ 2.
```

Warmup

2

- Afterwards:
Write down what
you know about
coding

Day 1: Python Intro



Hello!

I am Joongeun (Joon) Choi

- Grade 11
- Live in US
- Hobby: Badminton,
~~annoying my sister~~
- Coding Experience:
ACSL, Arduino Board



ROADMAP

- Variables
- Conditionals
- Math operations

1

- Loops
- Lists

3

2

- Functions/methods
- Input
- Make your own calculator app!

4

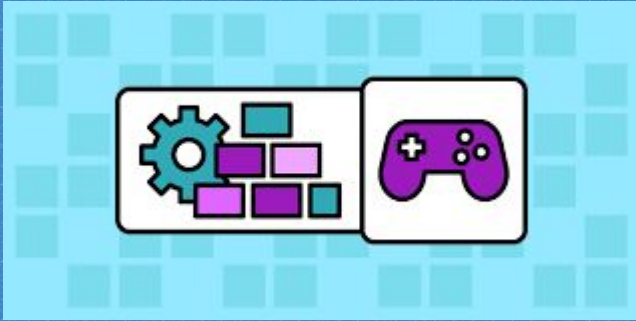
- Dictionaries
- Algorithms practice



1

Application

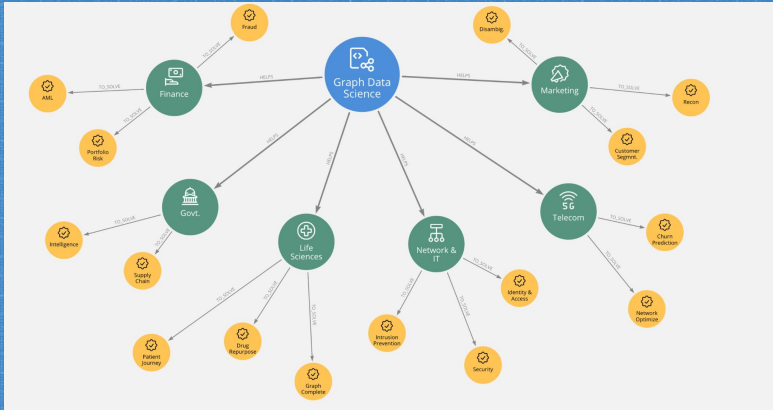
Web/App/Game Development



AI



Data Science



Automation



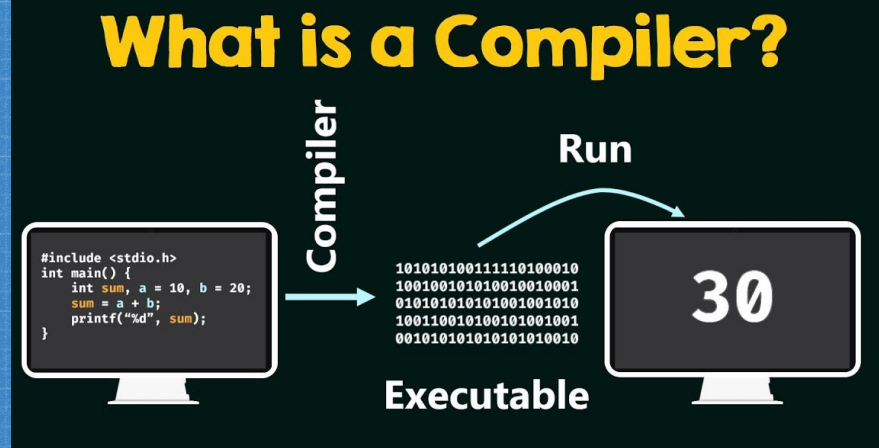
2

How it works



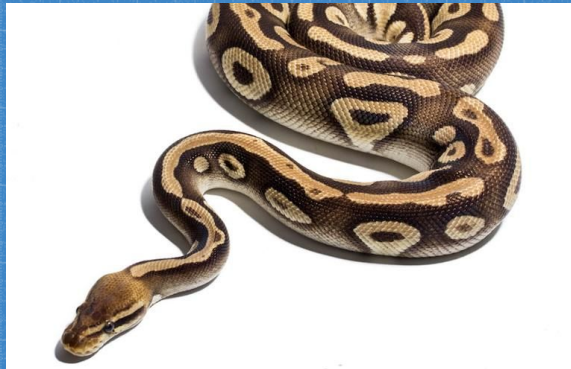
Text to Binary

- Computers understand binary (0s, 1s)
- You must give exact instructions!



3

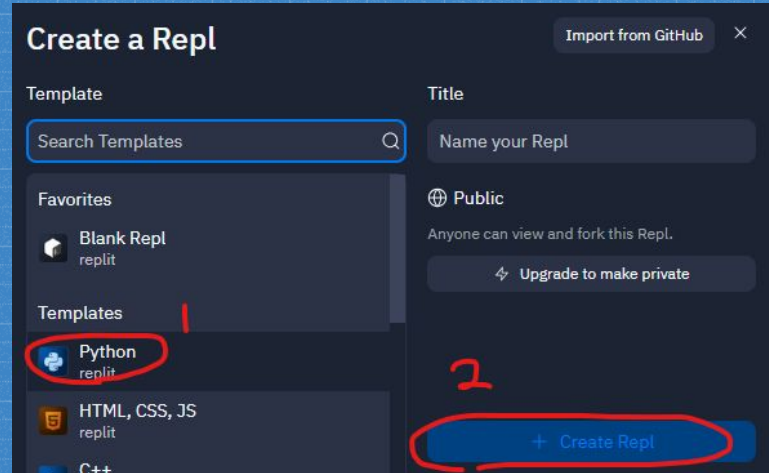
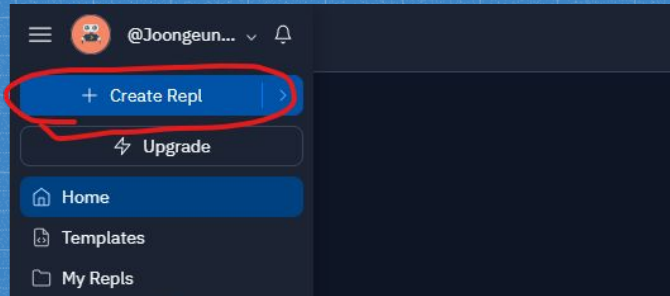
Setup, Variables, Strings



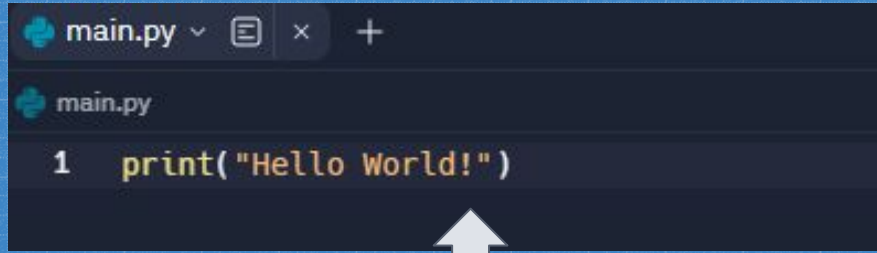
Create a file

1. Go to: replit.com and make a new account
2. Open python file

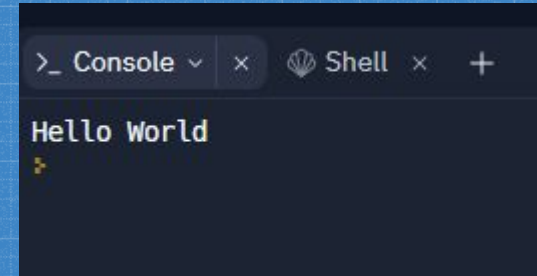
Sign Up



Print



```
main.py x +
main.py
1 print("Hello World!")
```



```
>_ Console x Shell x +
Hello World
>
```

You need quotation marks
around text - otherwise it
will be interpreted as a
variable

Variables

Note: don't use special symbols for var. names!

```
main.py ▾ [icon] × +  
main.py  
1 a = 10  
2 b = "Hello World"  
3 c = 3.14159265  
4 d = True  
5 e = False  
6 print(type(a), type(b), type(c), type(d), type(e))
```

What is int, str,
float, bool??

```
>_ Console ▾ × [icon] Shell × +  
<class 'int'> <class 'str'> <class 'float'> <class 'bool'> <class 'bool'>  
✚ □
```


Data Types

int: integer (-2147483648 through 2147483647)

float: decimal

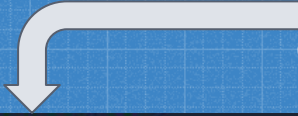
str (string): text

bool (boolean): True/False

Other types: tuples, list, dict, set, etc.

Numerical Operations

Use
comments!



```
1 #Example 1
2 print(4 * 6 + 3) # 27
3
4 #Example 2
5 a = 4
6 b = 6
7 c = 3
8 print(a * b + c) # 27
```

type: int

What will
this print?

```
#Example 3 (What will this print?)
a = 4
b = 6
c = 3
d = 2
print(((a * b)/c - c)**d) |
```

type: float
(from '//')

Variable Reassignment

```
a = 3  
b = 4  
a = a + b + 1  
print(a)  
print(b)
```


String Operations/Debugging

```
a = "3"
```

```
b = "6"
```

```
print(a * b)
```


Error Message:

```
Traceback (most recent call last):  
  File "main.py", line 22, in <module>  
    print(a * b)  
TypeError: can't multiply sequence by non-int of type 'str'
```


Adding/Multiplying Strings

#Example 4

```
a = "3"
```

```
b = "6"
```

```
print(a + b)
```

```
print(a * 10)
```

>_ Console ▾ ×

Shell × +

36

3333333333



String Indexing

- Access the *i*th character of string with "[i]"
- Indices start from 0
- "[i:n+1]" will get the *i*th-nth characters

```
1 string = "Hello World"  
2 print(string[0])
```

H



```
1 string = "Hello World"  
2 print(string[1:5])
```

ello



(From 1, up to but not including 5)

4

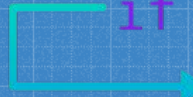
Conditionals



Condition is True

```
number = 10
```

```
if number > 0:  
    # code
```



```
else:  
    # code
```

```
# code after if
```

You can use
"elif" to
specify another
condition (you
don't always
need to use the
"else")

Condition is False

```
number = -5
```

```
if number > 0:  
    # code
```



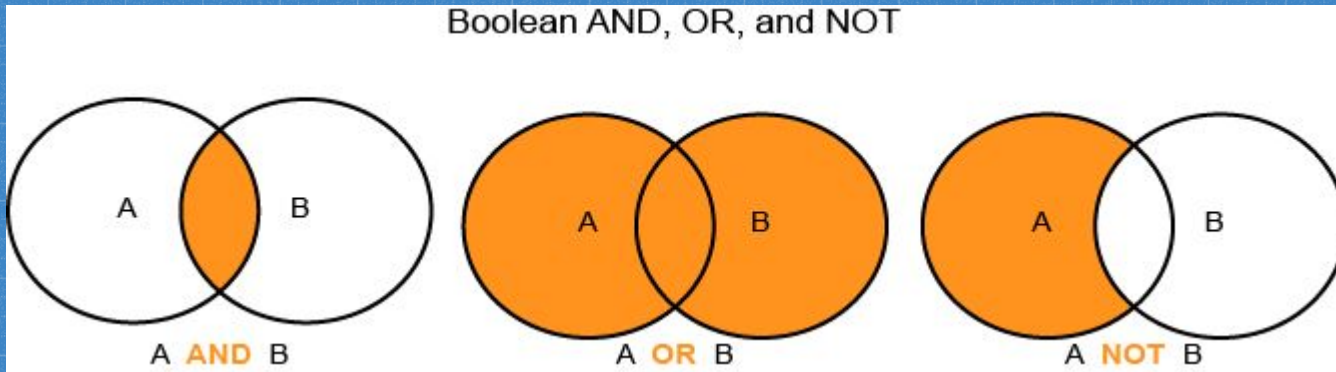
```
else:  
    # code
```

```
# code after if
```


- '=' vs. '==':

```
1  # '=' vs. '=='
2  a = 4
3  if a == 3:
4      print("a is 3")
5  elif a == 4:                # This conditional is True
6      print("a is 4")        # This line is printed
7  else:
8      print("a is not 3 or 4")
```

- and, or, not, != (boolean operators):



Let's Practice!

1. <https://codingbat.com/python/String-1>
2. Try coding the warm up problem