

# INTRODUCTION TO GAME PROGRAMMING USING PYTHON

There are 4 impostors among us





LETS GET TO KNOW  
EACH OTHER



MENTIMETER

HOW DO YOU USE YOUR  
SMARTPHONE?





# EXAMPLE OF PROGRAMS



Operating System



GenAI (ChatGPT)



Google Search



Social Media

# EXAMPLE OF PROGRAMS



LEAGUE OF  
LEGENDS

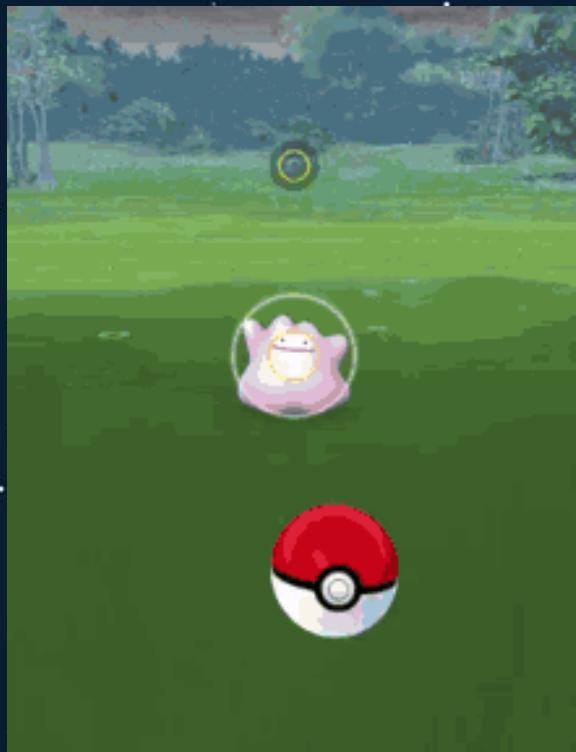
APEX  
— LEGENDS —



BUT HOW?

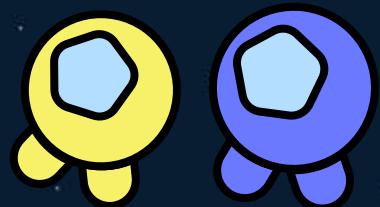


# PROGRAMMING IN GAMES



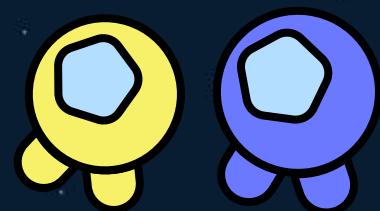
# WHO "TAUGHT" THE COMPUTER?

PROGRAMMERS



# HOW DO PROGRAMMERS TEACH THE COMPUTER?

## PROGRAMMING LANGUAGES



# PROGRAMMING LANGUAGES



**Brian**

What is a programming language?



**Jack**

A programming language is a set of instructions written by a programmer to deliver instructions to the computer to perform and accomplish a task.

# PROGRAMMING LANGUAGES



**Brian**

What is a programming language?



**Computer**

```
010001110110111101101111  
01100100010000001101010  
011011110110001000100001
```

# PROGRAMMING LANGUAGES



JavaScript



Python



SQL



TypeScript



C++



C#



Java™



MatLab

# PROGRAMMING LANGUAGES

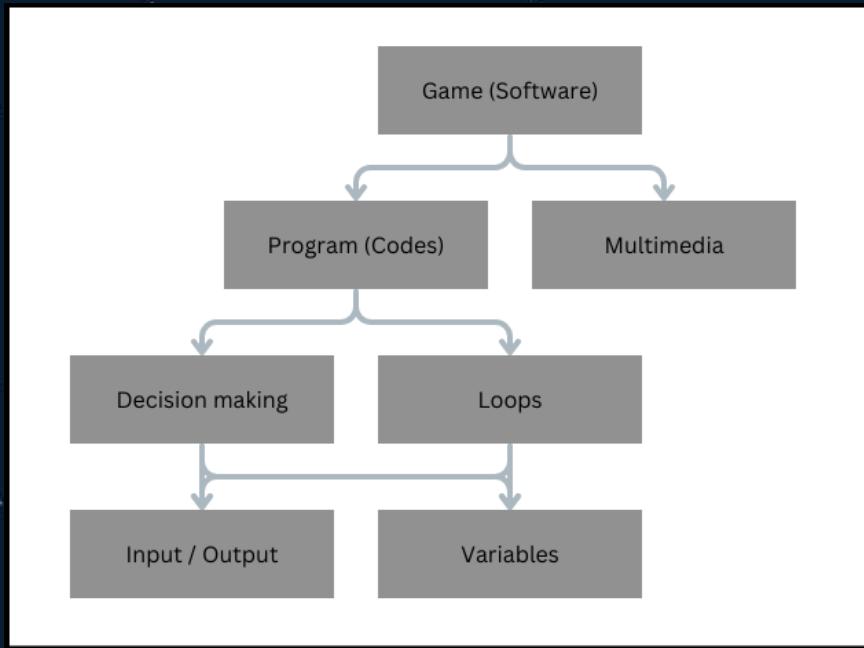


## Python

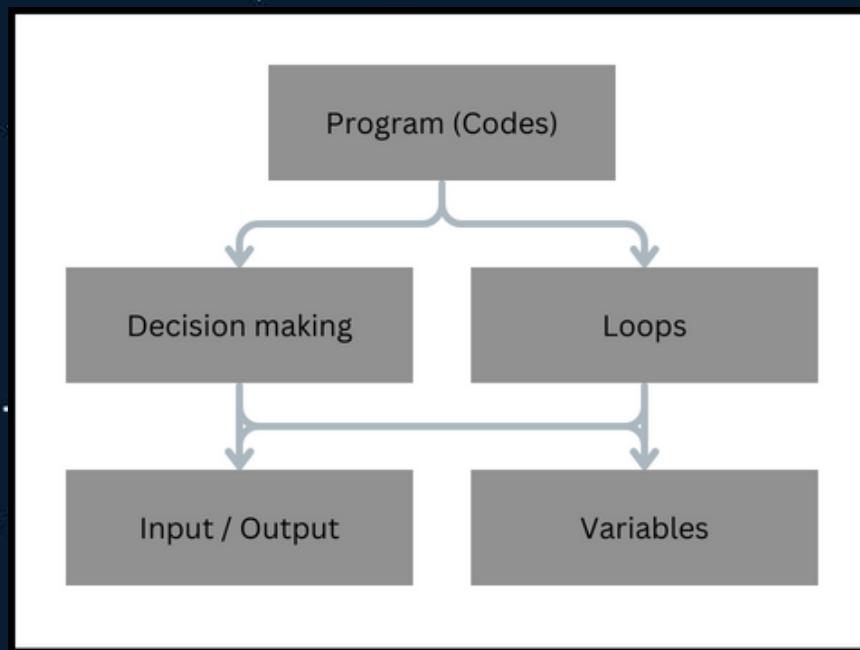
Easy to read

Easy to learn

# GAMES



# GAMES



1ST STEP



# CHARACTER CREATION

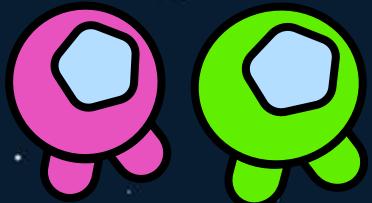
Name	
Gender	
Age	
Class	
Burial Gift	
Face Presets	
Build	
Appearance	

at Camera ⌂ :Help

Level	9
Vigor	12
Attunement	10
Endurance	9
Vitality	12
Strength	12
Dexterity	11
Intelligence	8
Faith	13
Luck	11



# VARIABLES



# VARIABLES



# VARIABLES

```
variable_name = data
```

# DATA TYPES

Text Type: `str`

Numeric Types: `int`, `float`, `complex`

Sequence Types: `list`, `tuple`, `range`

Mapping Type: `dict`

Set Types: `set`, `frozenset`

Boolean Type: `bool`

Binary Types: `bytes`, `bytearray`, `memoryview`

None Type: `NoneType`

# DATA TYPES

str

int

STRING

str

# STRING

```
npc_name = "Jack"  
npc_gender = 'Male'  
npc_message = "Hi! Welcome to HKUST."
```

INTEGER

int

# INTEGER

```
npc_age = 22
```

```
npc_height = 181
```

# EXAMPLE

HI 055031 000038



<https://trex-runner.com/>

# STRING

```
name = "Dino"
```

```
name = 'Dino'
```

```
name = "Dino' # bad
```

# INTEGER

```
speed = 1
```

```
speed = 100
```

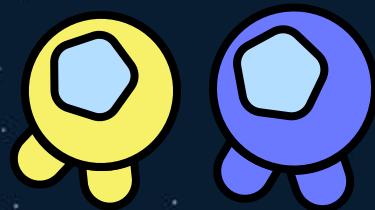
```
speed = 01 # bad
```

# CREATE YOUR CHARACTER

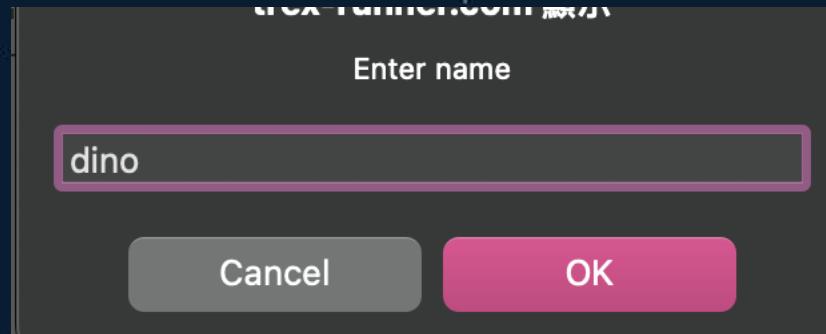




# INPUT/OUTPUT



# INPUT()



# INPUT()

```
input("Enter name: ")
```

# INPUT()

```
name = input("Enter name: ")
```

# PRINT()

dino

mute



S

PRINT()

```
print("dino")
```

```
print('dino')
```

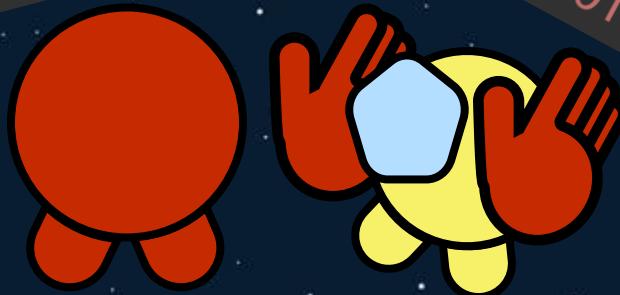
PRINT()

print(name)



# GAME CHAT

`print("WHAT ARE YOU!")`



`print("AN IDIOT SANDWICH.")`

# ARITHMETIC OPERATIONS



# ARITHMETIC OPERATIONS

Symbol	Use
+	Plus
-	Minus
*	Multiply
/	Divide

# ADDITION



# ADDITION

```
health = health + 25
```

```
diamond = diamond + 1
```

```
score = score + 2
```

# SUBTRACTION



# SUBTRACTION

```
pokeball = pokeball - 1
```

```
crewmate = crewmate - 1
```

```
health = health - 50
```

# MULTIPLICATION



# MULTIPLICATION

```
damage = damage * critical_hit
```

```
damage = damage * 2
```

```
drop_rate = drop_rate * fortune_level
```

# DIVISION



## DIVISION

```
head_damage = damage / helmet_level
```

```
magic_damage = magic_damage / magic_resist
```

```
damage = damage / armor_level
```

# APEX LEGENDS



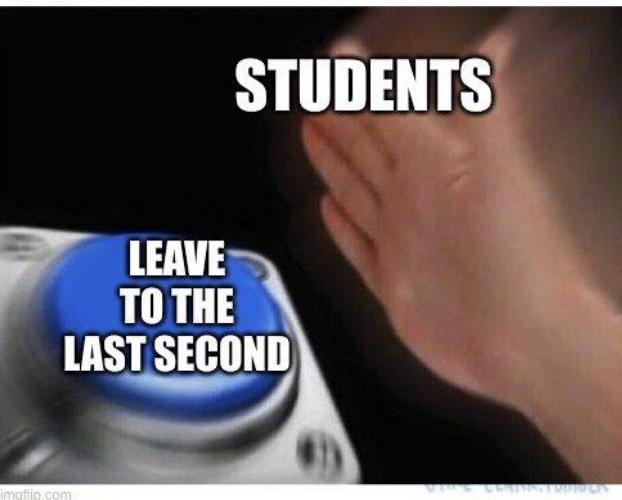
# DECISION MAKING OF COMPUTERS



THINK OF SOME DECISIONS  
YOU MADE TODAY







**STUDENTS**

# WHAT TO DO?



# WHAT TO DO?



## IF - ELSE

I will walk if the traffic light is green, or else I will stop.

## IF - ELSE

```
if traffic light == green:
```

Walk

```
else
```

Stop

# IF - ELSE

I will walk **if** the traffic light is green, or **else** I will stop.

```
if traffic light == green:
```

Walk

```
else
```

Stop

# NUMBER GUESSING GAME

# GAMES

