

INTRODUCTION TO GAME PROGRAMMING USING PYTHON

There are 4 impostors among us

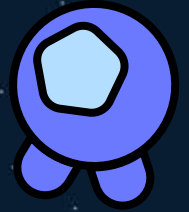


LETS GET TO KNOW
EACH OTHER



MENTIMETER

HOW DO YOU USE YOUR
SMARTPHONE?





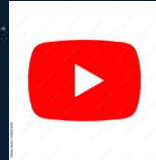
EXAMPLE OF PROGRAMS



Operating System

GenAI (ChatGPT)

Google Search



Social Media

EXAMPLE OF PROGRAMS



LEAGUE OF
LEGENDS

APEX
— LEGENDS —



BUT HOW?



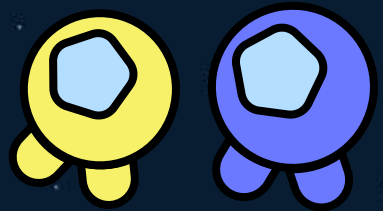
PROGRAMMING IN GAMES



WHO "TAUGHT" THE COMPUTER?

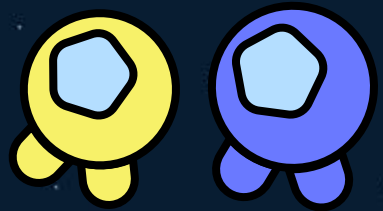
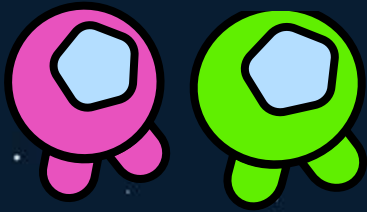


PROGRAMMERS



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

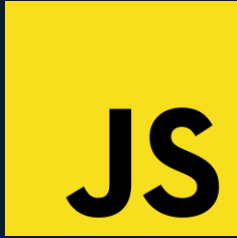
What is a programming language?



Computer

```
010001110110111101101111  
011001000010000001101010  
011011110110001000100001
```

PROGRAMMING LANGUAGES



JavaScript



Python



SQL



TypeScript



C++



C#



MATLAB

MatLab

PROGRAMMING LANGUAGES

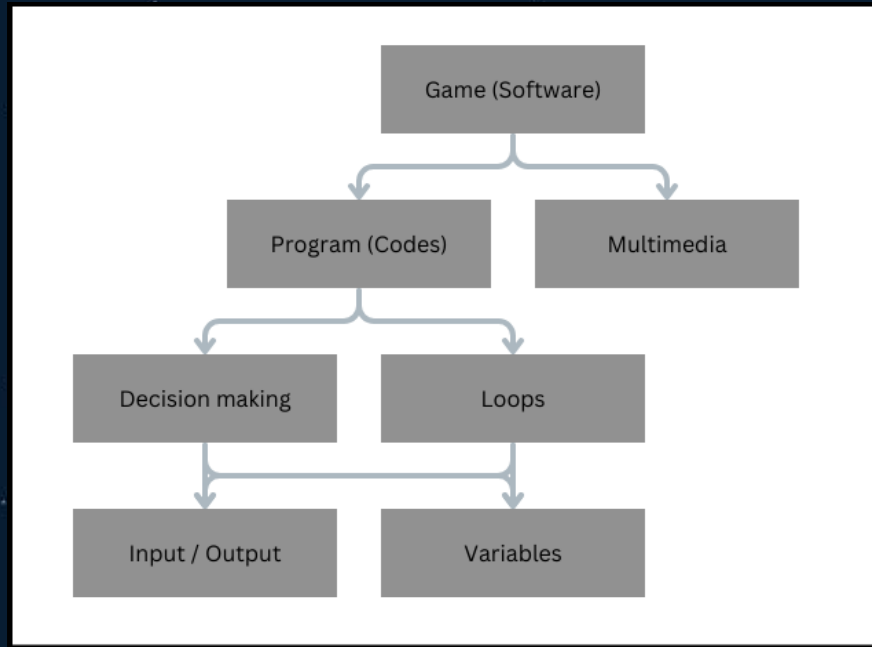


Python

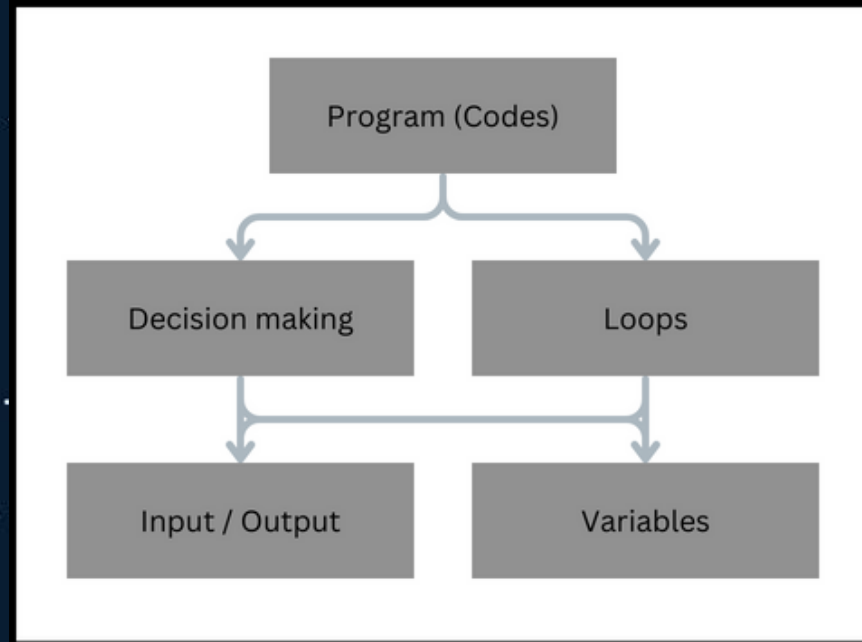
Easy to read

Easy to learn

GAMES



GAMES



1ST STEP

A pixelated red button with the word "START" in dark red capital letters. The button has a slight 3D effect with a darker red shadow on the right side. It is centered on a white rectangular background.

START

CHARACTER CREATION

Name	
Gender	
Age	
Class	
Burial Gift	
Face Presets	
Build	
Appearance	

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

Camera Help



Character creation menu with icons for menu, gender, class, appearance, eye, name, armor, clothing, shoes, and a character preview.

Name: Empty name.

- Journey
- Classic
- Mediumcore
- Hardcore

Journey characters start with extra equipment. Can only be played on Journey worlds.

Back Create

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

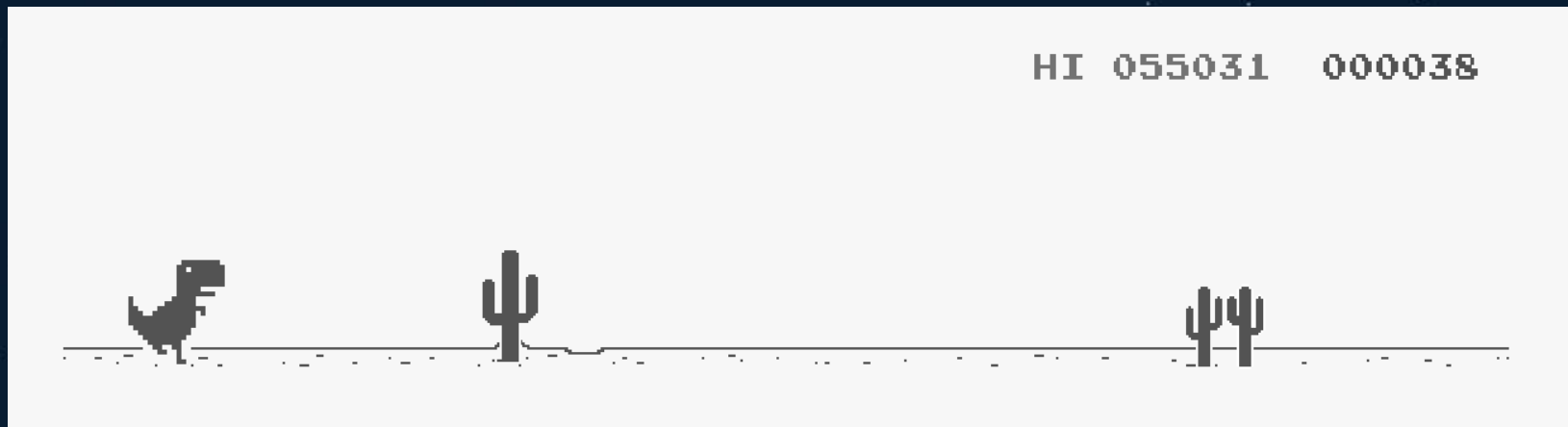
int

INTEGER

```
npc_age = 22
```

```
npc_height = 181
```


EXAMPLE



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

STRING

```
name = "Dino"
```

```
name = 'Dino'
```

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

INTEGER

```
speed = 1
```

```
speed = 100
```

```
speed = 01 # bad
```

CREATE YOUR CHARACTER





katflap joined the game
<Krishhi> Hello World!
<Maxeton> Hi there!
<katflap> Hello There!
<Krishhi> Yipee!

INPUT/OUTPUT



INPUT()

Enter name

INPUT()

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


INPUT()

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

PRINT()

dino

mute



S

PRINT()

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

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

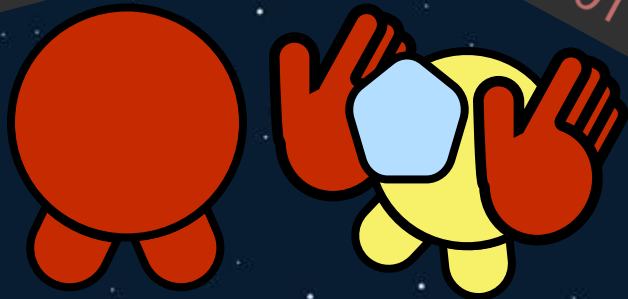
PRINT()

```
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



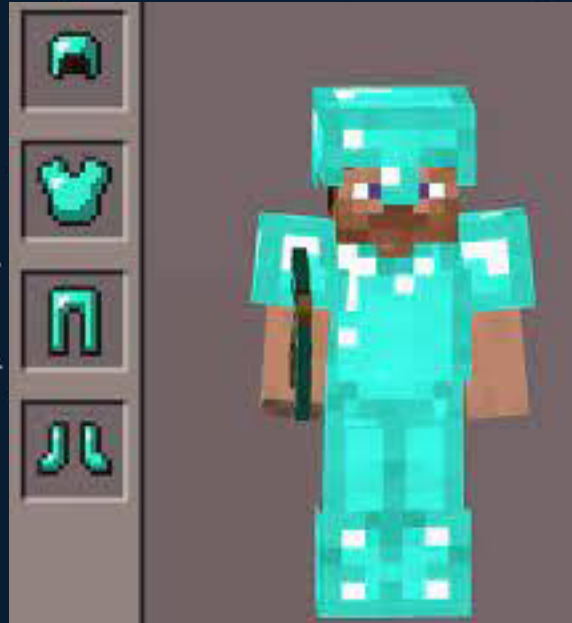
MULTIPLICATION

```
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
```

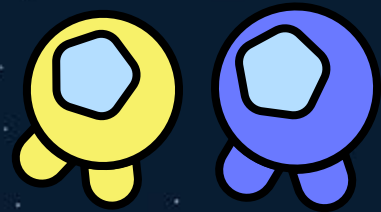

APEX LEGENDS



DECISION MAKING OF COMPUTERS



THINK OF SOME DECISIONS
YOU MADE TODAY





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

