IHF: CODE

PYTHON – SESSION 1

WHAT IS PROGRAMMING?

WHAT IS PYTHON?

WHAT'S IT USED FOR?

WHO USES IT?

HELLO, WORLD!

HELLO, WORLD!

```
print("Hello, World!")
```

TEXT EDITOR

REPL.IT

NAMING PYTHON FILES

```
what_the_script_does.py
```

NAMING PYTHON FILES

```
hello_world.py
number_guess.py
tic_tac_toe.py
calculate_totals.py
send_emails.py
```

NAMING PYTHON FILES

- Lowercase
- Underscore instead of spaces
- No punctuation

WRITING PYTHON

- You are not writing an essay...

HELLO, WORLD!

Code – hello.py:

```
print("Hello, Saf")
```

To Run:

```
$ python hello.py
```

VARIABLES

VARIABLES

```
<variable_name> = <value>
```

VARIABLES

```
name = "Charlie"
age = 27
left_to_pay = 29.99
has_paid = False
```

VARIABLES

- Any mix of letters, numbers and some special characters
  - Must start with a letter
  - Keep lowercase
  - Use underscore where there are spaces

DATA TYPES

STRINGS

STRINGS

Characters surrounded by quotes

```
name = "Alice"
address = "123 Station Road"
favourite_food = "Pizza"
```

ESCAPING

ESCAPING

```
\n = New line
\t = Tab
\" = Double Quote
```

ESCAPING

```
favourite_food = "Pizza from \"Dough N' Sauce\""
shopping_list = "Apples\nBread\nMilk\nEggs"
```

CODING TIME

SECTION A

1. Write code that prints ‘Hello world’
2. Print the numbers 1 to 5 on a single line
3. Write a script where ‘Hello’ and ‘World’ are printed on two separate lines
4. Write a script that prints a list of names, tabbed on separate lines, e.g.

```
My List of Names:
    Alice
    Bob
    Charlie
```

INTEGER

INTEGER

A whole number

```
age = 17
days_in_january = 31
bottles_sitting_on_the_wall = 99
```

FLOAT

FLOAT

A decimal number

```
price = 12.99
percent = 34.57
pi = 3.1415
```

BOOLEAN

BOOLEAN

True or False

```
has_paid = True
vip = False
```

NONE

NONE

Absence of a value

```
last_film_seen = None
items_in_basket = None
```

NUMERICAL OPERATORS

NUMERICAL OPERATORS

OPERATOR	ACTION	EXAMPLE
+	Addition	1 + 2
-	Subtraction	3 - 1
*	Multiplication	3 * 7
/	Division	9 / 3
**	Exponent	4 ** 2
%	Modulus (remainder)	10 % 3

NUMERICAL OPERATORS

```
print(1 + 2)
print(5 - 3)
print(3 * 7)
print(49 / 7)
print(4 ** 2)
print(10 % 3)
```

NUMERICAL OPERATORS

```
x = 3
y = 6
area = x * y
```

CONCATENATION

CONCATENATION

```
first_name = "Bob"
last_name = "Jones"
full_name = first_name + " " + last_name

print("Hello " + first_name)
print("Good morning, " + full_name)
```

ORDER OF OPERATIONS

ORDER OF OPERATIONS

Highest	()	Brackets
	**	Exponent
	*	Multiplication
	/	Division
	+	Addition
Lowest	-	Subtraction

ORDER OF OPERATIONS

```
sum = 4 + 5 * 2

correct_sum = (4 + 5) * 2
```

CODING TIME

SECTION B

SECTION B

1. Write code that prints the value of 2 + 2
2. Write code that prints the value of 5.7 subtracted from 3.4
3. Write code that prints the value of 8 multiplied by 7
4. Write code that prints the value of 144 divided by 12
5. Write code that prints the value of the remainder of 67 divided by 12
6. Write code that finds the value of 20 from `4 - 2 * 6 / 3 *`

FURTHER HELP
GO TO SLI.DO #IHFCODE