Introduction to Python

Week-1

Presented by
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Main Agenda:

- Topic1: Introduction to programming
- Topic2: Print statement
- Topic3: python as a calculator
- Topic4: Variable concept
- Topic5: Data type
- Topic6: logical operation
- Topic7: If..then..else (conditional statement)
- Topic8: Create simple application

- Challenge:

Topic-1: introduction to programming

Topic-2: print statement:

Print in python:

Example: print ("Hello Python")
           Or
         Print('Hello python')

Challenge-1

- Print : 'my name is ..'
- Print: "TAFE NSW"
- Print: 523
- Print 25.9

Topic-3: python as a calculator

Numbers

```
In [6]:  1 + 1
Out[6]:  2

In [7]:  1 * 3
Out[7]:  3

In [8]:  1 / 2
Out[8]:  0.5

In [9]:  2 ** 4
Out[9]:  16

In [10]:  4 % 2
Out[10]:  0

In [11]:  5 % 2
Out[11]:  1

In [12]:  (2 + 3) * (5 + 5)
Out[12]:  50
```

2 to the power 4

Reminder

Challenge-2

- Try them all
- Show 9*9 = ??
- (5/2)*(2+2)

4

Topic-4 variable concept

- What is a variable?

Variable Assignment

```
In [5]: # Can not start with number or special characters
        var1 = 2

In [2]: x = 2
        y = 3

In [3]: z = x + y

In [4]: z
Out[4]: 5

In [6]: var2=2.5

In [7]: var2
Out[7]: 2.5

In [8]: print(var2)

        2.5
```

Challenge-3

- Say there is a variable named var2, store 9.5 there and print it.
- Store 6 in a variable and 3 in b variable. Show how to print a-b and what will be the output?

Topic-4 variable concept

- What is a variable?

Printing

```
In [20]: x = 'hello'

In [21]: x
Out[21]: 'hello'

In [22]: print(x)
         hello

In [23]: num = 12
         name = 'Sam'
```

Challenge-4

- Store your name in a variable and print it.

- Can you print :
    My name is Sam

Topic-4 variable concept

- Concept of string:

Strings

```
In [17]: 'single quotes'

Out[17]: 'single quotes'


In [18]: "double quotes"

Out[18]: 'double quotes'


In [19]: " wrap lot's of other quotes"

Out[19]: " wrap lot's of other quotes"
```

Topic-5 Data type

Python has five standard data types –

- Numbers
- String
- List
- Tuple
- Dictionary

Numbers

```
In [6]: 1 + 1
Out[6]: 2

In [7]: 1 * 3
Out[7]: 3

In [8]: 1 / 2
Out[8]: 0.5

In [9]: 2 ** 4
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In [10]: 4 % 2
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In [11]: 5 % 2
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In [12]: (2 + 3) * (5 + 5)
Out[12]: 50
```

Topic-5 Data type

Python has five standard data types –

- Numbers
- String
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Strings

```
In [17]: 'single quotes'

Out[17]: 'single quotes'


In [18]: "double quotes"

Out[18]: 'double quotes'


In [19]: " wrap lot's of other quotes"

Out[19]: " wrap lot's of other quotes"


In [31]: var='random'


In [32]: print(var)

         random
```

Topic-5 Data type

Python has five standard data types –

- ▢ Numbers
- ▢ String
- ▢ List
- ▢ Tuple
- ▢ Dictionary

Lists

```
In [34]:  my_list = ['a','b','c']

In [35]:  my_list
Out[35]:  ['a', 'b', 'c']

In [40]:  print(my_list[0]) # print first element

          a

In [41]:  print(my_list[1]) # print second element

          b
```

Challenge-5

- Store 254, 365, 897 in a list and retrieve 897   ??

Topic-6 logical operation

Booleans

```
In [40]:  True

Out[40]:  True


In [41]:  False

Out[41]:  False
```

Comparison Operators

```
In [47]:  1 > 2

Out[47]:  False


In [48]:  1 < 2

Out[48]:  True


In [49]:  1 >= 1

Out[49]:  True


In [50]:  1 <= 4

Out[50]:  True


In [51]:  1 == 1

Out[51]:  True


In [52]:  'hi' == 'bye'

Out[52]:  False
```

Topic-7 condition statement

if, elif, else Statements

```
In [56]: if 1 < 2:
             print('Yep!')
```

Yep!

```
In [57]: if 1 < 2:
             print('yep!')
```

yep!

```
In [58]: if 1 < 2:
             print('first')
         else:
             print('last')
```

first

```
In [59]: if 1 > 2:
             print('first')
         else:
             print('last')
```

last

```
In [60]: if 1 == 2:
             print('first')
         elif 3 == 3:
             print('middle')
         else:
             print('Last')
```

middle

Topic-7 condition statement

```
In [46]: var = 100
         if var == 200:
             print ("1 - Got a true expression value")
             print (var)
         elif var == 150:
             print ("2 - Got a true expression value")
             print (var)
         elif var == 100:
             print ("3 - Got a true expression value")
             print (var)
         else:
             print ("4 - Got a false expression value")
             print (var)

         print ("Good bye!")

         3 - Got a true expression value
         100
         Good bye!
```

Topic-7 condition statement

Challenge-6

- Write down what should be the output?

```
In [48]:  var='my name'

          if var== 'a':
              print('wrong name')
              print(var)


          else:
              print (var)
```

Thank You