Lab1-2

Basic syntax, variables, and operators

1. Mini assignment

   a. Use triple quotes (""") to denote string literal more than one line with the following details: firstname, lastname, and address

   b.
```
#1

"""
Name: Konkanok Umnartyuttithum
Student number: 6642003026
Address:    59/1 Charat Mueng Road,
            Rong Mueng Sub-district,
            Pathumwan District,
            Bangkok 10330
"""
```

2. ~~Mini assignment~~

   ~~a. Use multi-line statement to print your firstname and lastname~~

   ~~<<fill your result>>~~

3. Mini assignment

   a. displays the prompt, the statement saying “hello <<your ID>> <<your full name>>

```
12  #3
13
14  print("Hello, Konkanok Umnartyuttithum, 6642003026")

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Documents\file เรียน\PROG PROB\Python after midterm> & C:/U
OG PROB/Python after midterm/lab1-2/main.py"
Hello, Konkanok Umnartyuttithum, 6642003026
```

4. See how multiple commands can be written in one line

```
import sys; x = 'foo'; sys.stdout.write(x + '\n')
3
```

5. Mini assignment

a. Use help function for "print" command

help(print)

```
16  #5-a
17
18  help(print)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Documents\file เรียน\PROG PROB\Python after midterm> & C:/Users/HP/App
OG PROB/Python after midterm/lab1-2/main.py"
Help on built-in function print in module builtins:

print(*args, sep=' ', end='\n', file=None, flush=False)
    Prints the values to a stream, or to sys.stdout by default.

    sep
      string inserted between values, default a space.
    end
      string appended after the last value, default a newline.
    file
      a file-like object (stream); defaults to the current sys.stdout.
    flush
      whether to forcibly flush the stream.
```

b. Use option "sep" and "end" to see the result

i. Use "," for "sep" and use "-" for "end"

```
20  #5-b
21
22  print(1, 2, 3, 4, sep = ":", end = "-")
```

```
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OG PROB/Python after midterm/lab1-2/main.py"
1:2:3:4-
```

~~6. Mini assignment~~

~~a. Use help function for "sys.stdout.write" command~~

~~(This is not straightforward, try yourself Hint: use quote)~~

~~<<fill your result>>~~

7. Mini assignment

a. Print the following values one by one

```
counter = 100          # An integer assignment
miles   = 1000.0       # A floating point
name    = "John"       # A string
```

```
24  #7-a
25
26  counter = 100
27  miles = 1000.00
28  name = "john"
29
30  print(counter, type(counter))
31  print(miles, type(miles))
32  print(name, type(name))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS D:\Documents\file เรียน\PROG PROB\Python after midterm> & C:/Users
OG PROB/Python after midterm/lab1-2/main.py"
100 <class 'int'>
1000.0 <class 'float'>
john <class 'str'>
```

b. Print the following values one by one

```
a,b,c = 1,2,"john"
```

```
34  #7-b
35
36  a, b, c = 1, 2, "john"
37
38  print(a)
39  print(b)
40  print(c)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

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OG PROB/Python after midterm/lab1-2/main.py"
1
2
john
```

c. Print the following values one by one

```
a = b = c = 1
```

```
#7-c

a = b = c = 1

print(a)
print(b)
print(c)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

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OG PROB/Python after midterm/lab1-2/main.py"
1
1
1
```

8. Mini assignment (String)

a. Fill the following output (Note: use parenthesis after print command)

```
str = 'Hello World!'

print str          # Prints complete string
print str[0]       # Prints first character of the string
print str[2:5]     # Prints characters starting from 3rd to 5th
print str[2:]      # Prints string starting from 3rd character
print str * 2      # Prints string two times
print str + "TEST" # Prints concatenated string
```

```
Hello World!
H
llo
llo World!
Hello World!Hello World!
Hello World!TEST
```

9. Mini assignment (List)

a. Fill the following output

```
list = [ 'abcd', 786 , 2.23, 'john', 70.2 ]
tinylist = [123, 'john']

print list          # Prints complete list
print list[0]       # Prints first element of the list
print list[1:3]     # Prints elements starting from 2nd till 3rd
print list[2:]      # Prints elements starting from 3rd element
print tinylist * 2  # Prints list two times
print list + tinylist # Prints concatenated lists
```

```
['abcd', 786, 2.23, 'john', 70.2]
abcd
[786, 2.23]
[2.23, 'john', 70.2]
[123, 'john', 123, 'john']
['abcd', 786, 2.23, 'john', 70.2, 123, 'john']
```

Try

l1 = [1,2,3]

l2 = ['a','b','c']

l1 + l2

```
74  l1 = [1, 2, 3]
75  l2 = ['a', 'b', 'c']
76  print(l1 + l2)
77
```

```
PROBLEMS    TERMINAL    ...

PS D:\Documents\file เรียน\PROG
 C:/Users/HP/AppData/Local/Mic
exe "d:/Documents/file เรียน/PR
lab1-2/main.py"
[1, 2, 3, 'a', 'b', 'c']
```

*Note + used in list means concatenation

10. Mini assignment (Tuple)

    a. Fill the following output

```
tuple = ( 'abcd', 786 , 2.23, 'john', 70.2  )
tinytuple = (123, 'john')

print tuple               # Prints the complete tuple
print tuple[0]            # Prints first element of the tuple
print tuple[1:3]          # Prints elements of the tuple starting from 2nd til
print tuple[2:]           # Prints elements of the tuple starting from 3rd ele
print tinytuple * 2       # Prints the contents of the tuple twice
print tuple + tinytuple   # Prints concatenated tuples
```

```
('abcd', 786, 2.23, 'john', 70.2)
abcd
(786, 2.23)
(2.23, 'john', 70.2)
(123, 'john', 123, 'john')
('abcd', 786, 2.23, 'john', 70.2, 123, 'john')
```

11. Mini assignment (Tuple vs List)

    a. Fill the following output and error

```
tuple = ( 'abcd', 786 , 2.23, 'john', 70.2  )
list = [ 'abcd', 786 , 2.23, 'john', 70.2  ]
tuple[2] = 1000     # Invalid syntax with tuple
list[2] = 1000      # Valid syntax with list
```

```
93  tuple = ("abcd", 786, 2.23, "john", 70.2)
94  lsit = ["abcd", 786, 2.23, "john", 70.2]
95  tuple[2] = 1000
96  list[2] = 1000
```

```
PROBLEMS  TERMINAL  ...   Python + ...

PS D:\Documents\file เรียน\PROG PROB\Python after midterm> &
 C:/Users/HP/AppData/Local/Microsoft/WindowsApps/python3.11.
exe "d:/Documents/file เรียน/PROG PROB/Python after midterm/
lab1-2/main.py"
Traceback (most recent call last):
  File "d:\Documents\file เรียน\PROG PROB\Python after midte
rm\lab1-2\main.py", line 95, in <module>
    tuple[2] = 1000
    ~~~~~^^^
TypeError: 'tuple' object does not support item assignment
PS D:\Documents\file เรียน\PROG PROB\Python after midterm>
```

12. Mini assignment (Dictionary)

a. Fill the following output

```
dict = {}
dict['one'] = "This is one"
dict[2]     = "This is two"

tinydict = {'name': 'john','code':6734, 'dept': 'sales'}


print dict['one']       # Prints value for 'one' key
print dict[2]           # Prints value for 2 key
print tinydict          # Prints complete dictionary
print tinydict.keys()   # Prints all the keys
print tinydict.values() # Prints all the values
```

```
This is one
This is two
{'name': 'john', 'code': 6734, 'dept': 'sales'}
dict_keys(['name', 'code', 'dept'])
dict_values(['john', 6734, 'sales'])
```

***Tip: Use "type(x)" to see data type

12.1

```
personal_info = {
    "first_name": "Konkanok",
    "last_name": "Umnartyuttithum",
    "student_number": "6642003026",
    "age": {
        "year": 18,
        "month": 5,
        "day": 20
    },
    "address": {
        "h_num": "59/1",
        "street": "Charat Mueng",
        "sub-district": "Rong Mueng",
        "district": "Pathumwan",
        "province": "Bangkok",
        "postal": "10330"
    }
}
```