Assignment no.1

Name: Urvi Vijay Patel

Roll No. 4291 Subject: Python Programming

Assignment_1.py A1.py

A1.py > ...

```python
# SOLVED EXAMPLES
# 1.1 Demonstrate use of integer types and operators that can be used on them
print(3/4)
print(3%4)
print(3//4)
print(3**4)

a = 10 ; b = 25 ; c = 15 ; d = 30 ; e = 2 ; f = 3 ; g = 5
w = a+b-c
x = d**e
y = f%g
print(w,x,y)
h = 99999999999999999999999999
i = 54321
print(h*i)
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
Windows PowerShell
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PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python -u "c:\Users\urvip\OneDrive\Desktop\Python Assignments\A1.py"
0.75
3
0
81
20 900 3
5432099999999999999999999945679
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

Assignment_1.py A1.py

A1.py > ...

```python
# 1.2
print("use of float, complex and bool types and operations that can be used on them")
# float
i = 3.5
j = 1.2
print(i%j)
# complex
a = 1+2j
b = 3*(1+2j)
c = a*b
print(a)
print(b)
print(c)
print(a.real)
print(a.imag)
print(a.conjugate())
print(a)
# bool
x = True
y = 3>4
print(x)
print(y)
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python -u "c:\Users\urvip\OneDrive\Desktop\Python Assignments\A1.py"
use of float, complex and bool types and operations that can be used on them
1.1
(1+2j)
(3+6j)
(-9+12j)
1.0
2.0
(1-2j)
(1+2j)
True
False
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

```python
# 1.3
print("Demonstrate how to convert from one number type another")
# convert into int
print(int(3.14))
a = int('485')
b = int(768)
c = a+b
print(c)
print(int('1011', 2))
print(int('341', 8))
print(int('21',16))

# convert to float
print(float(35))
i = float('4.85')
j = float('7.68')
k = i+j
print(k)

# convert to complex
print(complex(35))
x = complex(4.85, 1.1)
y = complex(7.68, 2.1)
z = x+y
print(x)

# convert to bool
print(bool(35))
print(bool(1.2))
print(int(True))
print(int(False))

```

```
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python
Demonstrate how to convert from one number type another
3
1253
11
225
33
35.0
12.53
(35+0j)
(4.85+1.1j)
True
True
1
0
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

Python 3.10.0 64-bit ⊗ 0 ⚠ 0 Ln 32, Col 1 Spaces: 4 UTF-8

Assignment_1.py A1.py

A1.py

```python
# 1.4
print("A program that makes use of built-in mathematical functions")
print(abs(-23))
print(pow(2,4))
print(min(10,20,30,40))
print(max(10,-10,30,50))
print(divmod(17,3))
print(bin(64), oct(64), hex(64))
print(round(2.567), round(2.5678, 2))

```

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```
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PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python -u "c:\Users\urvip\OneDrive\Desktop\Python Assignments\A1.py"
A program that makes use of built-in mathematical functions
23
16
10
50
(5, 2)
0b1000000 0o100 0x40
3 2.57
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

Python 3.10.0 64-bit ⊗ 0 ⚠ 0

Assignment_1.py A1.py

A1.py > ...

```python
#1.5
print("A program that makes use of functions in the math module")
from abc import abstractproperty
import math
x = 1.5357
x1=9
print(math.pi, math.e)
print(math.sqrt(x))
print(math.factorial(x1))
print(math.log(x))
print(math.log10(x))
print(math.exp(x))
print(math.trunc(x))
print(math.floor(x))
print(math.ceil(x))
print(math.trunc(-x))
print(math.floor(-x))
print(math.ceil(-x))
print(math.modf(x))

```

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```
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PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python -u "c
neDrive\Desktop\Python Assignments\A1.py"
A program that makes use of functions in the math module
3.141592653589793 2.718281828459045
1.2392336341465238
362880
0.42898630314951025
0.1863063842699079
4.644575595215059
1
1
2
-1
-2
-1
(0.5357000000000001, 1.0)
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

Python 3.10.0 64-bit ⊗ 0 ⚠ 0 Ln 20, Col 1 Spaces: 4 UTF-8 CRLF

Assignment_1.py A1.py

A1.py

```python
#1.6
print("A program that generates float and integer random numbers")
import random
import datetime
random.seed(datetime.time())
print(random.random())
print(random.random())
print(random.randint(10,100))

```

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PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python -u "c:\Users\urvip\OneDrive\Desktop\Python Assignments\A1.py"
A program that generates float and integer random numbers
c:\Users\urvip\OneDrive\Desktop\Python Assignments\A1.py:5: DeprecationWarning: Seeding based on hashing is deprecated
since Python 3.9 and will be removed in a subsequent version. The only
supported seed types are: None, int, float, str, bytes, and bytearray.
  random.seed(datetime.time())
0.4886382344389709
0.968756526260977
18
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

Python 3.10.0 64-bit ⊗ 0 ⚠ 0

Assignment_1.py A1.py

A1.py

```python
#1.7
print("Identify string, list, tuple, set or dictionary ")
print(type({10,20,30.5}))
print(type([1,2,3.14,'Nagpur']))
print(type({12:'Simple', 43:'Complicated', 13:'Complex'}))
print(type("Check it out"))
print(type(3+2j))

```

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PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python -u "c:\Users\urvip\OneDrive\Desktop\Python Assignments\A1.py"
Identify string, list, tuple, set or dictionary
<class 'set'>
<class 'list'>
<class 'dict'>
<class 'str'>
<class 'complex'>
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

Python 3.10.0 64-bit ⊗ 0 ⚠ 0

Assignment_1.py A1.py

A1.py > ...

```python
# ****Unsolved Programs****
#1.2.1
print("A program that swaps values without a third variable")
a = 8
b = 23
a,b=b,a
print('a=',a)
print('b=',b)

#1.2.2
print("Use of Trignometric fuctions in math module")
import math
a = math.pi/6
print("The value of sine of pi/6 is", end='')
print(math.sin(a))
print("The value of cosine of pi/6 is", end='')
print(math.cos(a))

```

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PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python -u "c:\Users\urvip\OneDrive\Desktop\Python Assignments\A1.py"
A program that swaps values without a third variable
a= 23
b= 8
Use of Trignometric fuctions in math module
The value of sine of pi/6 is0.49999999999999994
The value of cosine of pi/6 is0.8660254037844387
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

Python 3.10.0 64-bit ⊗ 0 ⚠ 0

Assignment_1.py A1.py

A1.py > ...

```python
#1.2.3
print("A program that generate 5 random numbers in the range 10 to 50")
import random
import time
random.seed(6)
for i in range(5):
    print(random.randint(10,50))
t = int(time.time())
random.seed(t)
for i in range(5):
    print(random.randint(10,50))
print("")
#1.2.4
import math
print(math.floor(-2.8))
print(math.trunc(-2.8))
print(math.ceil(-2.8))
print(math.floor(-0.5))
print(math.trunc(-0.5))
print(math.ceil(-0.5))
print(math.floor(1.5))
print(math.trunc(1.5))
print(math.ceil(1.5))
print(math.floor(2.9))
print(math.trunc(2.9))
print(math.ceil(2.9))
```

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```
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PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python -u "c:
rive\Desktop\Python Assignments\A1.py"
A program that generate 5 random numbers in the range 10 to 50
46
15
41
26
12
24
47
37
22
35

-3
-2
-2
-1
0
0
1
1
2
2
2
3
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

Assignment_1.py A1.py

A1.py > ...

```python
#1.2.5
print("Convert Fahrenheit into Centigrade")
farh = 212
cen = ((farh-32)*5/9)
print(farh,"farenheit =",cen,"centigrade")
```

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```
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PS C:\Users\urvip\OneDrive\Desktop\Python Assignments> python -u "c:\Users\urvip\OneDrive\Desktop\Python Assignments\A1.py"
Convert Fahrenheit into Centigrade
212 farenheit = 100.0 centigrade
PS C:\Users\urvip\OneDrive\Desktop\Python Assignments>
```

Python 3.10.0 64-bit ⊗ 0 ⚠ 0