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Subject: Python Programming

Solved Program Assignment -1

The screenshot shows the PyCharm IDE with a Python file named `program.py`. The code defines variables of various types and prints their types and values. The Run console shows the output of the program.

```
# Variable type and Assignment
1 print(type(35))
2 print(type(3.14))
3 a = 10
4 print(type(a))
5 a = 31.4
6 print(type(a))
7 a = 'Hi'
8 print(type(a))
9 a = 'Jamboree'
10 print(type(a))
11 a = 10
12 print(a)
13 pi = 3.14
14 print(pi)
15 name = 'Sanjay'
16 print(name)
```

Run console output:

```
<class 'int'>
<class 'float'>
<class 'int'>
<class 'float'>
<class 'str'>
<class 'str'>
10
3.14
Sanjay
Process finished with exit code 0
```

The screenshot shows the PyCharm IDE with a Python file named `program.py`. The code demonstrates various arithmetic operators and their results. The Run console shows the output of the program.

```
# Arithmetic Operators
1 a = 4/2
2 print(a)
3 a = 7 % 2
4 print(a)
5 b = 3 ** 4
6 print(b)
7 c = 4 // 3
8 print(b)
9 a **= 3
10 print(a)
11 b %= 10
12 print(b)
```

Run console output:

```
2.0
1
81
81
1
1
Process finished with exit code 0
```

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assignments venv program.py

```
1 # Operation Nounce
2 print(10//3)
3 print(-10//3)
4 print(10//-3)
5 print(-10//3)
6 print(3//10)
7 print(3//-10)
8 print(-3//10)
9 print(-3//-10)
10 print(10 % 3)
11 print(-10 % 3)
12 print(10 % -3)
13 print(-10 % -3)
14 print(3 % 10)
15 print(3 % -10)
16 print(-3 % 10)
17 print(-3 % -10)
```

Run: program

```
C:\Users\HP\PycharmProjects\assignments\venv\Scripts\python.exe C:/Users/HP/P
3
-4
-4
3
0
-1
-1
0
1
2
-2
-1
3
-7
7
-3

Process finished with exit code 0
```

17:16 CRLF UTF-8 4 spaces Python 3.8 (assignments)

File Edit View Navigate Code Refactor Run Tools VCS Window Help Assignment1(3S).py - C:\Users\HP\PycharmProjects\assignments\venv\program.py

assignments venv program.py

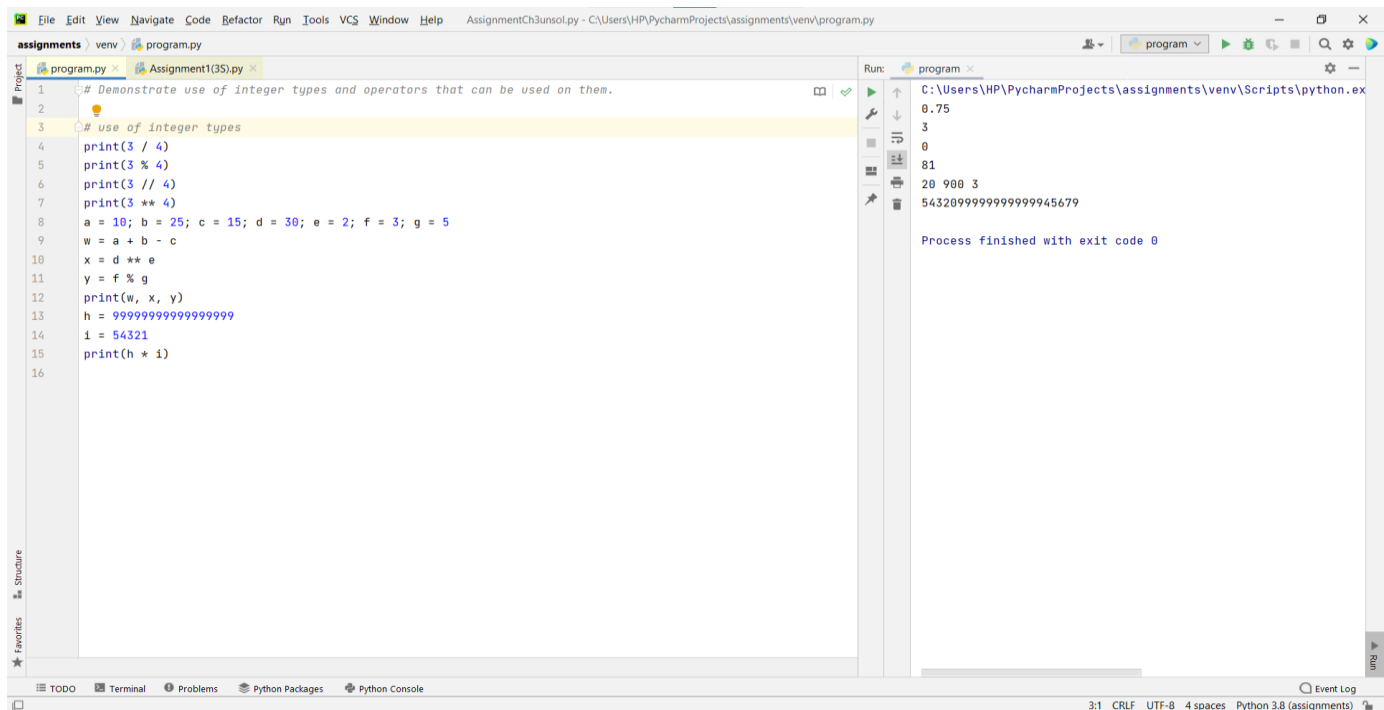
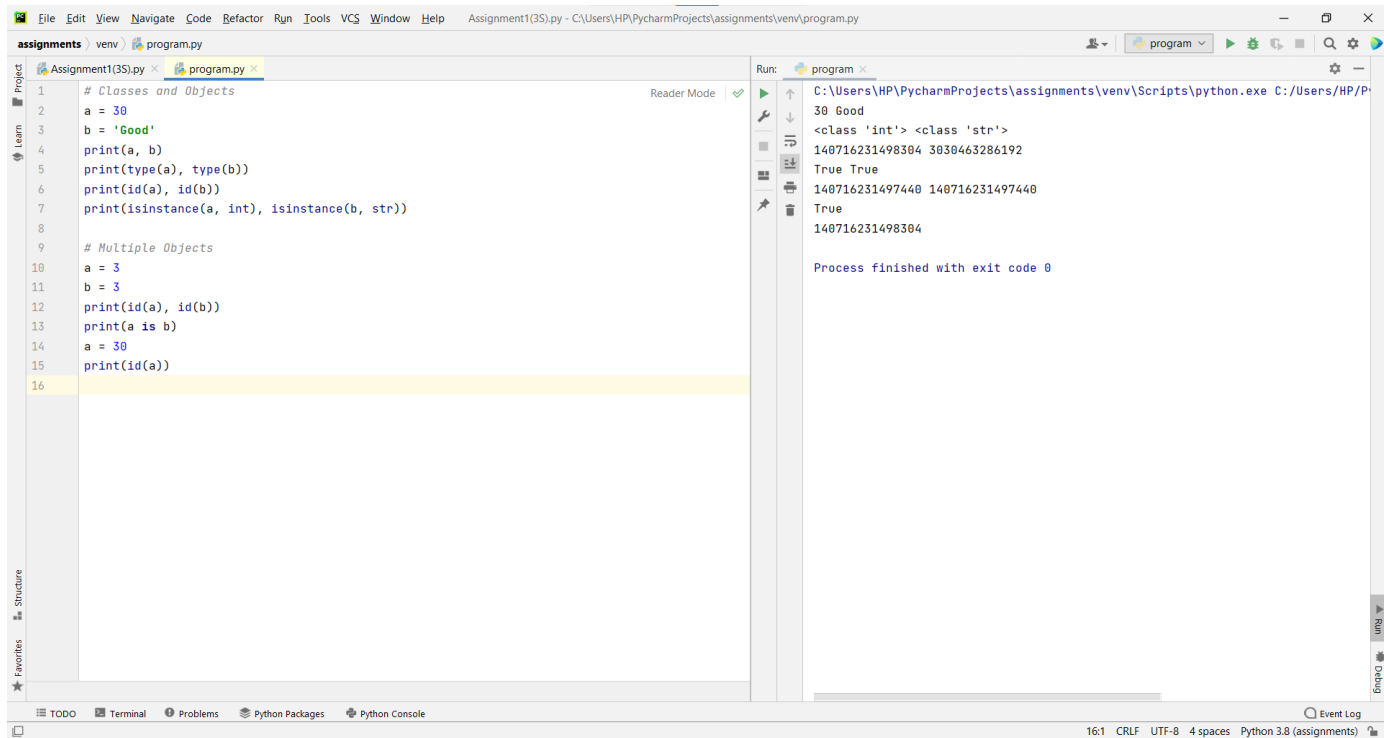
```
1 # Built-in function
2 a = abs(-3)
3 print(a)
4 print(min(10, 20, 30, 40))
5 print(hex(26))
6
7 # Built-in modules
8 import math
9 import random
10 print(math.factorial(5))
11 print(math.degrees(math.pi))
12 print(random.random())
13
14 # Container types
15 lst = [10, 20, 30, 20, 30, 40, 50, 10]
16 tpl = ('Let Us Python', 350, 195.00)
17 s = {10, 20, 30, 40}
18 dct = {'ME101': 'SOM', 'EE101': 'Electronics'}
19 print(lst[0], tpl[2])
20 print(dct['ME101'])
21
22
23
```

Run: program

```
C:\Users\HP\PycharmProjects\assignments\venv\Scripts\python.exe C:/Users/HP/P
3
10
0x1a
120
180.0
0.9087494113314926
10 195.0
SOM

Process finished with exit code 0
```

13:1 CRLF UTF-8 4 spaces Python 3.8 (assignments)



File Edit View Navigate Code Refactor Run Tools VCS Window Help AssignmentCh3unsol.py - C:\Users\HP\PycharmProjects\assignments\venv\program.py

assignments venv program.py

program.py Assignment1(35).py

```
1 #Demonstrate use of float, complex and bool types and opertors that can be used on them.
2
3 # use of float
4 i = 3.5
5 j = 1.2
6 print(i % j)
7
8 # use of complex
9 a = 1+2j
10 b = 3 + (1 + 2j)
11 c = a * b
12 print(a)
13 print(b)
14 print(c)
15 print(a.real)
16 print(a.imag)
17 print(a.conjugate())
18 print(a)
19
20 # use of bool
21 x = True
22 y = 3 > 4
23 print(x)
24 print(y)
25
26
27
```

Run: program

C:\Users\HP\PycharmProjects\assignments\venv\Scripts\python.exe

```
1.1
(1+2j)
(3+6j)
(-9+12j)
1.0
2.0
(1-2j)
(1+2j)
True
False
```

Process finished with exit code 0

Event Log

2:1 CRLF UTF-8 4 spaces Python 3.8 (assignments)

File Edit View Navigate Code Refactor Run Tools VCS Window Help AssignmentCh3unsol.py - C:\Users\HP\PycharmProjects\assignments\venv\program.py

assignments venv program.py

program.py Assignment1(35).py

```
1 # Demonstrate how to convert from one number type to another.
2 # convert to int
3 print(int(3.14))
4 a = int('485')
5 b = int('768')
6 c = a + b
7 print(c)
8 print(int('1011', 2))
9 print(int('341', 8))
10 print(int('21', 16))
11
12 # convert to float
13 print(float(35))
14 i = float('4.85')
15 j = float('7.68')
16 k = i + j
17 print(k)
18
19 # convert to complex
20 print(complex(35))
21 x = complex(4.85, 1.1)
22 y = complex(7.68, 2.1)
23 z = x + y
24 print(z)
25
26 # convert to bool
27 print(bool(35))
28 print(bool(1.2))
29 print(int(True))
30 print(int(False))
31
```

Run: program

C:\Users\HP\PycharmProjects\assignments\venv\Scripts\python.exe

```
3
1253
11
225
33
35.0
12.53
(35+0j)
(12.53+3.2j)
True
True
1
0
```

Process finished with exit code 0

Event Log

31:1 CRLF UTF-8 4 spaces Python 3.8 (assignments)

File Edit View Navigate Code Refactor Run Tools VCS Window Help AssignmentCh3unsol.py - C:\Users\HP\PycharmProjects\assignments\venv\program.py

assignments venv program.py

```
1 # Write a program that makes use of built-in mathematical functions.
2
3 # built-in functions
4 print(abs(-25))
5 print(pow(2, 4))
6 print(min(10, 20, 30, 40, 50))
7 print(max(10, 20, 30, 40, 50))
8 print(divmod(17, 3))
9 print(bin(64), oct(64), hex(64))
10 print(round(2.567), round(2.5678, 2))
11
```

Run: program x

C:\Users\HP\PycharmProjects\assignments\venv\Scripts\python.exe

```
25
16
10
50
(5, 2)
0b1000000 0o100 0x40
3 2.57
```

Process finished with exit code 0

11:1 CRLF UTF-8 4 spaces Python 3.8 (assignments)

File Edit View Navigate Code Refactor Run Tools VCS Window Help AssignmentCh3unsol.py - C:\Users\HP\PycharmProjects\assignments\venv\program.py

assignments venv program.py

```
1 # Write a program that makes use of functions in the math module.
2
3 # mathematical functions from math module
4 import math
5 x = 1.5357
6 print(math.pi, math.e)
7 print(math.sqrt(x))
8 print(math.factorial(6))
9 print(math.fabs(x))
10 print(math.log(x))
11 print(math.log10(x))
12 print(math.exp(x))
13 print(math.trunc(x))
14 print(math.floor(x))
15 print(math.ceil(x))
16 print(math.trunc(-x))
17 print(math.floor(-x))
18 print(math.ceil(-x))
19 print(math.modf(x))
20
```

Run: program x

C:\Users\HP\PycharmProjects\assignments\venv\Scripts\python.exe

```
3.141592653589793 2.718281828459045
1.2392336341465238
720
1.5357
0.42898630314951025
0.1863063842699079
4.644575595215059
1
1
2
-1
-2
-1
(0.5357000000000001, 1.0)
```

Process finished with exit code 0

20:1 CRLF UTF-8 4 spaces Python 3.8 (assignments)

