Assignment: 03

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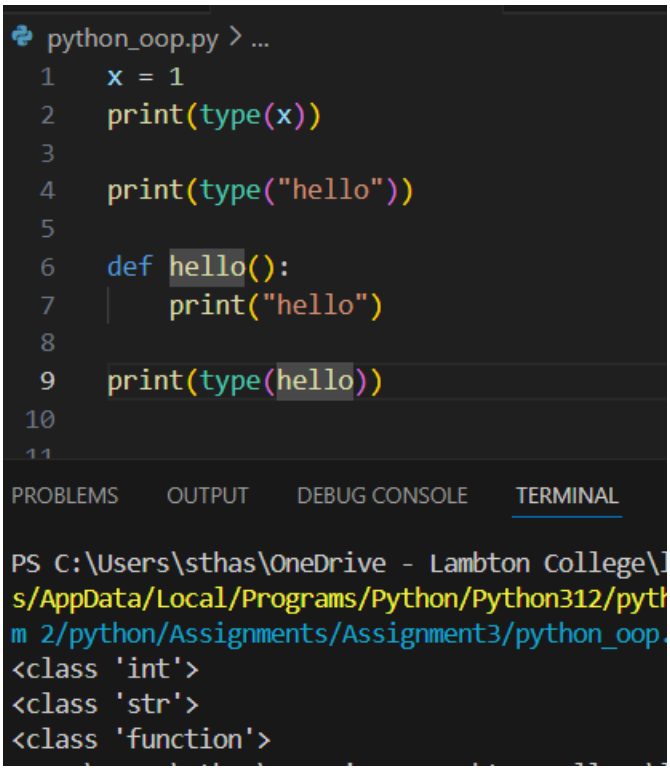
Student Name : Shreejana Shrestha

Objects and methods



```
11
12    string = "hello"
13    print(string.upper())
14
15
16
17
18
```

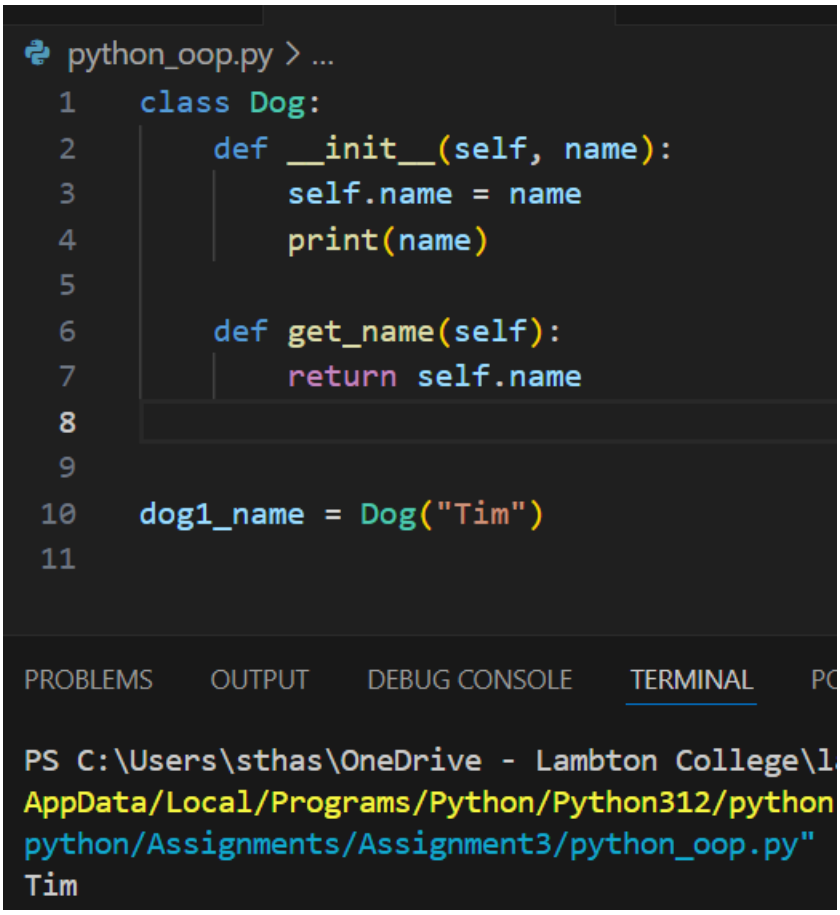
```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMI

PS C:\Users\sthas\OneDrive - Lambton Col
s/AppData/Local/Programs/Python/Python31
m 2/python/Assignments/Assignment3/pytho
HELLO
```

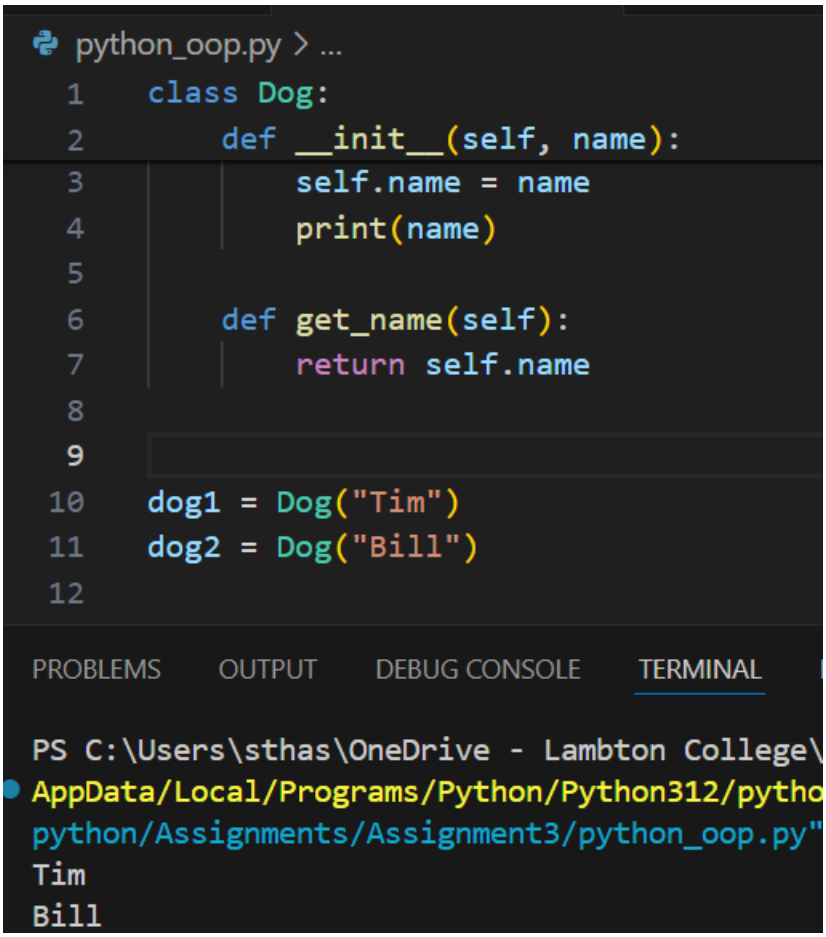
Class and Methods inside class

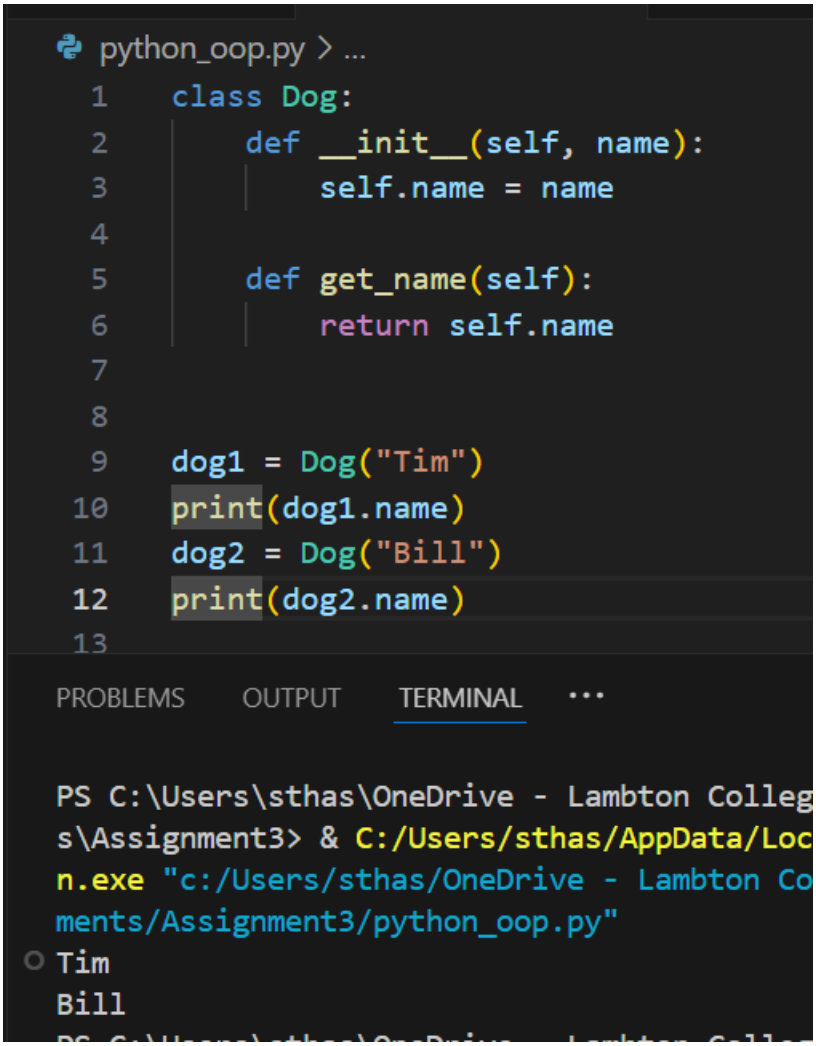
```
python_oop.py > ...
15
16    class Dog:
17        def bark(self):
18            print("bark")
19
20    d = Dog()
21    d.bark()
22    print(type(d))
23
```

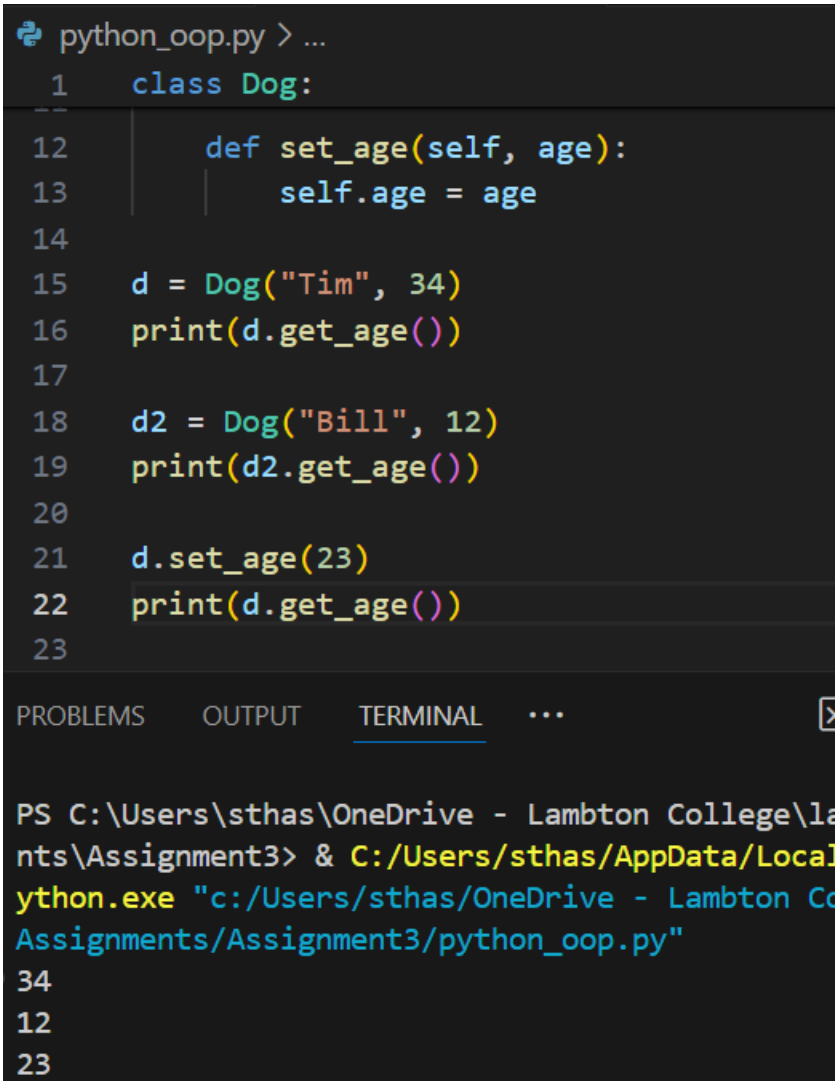
```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERM

PS C:\Users\sthas\OneDrive - Lambton Co
s/AppData/Local/Programs/Python/Python3
m 2/python/Assignments/Assignment3/pyth
bark
<class '__main__.Dog'>
```

__init__ method

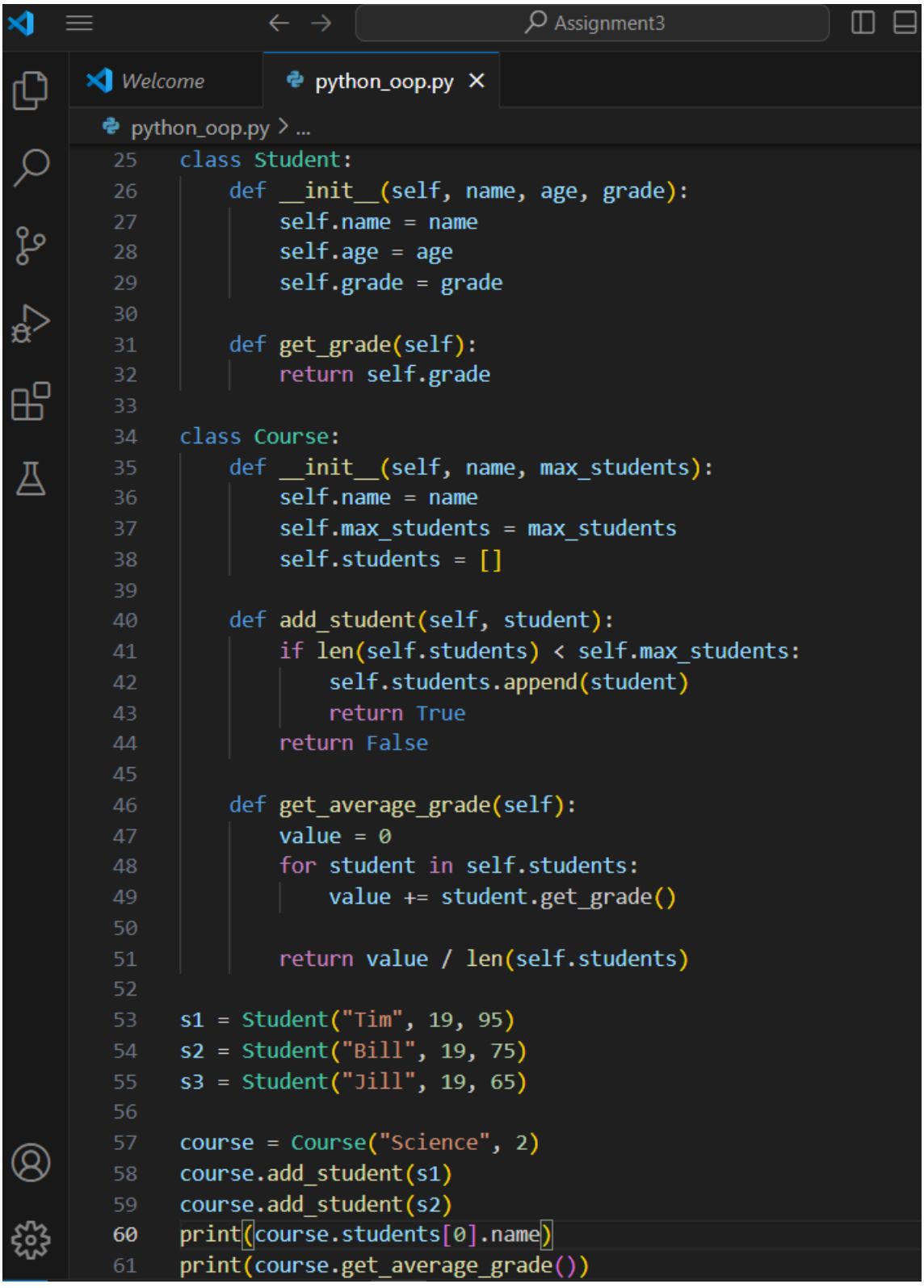

python_oop.py > ...
1 class Dog:
2 def __init__(self, name):
3 self.name = name
4 print(name)
5
6 def get_name(self):
7 return self.name
8
9
10 dog1_name = Dog("Tim")
11
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PS C:\Users\sthas\OneDrive - Lambton College\l
AppData/Local/Programs/Python/Python312/python
python/Assignments/Assignment3/python_oop.py"
Tim


python_oop.py > ...
1 class Dog:
2 def __init__(self, name):
3 self.name = name
4 print(name)
5
6 def get_name(self):
7 return self.name
8
9
10 dog1 = Dog("Tim")
11 dog2 = Dog("Bill")
12
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PS C:\Users\sthas\OneDrive - Lambton College\
AppData/Local/Programs/Python/Python312/pytho
python/Assignments/Assignment3/python_oop.py"
Tim
Bill

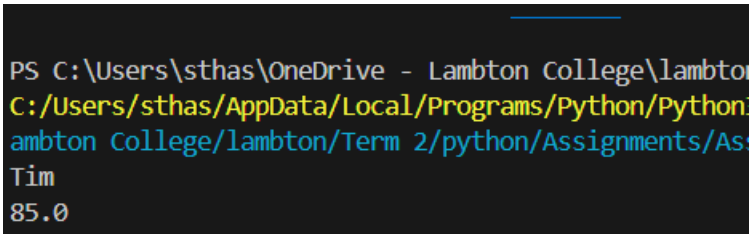

python_oop.py > ...
1 class Dog:
2 def __init__(self, name):
3 self.name = name
4
5 def get_name(self):
6 return self.name
7
8
9 dog1 = Dog("Tim")
10 print(dog1.name)
11 dog2 = Dog("Bill")
12 print(dog2.name)
13
PROBLEMS
OUTPUT
TERMINAL
PS C:\Users\sthas\OneDrive - Lambton Colleg
s\Assignment3> & C:/Users/sthas/AppData/Loc
n.exe "c:/Users/sthas/OneDrive - Lambton Co
ments/Assignment3/python_oop.py"
Tim
Bill


python_oop.py > ...
class Dog:
def set_age(self, age):
self.age = age
d = Dog("Tim", 34)
print(d.get_age())
d2 = Dog("Bill", 12)
print(d2.get_age())
d.set_age(23)
print(d.get_age())
PROBLEMS
OUTPUT
TERMINAL
PS C:\Users\sthas\OneDrive - Lambton College\la
nts\Assignment3> & C:/Users/sthas/AppData/Local
ython.exe "c:/Users/sthas/OneDrive - Lambton Co
Assignments/Assignment3/python_oop.py"
34
12
23

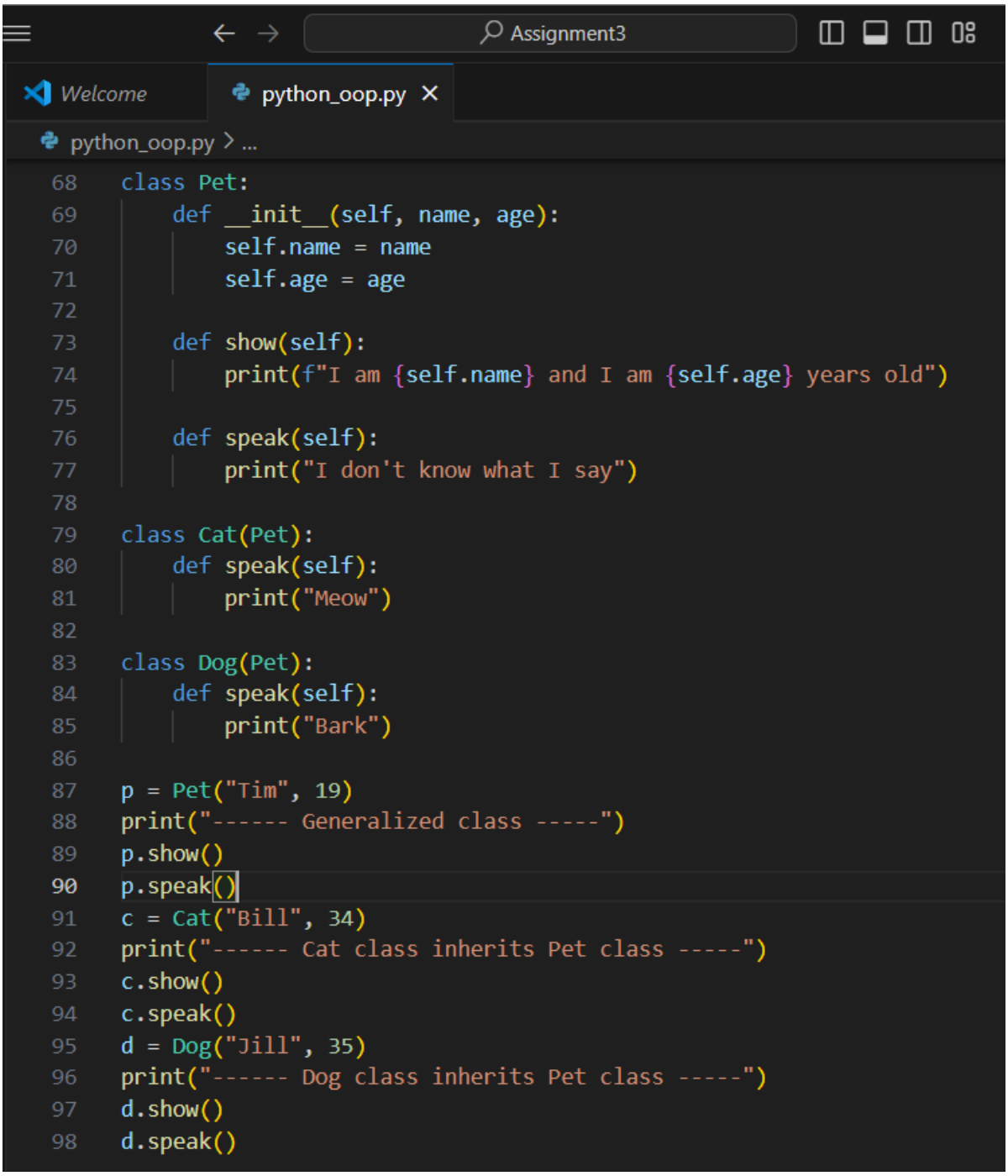
Multiple classes and adding students



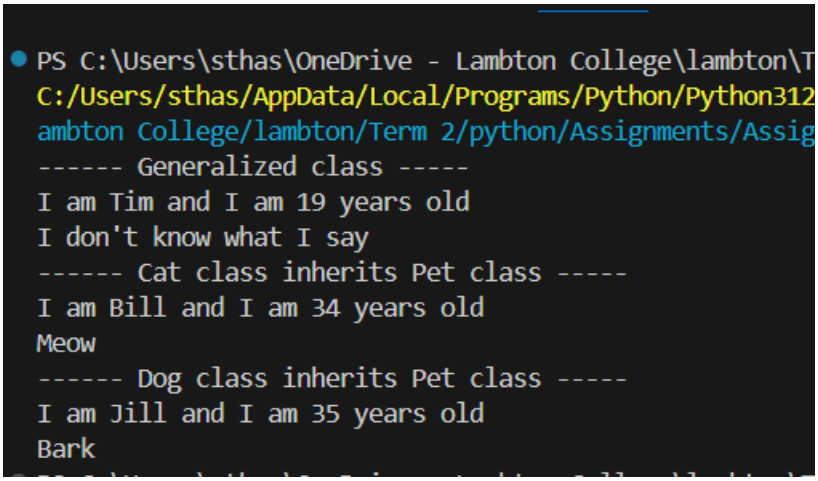
Output

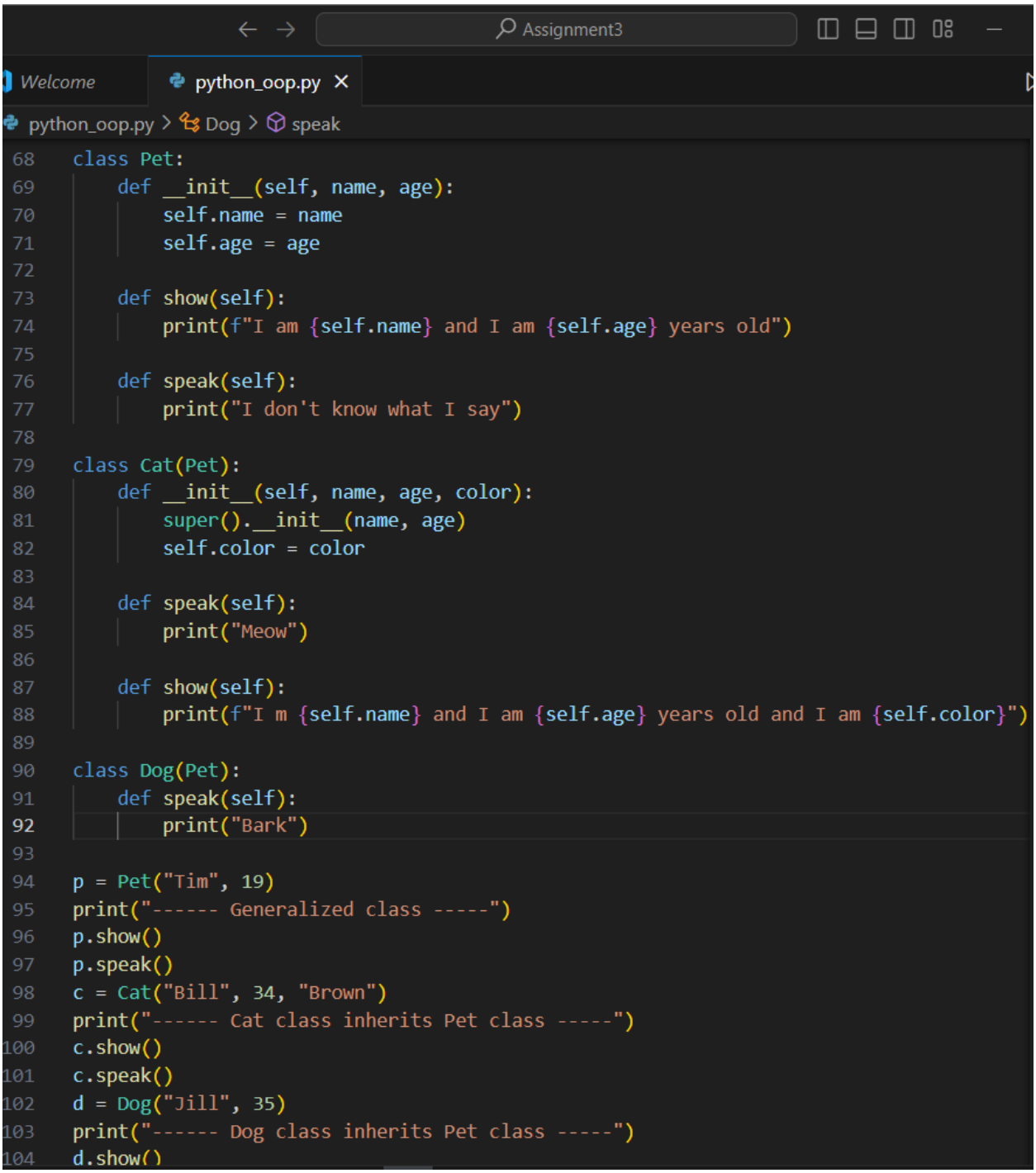

PS C:\Users\sthas\OneDrive - Lambton College\lambto
C:/Users/sthas/AppData/Local/Programs/Python/Python
ambton College/lambton/Term 2/python/Assignments/As
Tim
85.0

Inheritance



Output


PS C:\Users\sthas\OneDrive - Lambton College\lambton\T
C:/Users/sthas/AppData/Local/Programs/Python/Python312
ambton College/lambton/Term 2/python/Assignments/Assig
------ Generalized class -----
I am Tim and I am 19 years old
I don't know what I say
------ Cat class inherits Pet class -----
I am Bill and I am 34 years old
Meow
------ Dog class inherits Pet class -----
I am Jill and I am 35 years old
Bark


Assignment3
Welcome
python_oop.py
python_oop.py > Dog > speak
class Pet:
def __init__(self, name, age):
self.name = name
self.age = age
def show(self):
print(f"I am {self.name} and I am {self.age} years old")
def speak(self):
print("I don't know what I say")
class Cat(Pet):
def __init__(self, name, age, color):
super().__init__(name, age)
self.color = color
def speak(self):
print("Meow")
def show(self):
print(f"I m {self.name} and I am {self.age} years old and I am {self.color}")
class Dog(Pet):
def speak(self):
print("Bark")
p = Pet("Tim", 19)
print("------ Generalized class -----")
p.show()
p.speak()
c = Cat("Bill", 34, "Brown")
print("------ Cat class inherits Pet class -----")
c.show()
c.speak()
d = Dog("Jill", 35)
print("------ Dog class inherits Pet class -----")
d.show()

Output

```
s/AppData/Local/Programs/Python/Python312/python.exe "c:
m 2/python/Assignments/Assignment3/python_oop.py"
------ Generalized class -----
I am Tim and I am 19 years old
I don't know what I say
------ Cat class inherits Pet class -----
I m Bill and I am 34 years old and I am Brown
Meow
------ Dog class inherits Pet class -----
I am Jill and I am 35 years old
Bark
```

Class attributes

python_oop.py > ...

```
109
110   class Person:
111       number_of_people = 0
112
113       def __init__(self, name):
114           self.name = name
115           Person.number_of_people += 1
116
117   p1 = Person("Tim")
118   print(Person.number_of_people)
119   p2 = Person("Jill")
120
121   Person.number_of_people = 8
122   print(p2.number_of_people)
123
124   Person.number_of_people = 9
125   print(p1.number_of_people)
126
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\sthas\OneDrive - Lambton College\lambton\Term
s/AppData/Local/Programs/Python/Python312/python.exe "c:/
m 2/python/Assignments/Assignment3/python_oop.py"
1
8
9
```

Class methods

python_oop.py > ...

```
109
110   class Person:
111       number_of_people = 0
112
113       def __init__(self, name):
114           self.name = name
115           Person.add_person()
116
117       @classmethod
118       def number_of_people_(cls):
119           return cls.number_of_people
120
121       @classmethod
122       def add_person(cls):
123           cls.number_of_people += 1
124
125   p1 = Person("Tim")
126   p2 = Person("Jill")
127   print(Person.number_of_people_())
128
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\sthas\OneDrive - Lambton College\lambton\Term
s/AppData/Local/Programs/Python/Python312/python.exe "c:/U
m 2/python/Assignments/Assignment3/python_oop.py"
2
```

Static method