Republic of the Philippines
City of Olongapo
GORDON COLLEGE
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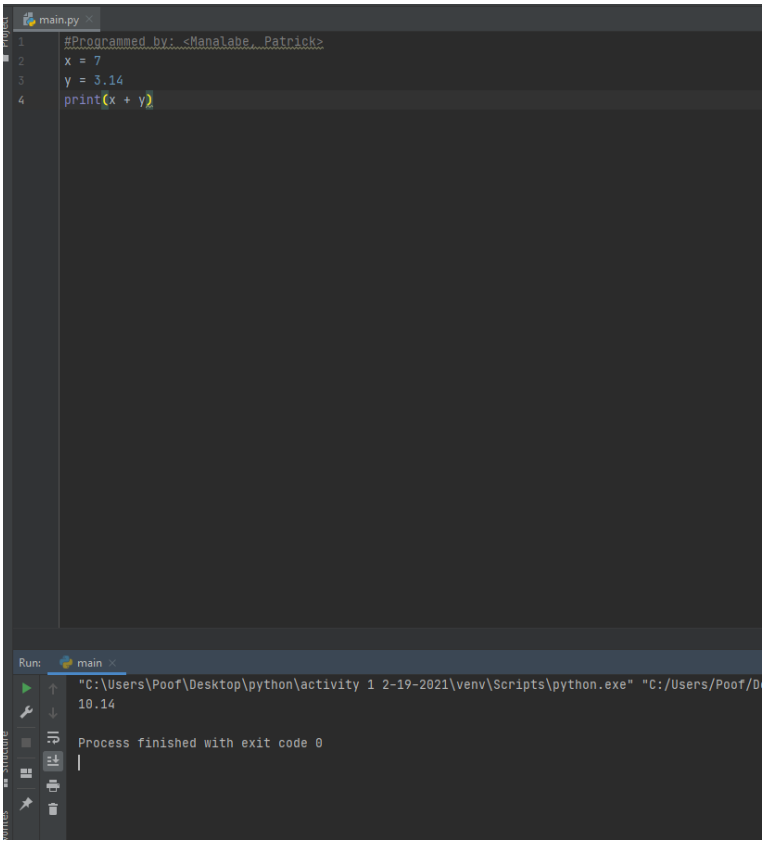
CS Elective 4: Python Programming

Topic: Variables, Data Types & Lists — *Lab. Activity 1*

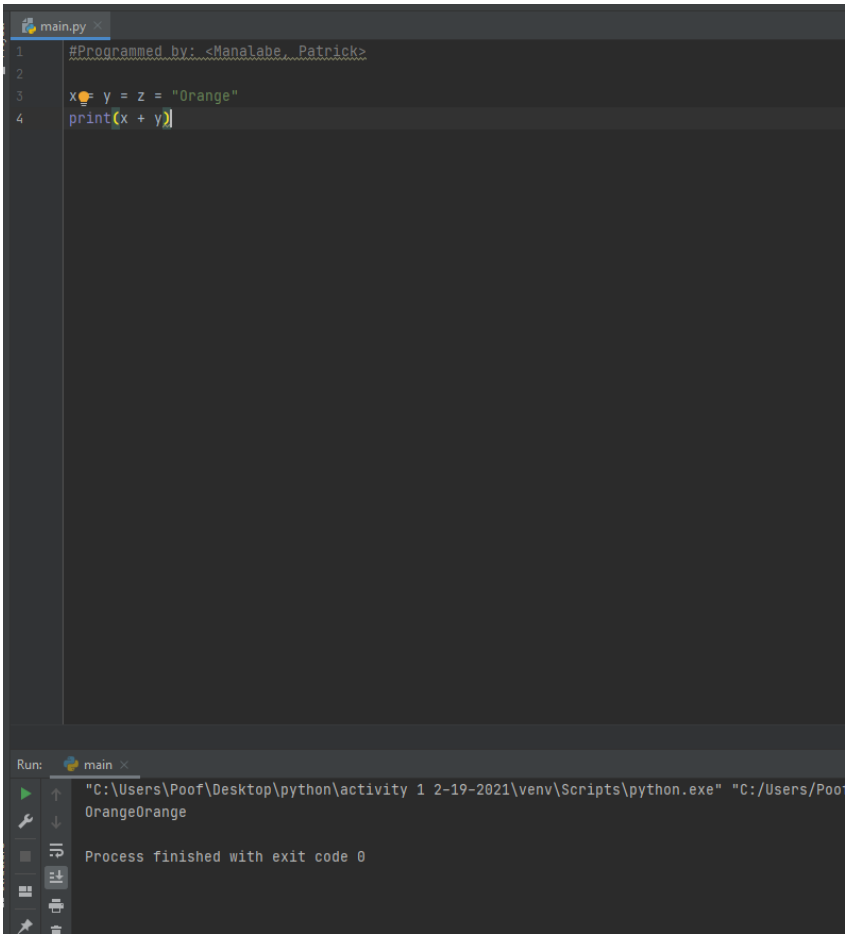
Design a Python program that will answer and simulate the following problems:

1. If x = 7 and y = 3.14, can we add the two given numbers?
   If Yes ❼ How?, If No ❼ Why?



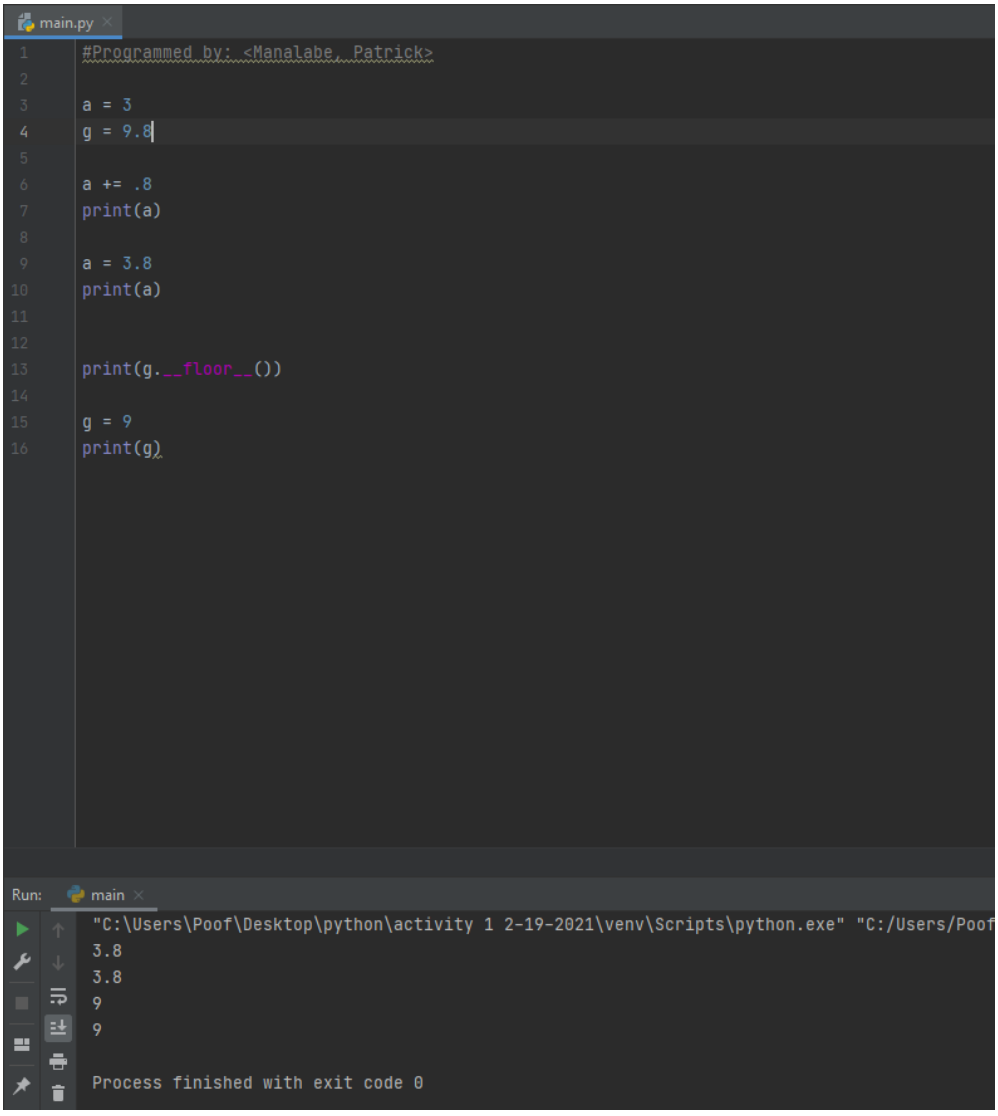
Yes, we can, python automatically converts integers to floats unlike other programming language where you need to use typecast first before adding them.

2. If x = y = z = “Orange”, what will be its value if we add x and y?



The output is OrangeOrange

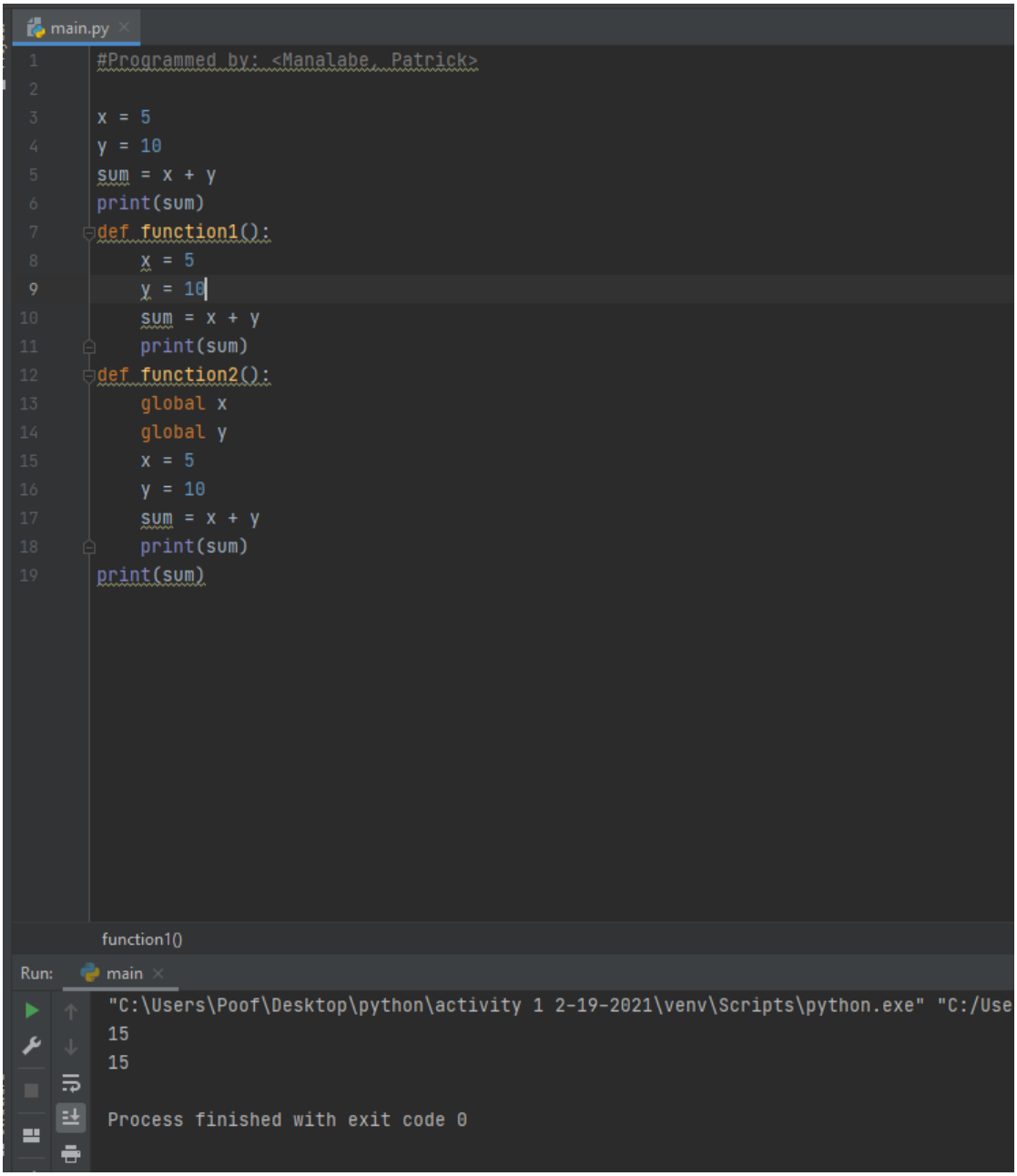
3. If a = 3 and g = 9.8, how can we turn/change a = 3.8 and g = 9?



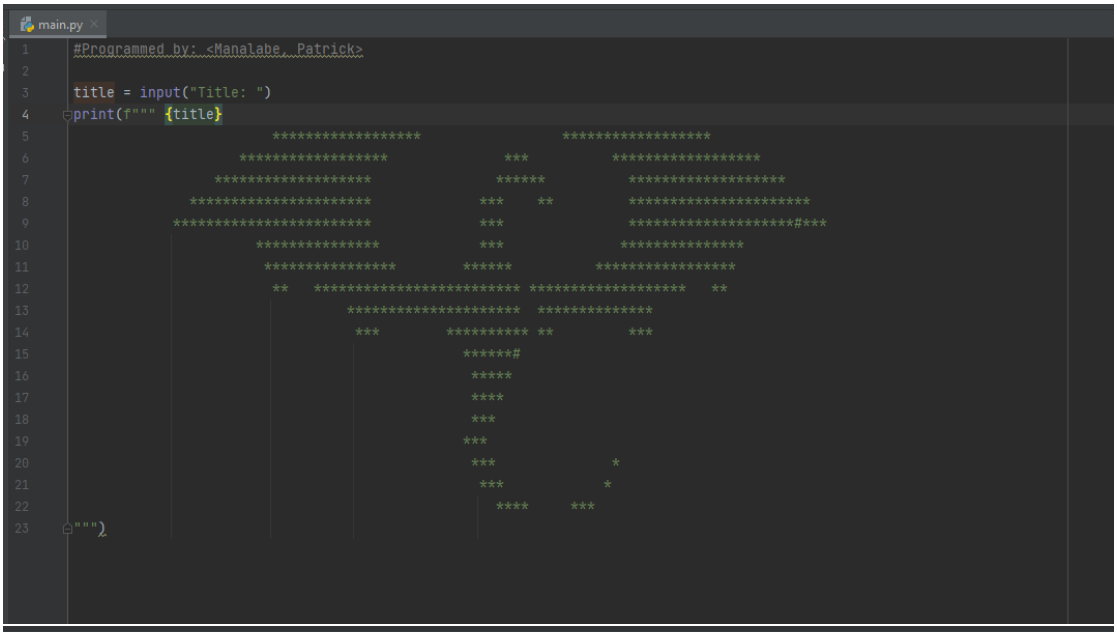
4. What will be the output of the algorithm:

```
X = 5                   #declared as global
Y = 10                  #declared as global
Sum = X + Y
Print(Sum)
        Function1 ( )       #function 1
        X = 10              #declared as local
```

```
        Y = 5                   #declared as local
        Sum = X + Y
        Print(Sum)
            Function2           #function 2
            X = 5               #declared as local
            Y = 10               #declared as global
            Sum = X + Y
            Print(Sum)
Print(Sum)
```

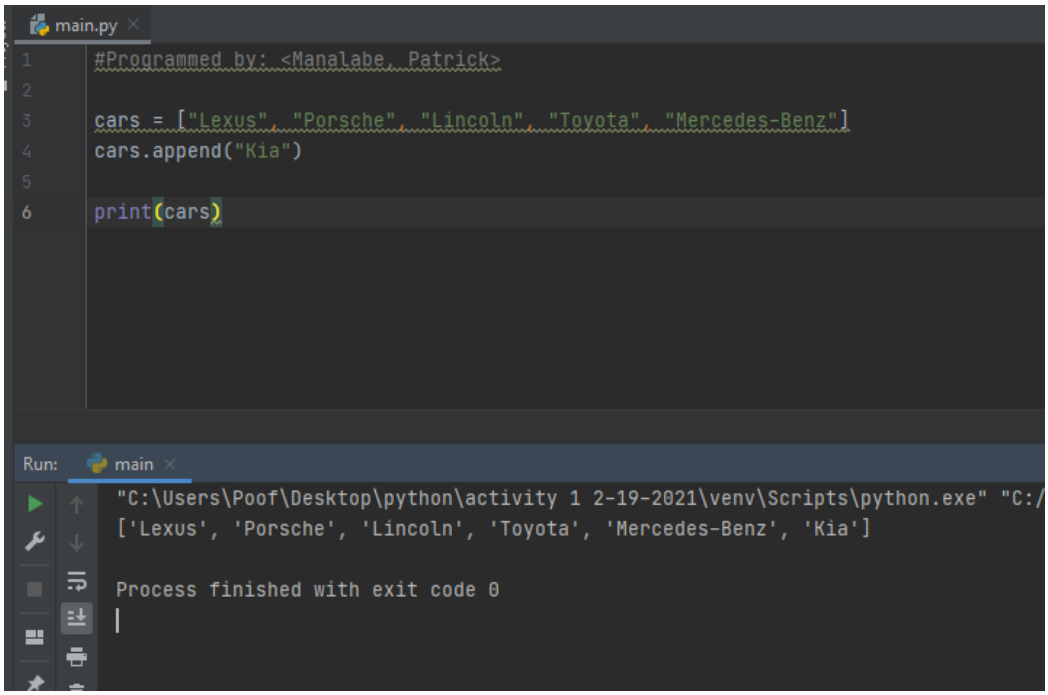


5. Using the print() function, design an image using the “*” symbol, include the name or the title of the image as input string.

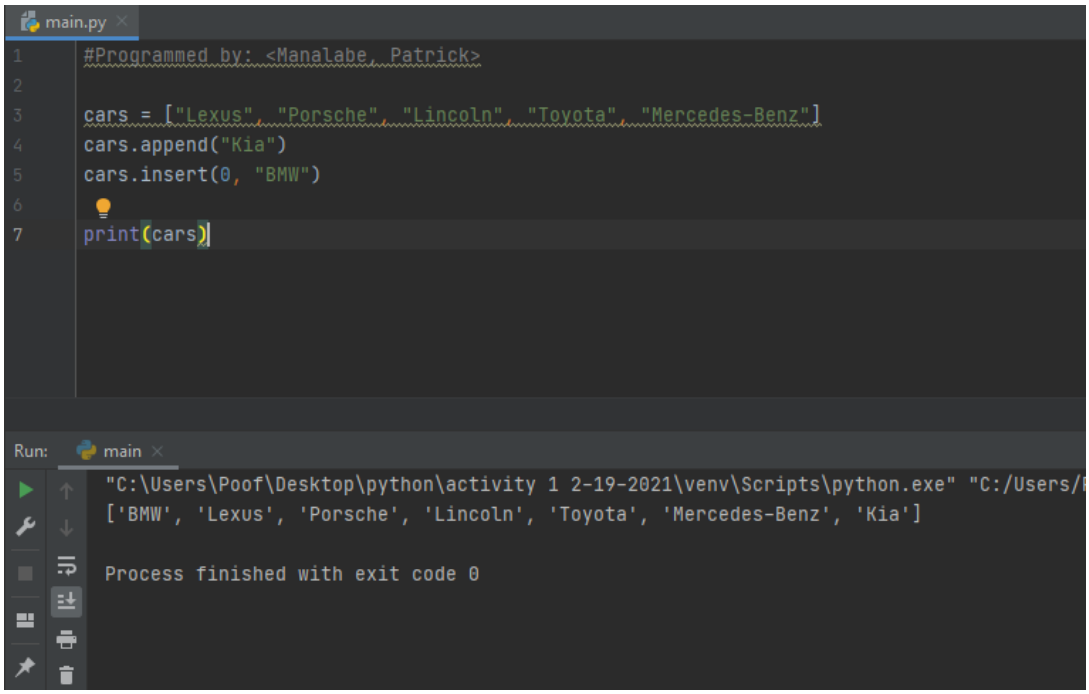


6. Design a Python program that will implement List structure on the following procedures:

a. Initial car lists are: [Lexus, Porsche, Lincoln, Toyota, Mercedes-Benz]
b. Add Kia at the end of the list



c. Add BMW at the beginning of the list



d. Add Honda between Porsche and Lincoln

```
#Programmed by: <Manalabe, Patrick>

cars = ["Lexus", "Porsche", "Lincoln", "Toyota", "Mercedes-Benz"]
cars.append("Kia")
cars.insert(0, "BMW")
cars.insert(3,"Honda ")

print(cars)
```

```
"C:\Users\Poof\Desktop\python\activity 1 2-19-2021\venv\Scripts\python.exe" "C:/Users/Poof/Desktop/pyt
['BMW', 'Lexus', 'Porsche', 'Honda ', 'Lincoln', 'Toyota', 'Mercedes-Benz', 'Kia']

Process finished with exit code 0
```

e. Delete Lincoln and replace it with Hyundai

```
#Programmed by: <Manalabe, Patrick>

cars = ["Lexus", "Porsche", "Lincoln", "Toyota", "Mercedes-Benz"]
cars.append("Kia")
cars.insert(0, "BMW")
cars.insert(3,"Honda")
cars.pop(4)
cars.insert(4,"Hyundai")

print(cars)
```

```
"C:\Users\Poof\Desktop\python\activity 1 2-19-2021\venv\Scripts\python.exe" "C:/Users/Poof/Desktop/python
['BMW', 'Lexus', 'Porsche', 'Honda', 'Hyundai', 'Toyota', 'Mercedes-Benz', 'Kia']

Process finished with exit code 0
```

f. Replace the last car with Subaru

g. Find the middle of the list and insert Audi

h. Count the number of cars in the list and display them in order

```python
#Programmed by: <Manalabe, Patrick>

cars = ["Lexus", "Porsche", "Lincoln", "Toyota", "Mercedes-Benz"]
cars.append("Kia")
cars.insert(0, "BMW")
cars.insert(3,"Honda")
cars.pop(4)
cars.insert(4,"Hyundai")
cars.pop()
cars.append("Subaru")
middle = int(len(cars) / 2)
cars.insert(middle, "Audi")

total = int(len(cars))
print(f"Total cars: {total}")
for car in cars:
    print(car)
```

```
"C:\Users\Poof\Desktop\python\activity 1 2-19-2021\venv\Scripts\python.exe" "C:/Use
Total cars: 9
BMW
Lexus
Porsche
Honda
Audi
Hyundai
Toyota
Mercedes-Benz
Subaru

Process finished with exit code 0
```

i. Sort the list in alphabetical order

```python
#Programmed by: <Manalabe, Patrick>

cars = ["Lexus", "Porsche", "Lincoln", "Toyota", "Mercedes-Benz"]
cars.append("Kia")
cars.insert(0, "BMW")
cars.insert(3,"Honda")
cars.pop(4)
cars.insert(4,"Hyundai")
cars.pop()
cars.append("Subaru")
middle = int(len(cars) / 2)
cars.insert(middle, "Audi")

sortedList = sorted(cars)

print(sortedList)
```

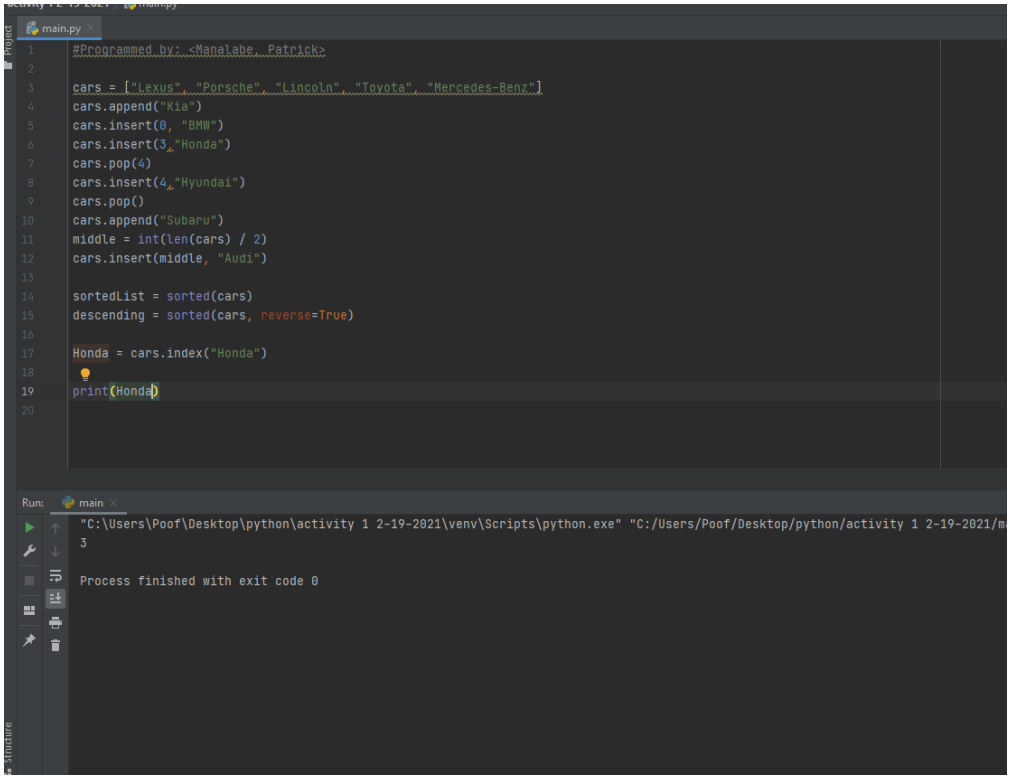
```
Run: main
"C:\Users\Poof\Desktop\python\activity 1 2-19-2021\venv\Scripts\python.exe" "C:/Users/Poof/Desktop/python/activ
['Audi', 'BMW', 'Honda', 'Hyundai', 'Lexus', 'Mercedes-Benz', 'Porsche', 'Subaru', 'Toyota']

Process finished with exit code 0
```

j. Display the list in descending order

```python
#Programmed by: <Manalabe, Patrick>

cars = ["Lexus", "Porsche", "Lincoln", "Toyota", "Mercedes-Benz"]
cars.append("Kia")
cars.insert(0, "BMW")
cars.insert(3,"Honda")
cars.pop(4)
cars.insert(4,"Hyundai")
cars.pop()
cars.append("Subaru")
middle = int(len(cars) / 2)
cars.insert(middle, "Audi")

sortedList = sorted(cars)
descending = sorted(cars, reverse=True)

print(descending)
```

```
Run: main
"C:\Users\Poof\Desktop\python\activity 1 2-19-2021\venv\Scripts\python.exe" "C:/Users/Poof/Desktop/python/activity 1
['Toyota', 'Subaru', 'Porsche', 'Mercedes-Benz', 'Lexus', 'Hyundai', 'Honda', 'BMW', 'Audi']

Process finished with exit code 0
```

k. Determine the location of Honda



l. Determine the location of Hyundai

```python
#Programmed by: <Manalabe, Patrick>

cars = ["Lexus", "Porsche", "Lincoln", "Toyota", "Mercedes-Benz"]
cars.append("Kia")
cars.insert(0, "BMW")
cars.insert(3,"Honda")
cars.pop(4)
cars.insert(4,"Hyundai")
cars.pop()
cars.append("Subaru")
middle = int(len(cars) / 2)
cars.insert(middle, "Audi")

sortedList = sorted(cars)
descending = sorted(cars, reverse=True)

Hyundai = cars.index("Hyundai")
Honda = cars.index("Honda")

print(Hyundai)
```

```
"C:\Users\Poof\Desktop\python\activity 1 2-19-2021\venv\Scripts\python.exe" "C:/User
5

Process finished with exit code 0
```

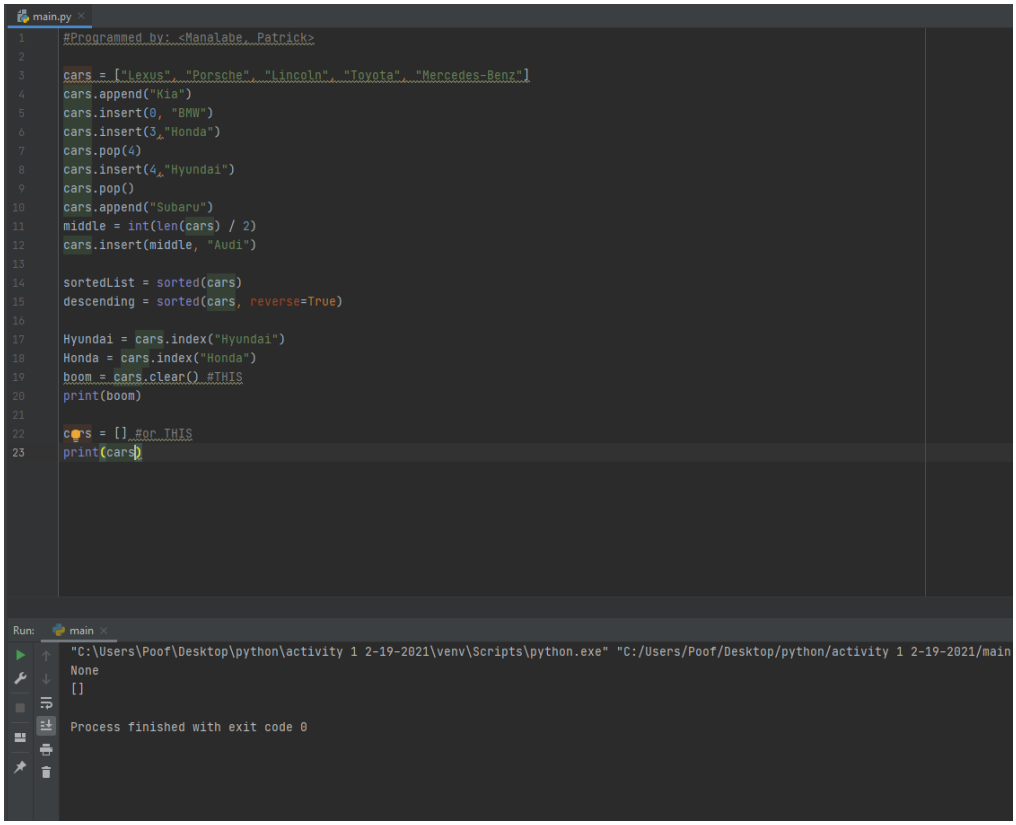
m. What will be the output if we find Lincoln and it is not in the list?

n. Determine the car as the last element in the list

```python
#Programmed by: <Manalabe, Patrick>

cars = ["Lexus", "Porsche", "Lincoln", "Toyota", "Mercedes-Benz"]
cars.append("Kia")
cars.insert(0, "BMW")
cars.insert(3,"Honda")
cars.pop(4)
cars.insert(4,"Hyundai")
cars.pop()
cars.append("Subaru")
middle = int(len(cars) / 2)
cars.insert(middle, "Audi")

sortedList = sorted(cars)
descending = sorted(cars, reverse=True)

Hyundai = cars.index("Hyundai")
Honda = cars.index("Honda")
Lincoln = cars.index("Lincoln ")

print(Lincoln)
```

```
"C:\Users\Poof\Desktop\python\activity 1 2-19-2021\venv\Scripts\python.exe" "C:/Users/Poof/Desktop/python/activ
Traceback (most recent call last):
  File "C:\Users\Poof\Desktop\python\activity 1 2-19-2021\main.py", line 19, in <module>
    Lincoln = cars.index("Lincoln ")
ValueError: 'Lincoln ' is not in list

Process finished with exit code 1
```

o. Delete all the list and display a null or an empty list



Instructions:

- Include as comment your full name on every code that you made using the format: #Programmed by: <Last Name, First Name>
- Make screenshots of your codes and the corresponding output as you Build and Run your programs.
- Same screenshots with another programmer will divide your score based on how many of you who has the same screenshots.
- Submit your work in PDF format via GC-LAMP. Only one document file per student.