(17-A) Simple OOP Practice

Simple OOP Project (1): Animal and Dog

```python
class Animal:

    def __init__(self):
        print("Animal created")

    def whoAmI(self):
        print("Animal")

    def eat(self):
        print("Eating")


class Dog(Animal):

    def __init__(self):
        super().__init__()

        print("Dog created")

    def whoAmI(self):
        print("Dog")

    def bark(self):
        print("Woof!")
```

왼쪽 code를 설명하고 아래 code 결과를 보이시오

정답

```python
d = Dog()
d.whoAmI()
d.eat()
d.bark()
```

정답

Simple OOP Project (2):   Circle

- Implement Circle Class with the following specification
  - The value of π is 3.141592
  - The area( ) method returns the area of a circle
  - The setRadius( ) method sets a new value for the radius
  - The getRadius( ) method gets the current radius

  - The usage of Circle Class is as follows

정답

```
c = Circle()

c.setRadius(5)
print(c.getRadius())
print(c.area())
```

```
class Circle():

```

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Simple OOP Project (3): Shape and Others

```python
#An example of a class
class Shape:

    def __init__(self, x, y):
        self.x = x
        self.y = y
        self.description = "This shape has not been described yet"
        self.author = "Nobody has claimed to make this shape yet"

    def area(self):
        return self.x * self.y

    def perimeter(self):
        return 2 * self.x + 2 * self.y

    def describe(self, text):
        self.description = text

    def authorName(self, text):
        self.author = text

    def scaleSize(self, scale):
        self.x = self.x * scale
        self.y = self.y * scale
```

정답

• 위의 code를 설명하시오

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아래 code의 수행결과를 쓰시오

```python
rectangle = Shape(100, 45)

#finding the area of your rectangle:
print(rectangle.area())

#finding the perimeter of your rectangle:
print(rectangle.perimeter())

#describing the rectangle
rectangle.describe("A wide rectangle, more than twice\
 as wide as it is tall")

#making the rectangle 50% smaller
rectangle.scaleSize(0.5)

#re-printing the new area of the rectangle
print(rectangle.area())
```

정답

Simple OOP Project (3): Shape and Others [2/2]

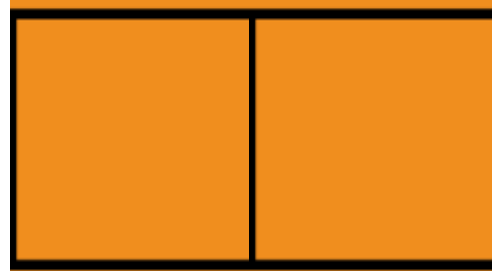- Square class를 Shape class를 이용하여 만드시오.

정답

```
class Square(Shape):
```

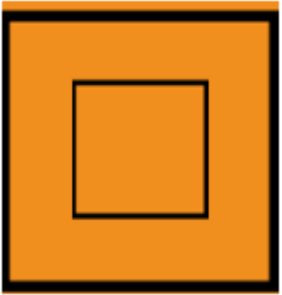- Double Square class를 Square class를 이용하여 만드시오

정답

```
class DoubleSquare(Square):
```

Simple OOP Project (3):   Shape and Others

- Inside Double Square class를 Square class를 이용하여 만드시오
- 내부에 있는 square는 외부 square의 1/4 면적을 가진다고 가정하시오

정답

```
class InsideDoubleSquare(Square):

```