Module 4: Object Oriented Programming in Python

Assignment Solution

edureka!

1. Write a Regular Expression that will match a date that follows the following standard "YYYY-MM-DD".

2. Write a Regular Expression that will match a traditional SSN.

3. Write a Regular Expression that will match an IPv4 address.

4. Write a Regular Expression that will match an email address.

Solution

1. \d{4}\-\d{2}\-\d{2}

2. \d{3}\-\d{2}\-\d{4}

3. \d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}

4. .+\@\w+\.\w{2,3}

There can be alternate expressions to the above too. They can be tested with inputs. Test data can be any text.

5. Below is the program to calculate the area of a box. Check how it is working. Correct the program (if required).

```python
class Box:

    def area(self):

        return width * height

    def __init__(self, width, height):

        self.width = width

        self.height = height

# Create an instance of Box.

x = Box(10, 2)

# Print area.

print(x.area())
```

Solution

```python
class Box:
    def area(self):
        return self.width * self.height
    def __init__(self, width, height):
        self.width = width
        self.height = height
# Create an instance of Box.
x = Box(10, 2)
# Print area.
print(x.area())
```

6. Write a program to calculate distance so that it takes two Points (x1, y1) and (x2, y2) as arguments and displays the calculated distance, using Class.

Solution

```python
import math
class Point:
    pass
first = Point()
second = Point()
first.x = float(input('Pls enter the x co-ordinate of the first point:'))
first.y = float(input('Pls enter the y co-ordinate of the first point:'))
second.x = float(input('Pls enter the x co-ordinate of the second point:'))
second.y = float(input('Pls enter the y co-ordinate of the second point:'))
def dist(original,final):
```

```
    dist = math.sqrt((original.x - final.x) * (original.x - final.x) + (original.y - final.y) *
(original.y - final.y))

    return dist

dist = dist(first, second)

print('Distance between two points ' + str(dist))
```

7. Correct the below program so that output should appear like this.

- [Expected output: x-value: 5 y-value: 7]

Program:

```
class Point:

    def __init__(self, x=0, y=0):

        self.x = x

        self.y = y

    def __str__(self):

        return "x-value: " + str(self.x) + " y-value: " + str(self.y)

    def __add__(self,other):

        p.x = self.x+other.x

        p.y = self.y+other.y

        return p

p1 = Point(3,4)

p2 = Point(2,3)

print (p1+p2)
```

Solution

```python
class Point:
    def __init__(self, x=0, y=0):
        self.x = x
        self.y = y
    def __str__(self):
        return "x-value: " + str(self.x) + " y-value: " + str(self.y)
    def __add__(self,other):
        p = Point()
        p.x = self.x+other.x
        p.y = self.y+other.y
        return p
p1 = Point(3,4)
p2 = Point(2,3)
print (p1+p2)
Output:
x-value: 5 y-value: 7
```