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Section-24

CSE 111 Lab assignment 8

Task-1

```
class ComplexNumber(RealNumber):
    def __init__(self, real=1.0, imaginary=1.0):
        super().__init__(float(real))
        self.imaginary = float(imaginary)
    def __str__(self):
        return "RealPart: "+str(self.getRealValue
        ())+"\n"+"ImaginaryPart: "+ str(self.
                                        imaginary)
```

Task-2

```
class ComplexNumber(RealNumber):
    def __init__(self,real,imaginary):
        super().__init__(int(str(real)))
        self.imaginary = imaginary
    def __str__(self):
        if self.imaginary >0:
            return str(self.number) + "+"
                str(self.imaginary) + "i"
```

```
        else:
            return str(self.number)+
                   imaginary) + "i"

    def __add__(self,other):
        x = self.number + other.num
        y = self.imaginary + other.im
        return complexNumber(x,y)
    def __sub__(self,other):
        x = self.number - other.num
        y = self.imaginary - other.imagi
        return complexNumber(x,y)
```

task-3

```
class Account:
    def __init__(self,balance)
        se

lass CheckingAccount(Account):
    numberofAccount = 0
    def __init__(self,amount=0,
        super().__init
```

```
def __str__(self):
    return "Account Balance:" + str(self.
                                    getBalance())
```

task-4

```
class Mango(Fruit):
    def __init__(self, formalin=True, name=
                                    "Mango"):
        super().__init__(formalin=formalin,
                         name=name)

    def __str__(self):
        return "Mangos are bad for you"

class Jackfruit(Fruit):
    def __init__(self, formalin=False, name
                    = "Jackfruit"):
        super().__init__(formalin=formalin,
                         name=name)

    def __str__(self):
        return "Jackfruits are good for you"
```

Task-5

```
Class ScienceExam(Exam):
    def __init__(self, marks, time, *s
        super().__init__(marks)
        self.time = time
        self.subjects = subjects
    def examSyllabus(self):
        output = super().examSyllabu
        for sub in self.subjects:
            output += "," + sub
        return output
    def examParts(self):
        output = super().examParts()
        for sub in self.subjects:
            output += f"Part {self.subjec
                index(sub) + 3} - {sub}\n
        return output
def __str__(self):
    return f"Marks: {self.mark
    : {self.time}
```

pants: {len(self.subjects)+2}"

Task-6

```
class Sphere(Shape3D):
    def __init__(self, name, radius):
        super().__init__(name, radius)
        print(f"Shape name: {self.name}, Area
              Formula: 4*pi*r*r")

    def calc_surface_area(self):
        self.area = super().calc_surface_
            area()*2*self.__radius

    def __str__(self):
        return f"Radius: {self._radius}, Height
            :{self._height}\nArea:{self.area}"

class Cylinder(Shape3D):
    def __init__(self, name, radius, height):
        super().__init__(name, radius)
        self.height = height
        print(f"Shape name: {self.__name},
          Area Formula: 2*pi*r*(r+h)")
```

```
    def calc_surface_area(self):
        self.area = super().calc_sur
            ()*(self._radius)+self.
    def __str__(self):
        return f"Radius: {self._radius}
            : {self.height}\nArea: {sel
```

Task-7

```
class PokemonExtra(PokemonBasic):
    def __init__(self, *args):
        self.args = args
        if len(args) == 4:
            super().__init__(args[0], args
                args[2], args[3])
        else:
            super().__init__(args[0], args[
                args[2], args[3])
            self.x = args[4]
            self.y = args[5]
```

```
def get_type(self):
    if len(self.args) == 4:
        return super().get_type()
    else:
        return f"super().get_type()},
          secondary type :{self.x}"

def get_move(self):
    if len(self.args) == 4:
        return super().get_move()
    else:
        return f"{super().get_move()},
                \nother move :{self.y},
                    {self.z}"
```

Task-8

```
class FootBallTeam(Team):
    def __init__(self, name, total_player=11):
        super().__init__(name)
        self.name = name
        self.total_player = total_player
```

```
    def info(self):
        print(f"Our name is {self.name
        print(f"we play Football")
        super().info()

class CricketTeam(Team):
    def __init__(self,name,total_player=
        super().__init__(name)
        self.name = name
        self.total_player = total_player
    def info(self):
        print(f"Our name is {self.name}")
        print(f"we play Cricket")
        super().info()
```

Task-9

```
class Pikachu(Pokemon):
    def __init__(self):
        super().__init__("Pikachu")
        self.pokemon_type = "Electric"
        self.pokemon_weakness="~~water, Ground~~
                ~~and Rock~~" - " c
```

```
    def what_am_i(self):
        super().what_am_i()
        print(f"I am a {self.pokemon}.")

class Charmander(Pokemon):
    def __init__(self):
        super().__init__("charmander")
        self.pokemon_type = "Fire"
        self.pokemon_weakness = "Water,
                Ground and Rock"

    def what_am_i(self):
        super().what_am_i()
        print(f"I am a {self.pokemon}.")
```

Task-10

```
class CSE(Department):
    def __init__(self, name, id, s):
        super().__init__(s)
        self.name = name
        self.id = id
    def student_info(self):
        super().student_info()
```

```
    def courses(self, c1, c2, c3):
        self.c1 = c1
        self.c2 = c2
        self.c3 = c3
        print(f"Courses Approved to this
            student in \n{self.semester}
                                semester:")
        print(f"{self.c1}\n{self.c2}\n{self
class EEE(Department):
    def __init__(self, name, id, s):
        super().__init__(s)
        self.name = name
        self.id = id
    def student_info(self):
        super().student_info()
def courses(self, c1, c2, c3):
    self.c1 = c1
    self.c2 = c2
    self.c3 = c3
    print(f"Courses Approved to this EEE
        student in \n{self.semester}
print(f"{self.c1}\n{self.c2}\n{self.semester}")
```

task-11

class A

obj	instance variable		
a1	self. temp	self. sum	self. y
DHAKA	~~4~~ ~~2~~ 3	~~1~~ ~~7~~ 15	~~2~~ ~~2~~ 5

method A

m	n	x
1	1	~~0~~ 3
1	2	~~0~~ 4

class B

obj	instance variable				b
b1	self. temp	self. sum	self. y	self. x	None
Binam pur	~~4~~ ~~2~~ ~~1~~ 2	~~1~~ ~~7~~ ~~2~~ ~~7~~ 18	~~2~~ ~~2~~ ~~5~~ 7	1	

method B

m	n	y
3	2	~~0~~ 2
6	-2	~~0~~ 4

obj	instance variable			
b2	self. temp	self. sum	self. y	self. x
Dinaj	~~4~~	~~x~~	~~2~~	~~x~~
pub	~~x~~	~~7~~	~~2~~	~~x~~
	3	~~2~~	10	6
		~~7~~		
		~~21~~		
		29		

output

3 5
4 7
4 10
6 2

task-12

class A

obj	instance variable		temp
a1	self. sum	self.y.	~~4~~
			~~2~~
Binam	~~0~~	~~0~~	0
pub	~~5~~	2	~~-2~~
			~~-4~~
			~~-2~~
			-1

class B

obj	instance variable		b	x
b1	self.sum	self.y	None	0
	0	0		0
	~~3~~	~~0~~		1
Dinajpur	~~0~~	~~3~~		-4
	~~5~~	~~0~~		
	~~9~~	-2		
	~~13~~			
	14			

obj	instance variable	
b2	self.sum	self.y
	0	0
	~~-1~~	~~-4~~
Dhaka	~~0~~	-10
	~~5~~	
	~~-8~~	
	-16	

methodA

m	n	x
1	3	~~0~~ 4
1	2	~~0~~ 3
-4	-4	~~0~~ 3

method B

m	n	y
2	3	~~0~~ 3
3	2	~~0~~ -4

output

4 0 9

1 3 13

3 -2 14

-3 -10 -8

-4 -4 -16

task-13

class A.

obj	instance variable		temp
a1	self.sum	self.y	~~3~~
	~~0~~	~~0~~	~~1~~
Biram pur	5	~~2~~	~~-1~~
		~~-2~~	~~-3~~
		-4	~~-5~~
			~~-4~~
			~~-3~~
			-2

obj	instance variabl	
b1	self.sum	self.y
	~~0~~	~~0~~
Dinaj pur	~~3~~	~~0~~
	2	0

x	b
~~1~~	None
~~3~~	
~~6~~	
-5	

obj	instance variable	
b2	self.sum	self.y
Dhaka	0	0
	~~-1~~	~~-4~~
	~~2~~	~~-1~~
	~~4~~	
	5	-10

method A

m	n		x
1	x	[2 3]	0
-5		[2 4]	26
1		[7]	0
		[9]	3
		[7]	0
			10

method B

m	n	y(n)	
3	2	[ ]	[0]
			[1]
			[6]

output

26 -2 5

3 -10 4

-5 6 5

10 -4 5

task-14

class A

obj	instance variable		temp
a1	self.sum	self.y	~~7~~
	~~0~~	~~0~~	~~4~~
	9	~~6~~	~~1~~
Bihampur		~~4~~	~~-1~~
		7	~~-4~~
			~~-2~~
			~~0~~
			2

methodB

m	n	x
2	3	~~[0]~~
		[6]

methodA ~~called~~ ~~methodB~~

m	n	x(list)	x	n(x)
2	x	~~[32]~~	~~4~~	[0]
-1		~~[33]~~	~~40~~	[1]
3		~~[4]~~	~~4~~	[6]
		~~[12]~~	~~8~~	
		[11]	~~4~~	
			19	

x(list)

[32]
[33]
[11]
[12]
[11]

get_A_sum'
return 2
get_A_sum
return 4

class A

obj	instance variable		b	x
b1	self.sum	self.y	None	2
				7
Dinaj pur	0	0		14
	6	3		-1
	2	2		

obj	instance variable	
b2	self.sum	self.y
Dhaka	0	0
	4	-2
	2	0
	4	-3
	9	

output

40 4 9

8 -3 4

-1 6 9

19 7 9