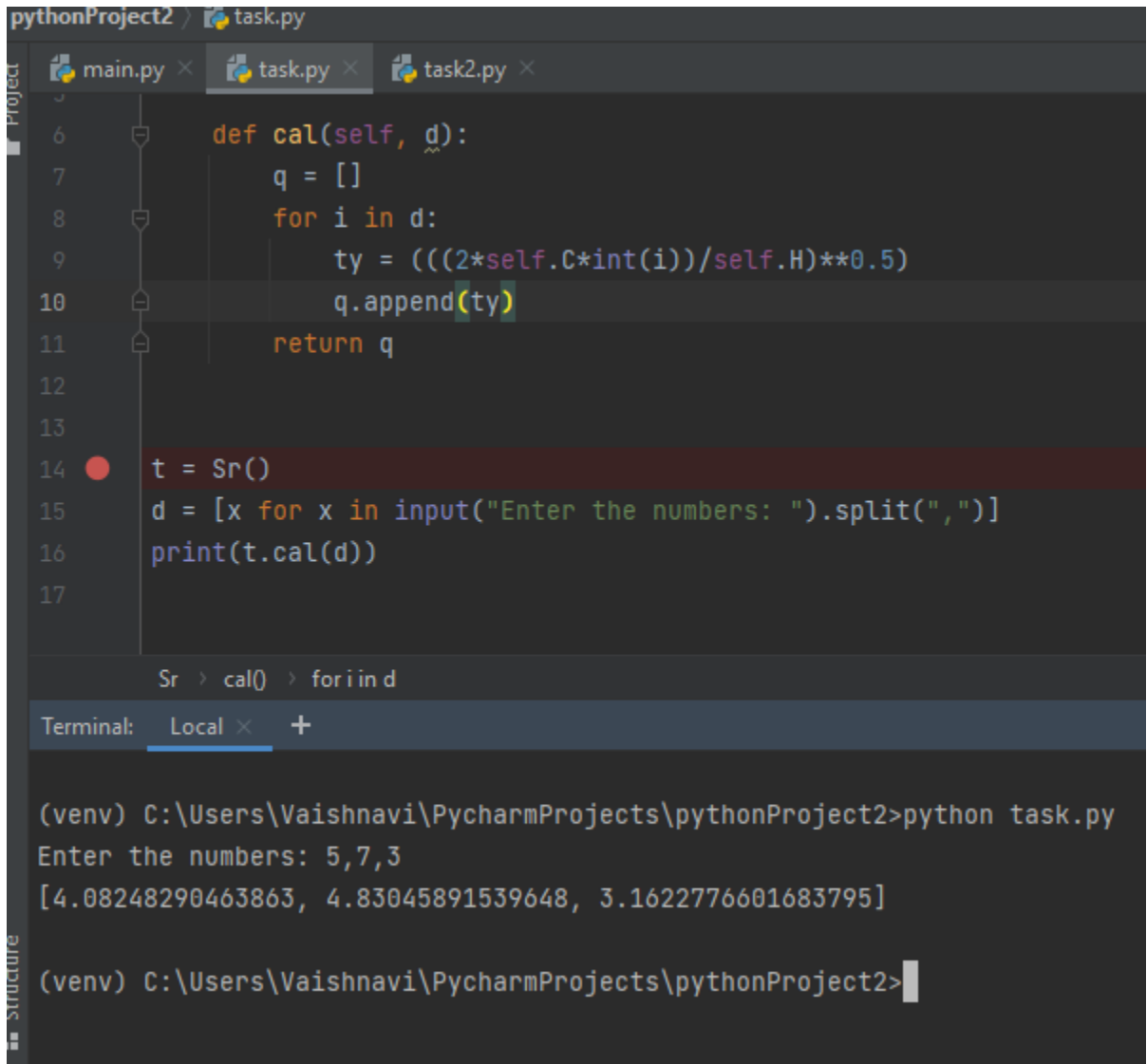


Task 7 :

1)



The screenshot shows the PyCharm IDE interface. The top pane displays the code for `task.py`. The code defines a class `Sr` with a method `cal` that takes a list `d` and returns a list of calculated values. The `cal` method is defined as follows:

```
def cal(self, d):  
    q = []  
    for i in d:  
        ty = (((2*self.C*int(i))/self.H)**0.5)  
        q.append(ty)  
    return q
```

Below the class definition, the code instantiates the `Sr` class and calls the `cal` method with user input:

```
t = Sr()  
d = [x for x in input("Enter the numbers: ").split(",")]  
print(t.cal(d))
```

The bottom pane shows the terminal output. The command `python task.py` is executed, and the user enters the numbers `5,7,3`. The output is a list of three floating-point numbers:

```
(venv) C:\Users\Vaishnavi\PycharmProjects\pythonProject2>python task.py  
Enter the numbers: 5,7,3  
[4.08248290463863, 4.83045891539648, 3.1622776601683795]  
(venv) C:\Users\Vaishnavi\PycharmProjects\pythonProject2>
```

1)

2)

```
class Shape:  
    def __init__(self, a=0):  
        self.a = a  
  
    def area(self):  
        return self.a
```

```

class Square(Shape):
    def __init__(self, length):
        self.l = length

    def area(self):
        a = self.l * self.l
        return self.l**2

y = Square(4)
z = y.area()
print(z)

```

output:

```

(venv) C:\Users\Vaishnavi\PycharmProjects\pythonProject2>python task2.py
16

```

3)

```

class Integ:
    def cal(self):
        self.d = str(d)
        g = []
        for t in d:
            d.split(",")
            g.append(self.t)

        n = len(self.g)
        re = []
        for x in range(0, n-2):
            for i in range(x+1, n-1):
                for j in range(i+1, n):
                    if self.g[x]+self.g[i]+self.g[j] == 0:
                        re.append([self.g[x], self.g[i], self.g[j]])

        return re

d = [-25, -10, -7, -3, 2, 4, 8, 10]
print(d)
b = Integ()
result = b.cal()
print(result)

```

```

4) class Time:
    def __init__(self, time1_hour, time1_min, time2_hour, time2_min):
        self.time1_hour = time1_hour
        self.time1_min = time1_min
        self.time2_hour = time2_hour
        self.time2_min = time2_min

```

```

        self.total_hours = 0
        self.total_mins = 0

    def addTime(self):
        self.total_mins = self.time1_min + self.time2_min
        extra_hour = 0
        if (self.total_mins >= 60):
            extra_hour = int(self.total_mins/60)
            self.total_mins -= extra_hour * 60

        self.total_hours = self.time1_hour + self.time2_hour+extra_hour

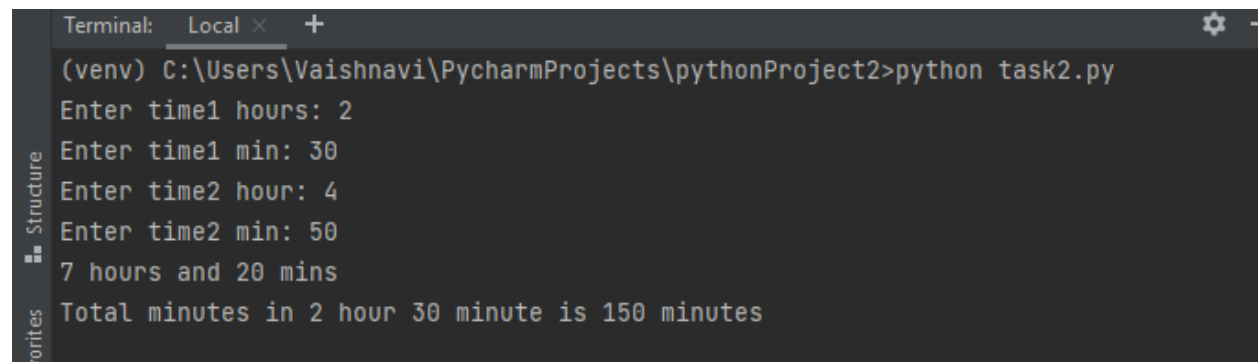
    def displayTime(self):
        print("{} hours and {} mins".format(self.total_hours,
self.total_mins))

    def displayMinute(self,time_hour,time_min):
        total_minutes = time_hour*60 + time_min
        print("Total minutes in {} hour {} minute is {}
minutes".format(time_hour, time_min, total_minutes))

time1_hour = int(input("Enter time1 hours: "))
time1_min = int(input("Enter time1 min: "))
time2_hour = int(input("Enter time2 hour: "))
time2_min = int(input("Enter time2 min: "))
ob = Time(time1_hour,time1_min,time2_hour,time2_min)
ob.addTime()
ob.displayTime()
ob.displayMinute(time1_hour,time1_min)

```

Output:



```

Terminal: Local x +
(venv) C:\Users\Vaishnavi\PycharmProjects\pythonProject2>python task2.py
Enter time1 hours: 2
Enter time1 min: 30
Enter time2 hour: 4
Enter time2 min: 50
7 hours and 20 mins
Total minutes in 2 hour 30 minute is 150 minutes

```

5)

```

class person:
    age = 0
    def __init__(self,a):
        if a <=0:
            print("Age is not valid, setting age to 0")
            self.age = 0
        else:
            self.age = a

```

```

def yearPasses(self,n):
    self.age += n
    print("Age after {} year passes : {}".format(n,self.age))

def amIOld(self):
    if int(self.age) in range(1,13):
        print("You are Young",end="\n")
    elif int(self.age) in range(13,20):
        print("You are a Teenager",end="\n")
    elif int(self.age) >=20:
        print("You are Old", end="\n")

l=[-2,2,5,8,12,32,25]
for i in l:
    p=person(i)
    p.yearPasses(10)
    p.amIOld()

```

output:

```

Terminal: Local x +
(venv) C:\Users\Vaishnavi\PycharmProjects\pythonProject2>python task2.py
Age is not valid, setting age to 0
Age after 10 year passes : 10
You are Young
Age after 10 year passes : 12
You are Young
Age after 10 year passes : 15
You are a Teenager
Age after 10 year passes : 18
You are a Teenager
Age after 10 year passes : 22
You are Old
Age after 10 year passes : 42
You are Old
Age after 10 year passes : 35
You are Old

```