

1. Write a python program that takes user's name (full name) and age as input and prints it in following format

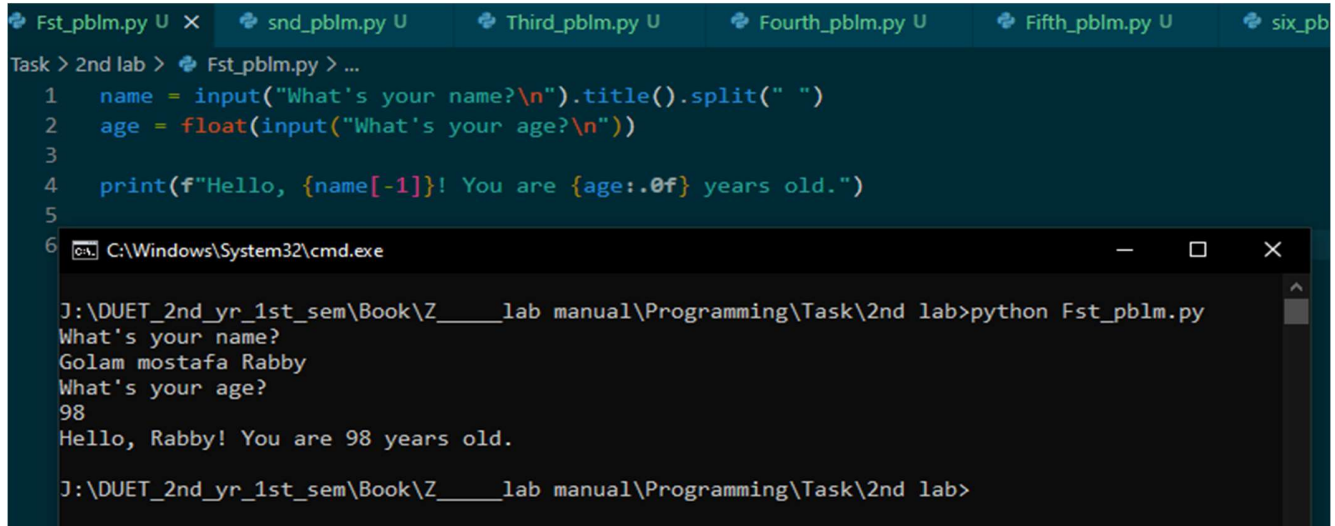
Sample Output: What's your name?

Fazlur rahim

What's your age?

62

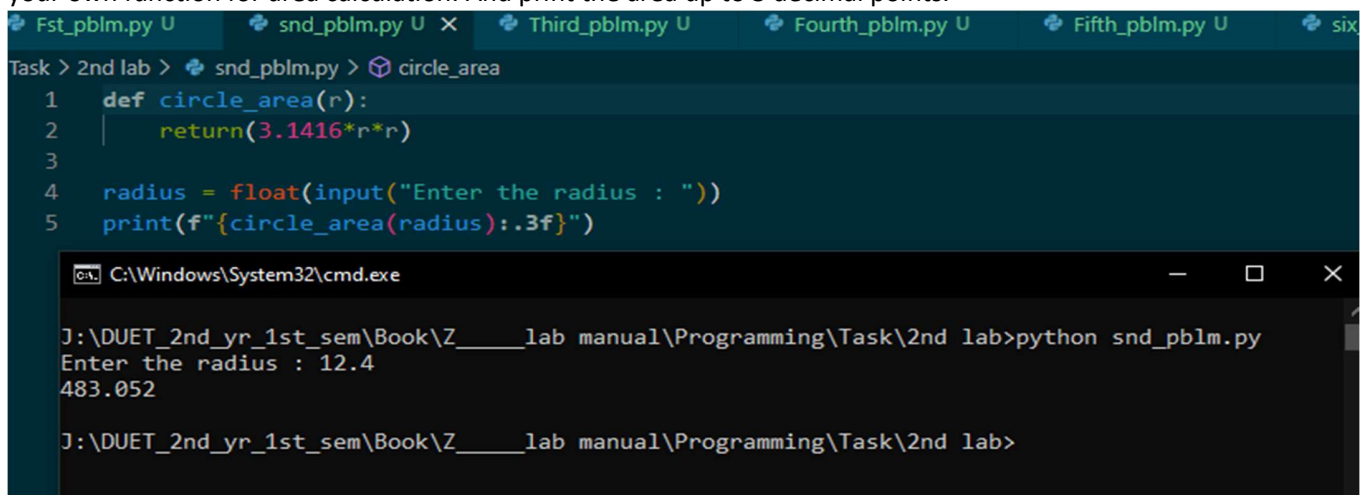
Output: Hello, Rahim! You are 62 years old.



```
Fst_pblm.py U X snd_pblm.py U Third_pblm.py U Fourth_pblm.py U Fifth_pblm.py U six_pb
Task > 2nd lab > Fst_pblm.py > ...
1 name = input("What's your name?\n").title().split(" ")
2 age = float(input("What's your age?\n"))
3
4 print(f"Hello, {name[-1]}! You are {age:.0f} years old.")
5
6
```

```
C:\Windows\System32\cmd.exe
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python Fst_pblm.py
What's your name?
Golam mostafa Rabby
What's your age?
98
Hello, Rabby! You are 98 years old.
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>
```

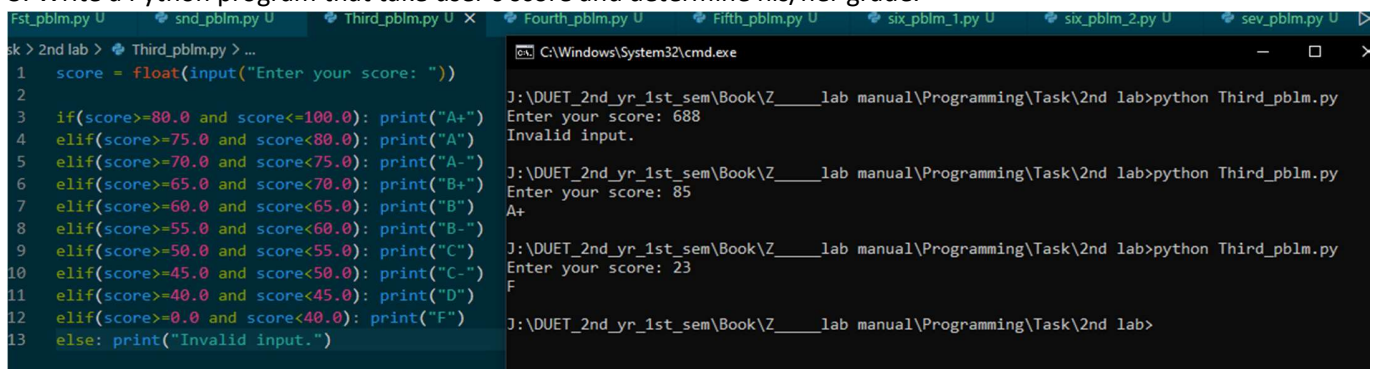
2. Write a Python program that calculates the area of a circle based on the radius entered by the user. Define your own function for area calculation. And print the area up to 3 decimal points.



```
Fst_pblm.py U snd_pblm.py U X Third_pblm.py U Fourth_pblm.py U Fifth_pblm.py U six
Task > 2nd lab > snd_pblm.py > circle_area
1 def circle_area(r):
2     return(3.1416*r*r)
3
4 radius = float(input("Enter the radius : "))
5 print(f"{circle_area(radius):.3f}")
```

```
C:\Windows\System32\cmd.exe
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python snd_pblm.py
Enter the radius : 12.4
483.052
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>
```

3. Write a Python program that take user's score and determine his/her grade.



```
Fst_pblm.py U snd_pblm.py U Third_pblm.py U X Fourth_pblm.py U Fifth_pblm.py U six_pblm_1.py U six_pblm_2.py U sev_pblm.py U
sk > 2nd lab > Third_pblm.py > ...
1 score = float(input("Enter your score: "))
2
3 if(score>=80.0 and score<=100.0): print("A+")
4 elif(score>=75.0 and score<80.0): print("A")
5 elif(score>=70.0 and score<75.0): print("A-")
6 elif(score>=65.0 and score<70.0): print("B+")
7 elif(score>=60.0 and score<65.0): print("B")
8 elif(score>=55.0 and score<60.0): print("B-")
9 elif(score>=50.0 and score<55.0): print("C")
10 elif(score>=45.0 and score<50.0): print("C-")
11 elif(score>=40.0 and score<45.0): print("D")
12 elif(score>=0.0 and score<40.0): print("F")
13 else: print("Invalid input.")
```

```
C:\Windows\System32\cmd.exe
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python Third_pblm.py
Enter your score: 688
Invalid input.
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python Third_pblm.py
Enter your score: 85
A+
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python Third_pblm.py
Enter your score: 23
F
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>
```

4. Write a Python program that determines whether a given number (accepted from the user) is even or odd, and prints an appropriate message to the user. Define a function 'is_even' to check whether the number is even or odd.

```

1 def is_even(num):
2     if(num % 2):
3         return False
4     else:
5         return True
6
7 num = int(input("Enter a number : "))
8 if(is_even(num)):
9     print(f"{num} is even number.")
10 else:
11     print(f"{num} is odd number.")
12
13

```

```

C:\Windows\System32\cmd.exe
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python Fourth_pblm.py
Enter a number : 23
23 is odd number.

J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python Fourth_pblm.py
Enter a number : 44
44 is even number.

J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>

```

5. Write a Python program to display the first and last colors from the following list.
color_list = ["Red","Green","White" ,"Black"]

```

1 color_list = ["Red", "Green", "White", "Black"]
2 print("First element :", color_list[0])
3 print("Last element :", color_list[-1])

```

```

C:\Windows\System32\cmd.exe
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python Fifth_pblm.py
First element : Red
Last element : Black

J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>

```

6. Write a python program to calculate the summations of the following series for given values of x and n:
i) $4 - \frac{4}{3} + \frac{4}{5} - \frac{4}{7} + \dots$ nth term .

```

1 sum = 0.0
2 n = int(input("Enter the value of n : "))
3 for i in range(1, n+1):
4     if(i%2):
5         sum += 4/(2*(i-1)+1)
6     else: sum -= 4/(2*(i-1)+1)
7
8 print(f"Summation : {sum:.3f}")

```

```

C:\Windows\System32\cmd.exe
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python six_pblm_1.py
Enter the value of n : 5
Summation : 3.340

J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>

```

ii) $1 + x/1! + x^2/2! + x^3/3! + \dots + x^n/n!$

Also compare the result with (i) the constant π , (ii) e^x .

```

Task > 2nd lab > sev_pblm.py U
1 def fact(n):
2     result = 1
3     for i in range(2, n+1):
4         result *= i
5     return result
6
7 x = int(input("Enter the value of x : "))
8 n = int(input("Enter the value of n : "))
9 sum = 0
10 for i in range(n):
11     sum += ((x**i)/fact(i))
12 print(sum)

C:\Windows\System32\cmd.exe
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python six_pblm_2.py
Enter the value of x : 3
Enter the value of n : 4
13.0
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>

```

7. Write a Python program which accepts a sequence of comma separated 4-digit binary numbers as its input and print the numbers that are divisible by 4 in a comma separated sequence.

Input : 0110,0011,1010,1001,1100

Expected Output : 1100

```

sev_pblm.py U
Task > 2nd lab > sev_pblm.py > ...
1 num = input("Enter value : \n").split(",")
2 # num = "0110,0011,1010,1001,1100, 0100, 1000"
3 bin_num = list()
4 dec_num = list()
5
6 for i in num:
7     dec_num.append(int(i, 2))
8
9 for i in dec_num:
10    if(i%4==0):
11        bin_num.append(bin(i)[2:])
12
13 for i in bin_num:
14     print(f"Output : {(4-len(str(i)))*'0'}{i}" , end=" ")
15

C:\Windows\System32\cmd.exe
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>python sev_pblm.py
Enter value :
0110,0011,1010,1001,1100, 0100, 1000
Output : 1100 Output : 0100 Output : 1000
J:\DUET_2nd_yr_1st_sem\Book\Z____lab manual\Programming\Task\2nd lab>

```