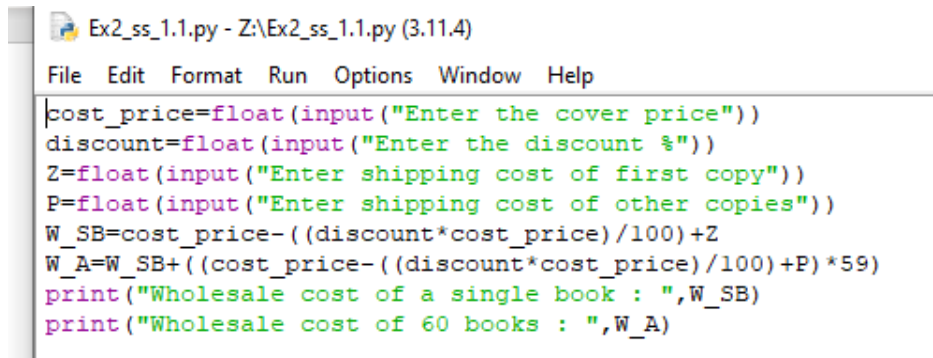


Assignment 2: Problem solving using Sequential statements

Solve the following problems using python:

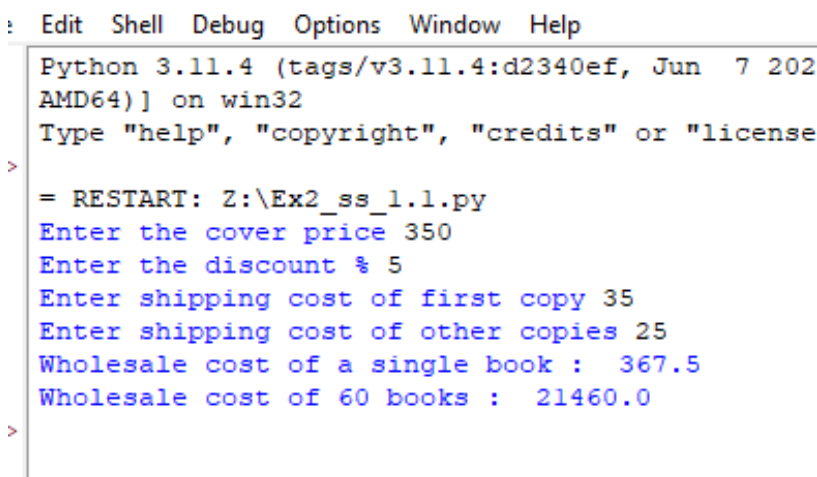
1. A bookstore needs to buy 60 copies of a book from a publisher. Suppose the cover price of a book is X, but bookstores get a discount of Y%. Shipping costs incurs Z for the first ₹ ₹ copy and P for each additional copy. What is the total wholesale cost for 60 copies to be ₹ paid by the bookstore to the publisher?

Source code:



```
Ex2_ss_1.1.py - Z:\Ex2_ss_1.1.py (3.11.4)
File Edit Format Run Options Window Help
cost_price=float(input("Enter the cover price"))
discount=float(input("Enter the discount %"))
Z=float(input("Enter shipping cost of first copy"))
P=float(input("Enter shipping cost of other copies"))
W_SB=cost_price-((discount*cost_price)/100)+Z
W_A=W_SB+((cost_price-((discount*cost_price)/100)+P)*59)
print("Wholesale cost of a single book : ",W_SB)
print("Wholesale cost of 60 books : ",W_A)
```

Output:

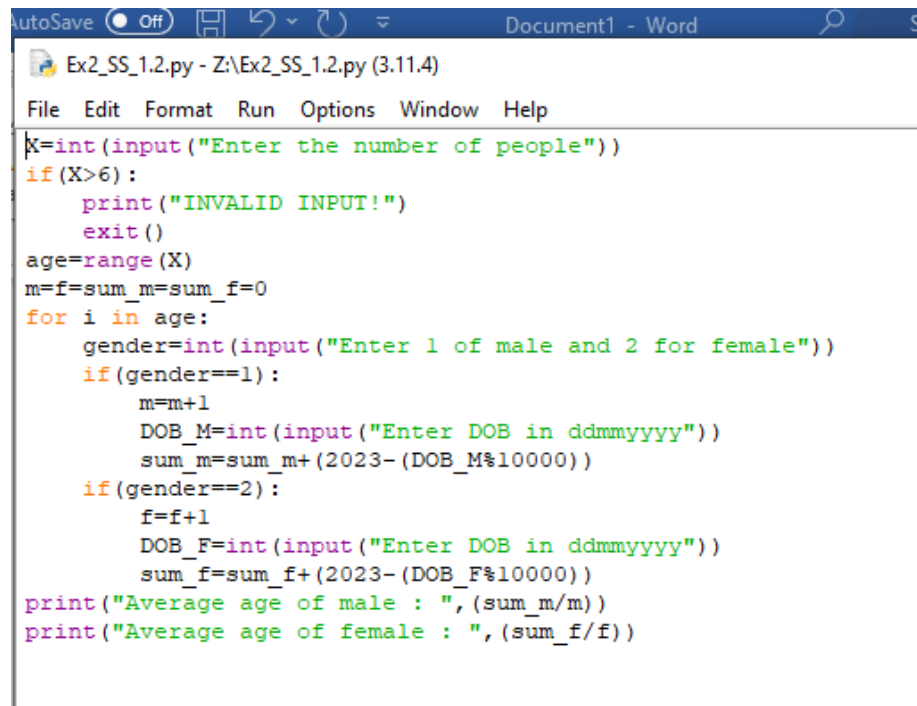


```
: Edit Shell Debug Options Window Help
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 202
AMD64)] on win32
Type "help", "copyright", "credits" or "license
>
= RESTART: Z:\Ex2_ss_1.1.py
Enter the cover price 350
Enter the discount % 5
Enter shipping cost of first copy 35
Enter shipping cost of other copies 25
Wholesale cost of a single book : 367.5
Wholesale cost of 60 books : 21460.0
>
```

2. Assume the population of a city consists of X persons of different age groups. X includes both male and female. Public welfare department wants to find the average age of male and female. The department can obtain peoples date of birth from the corporation from which the age can

be calculated. (Note: Use only sequential statements to solve the problem. Consider X to be less than or equal to 6)

Source Code:

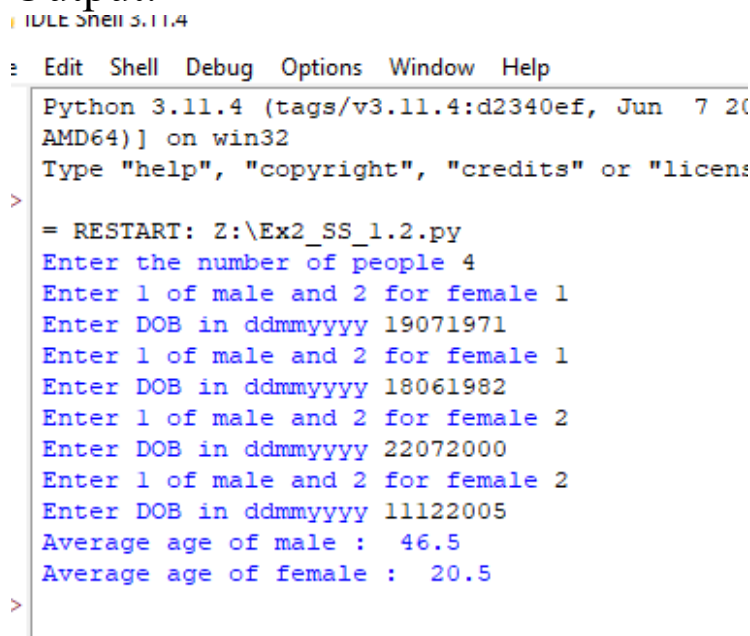


```

Ex2_SS_1.2.py - Z:\Ex2_SS_1.2.py (3.11.4)
File Edit Format Run Options Window Help
X=int(input("Enter the number of people"))
if(X>6):
    print("INVALID INPUT!")
    exit()
age=range(X)
m=f=sum_m=sum_f=0
for i in age:
    gender=int(input("Enter 1 of male and 2 for female"))
    if(gender==1):
        m=m+1
        DOB_M=int(input("Enter DOB in ddmmYYYY"))
        sum_m=sum_m+(2023-(DOB_M%10000))
    if(gender==2):
        f=f+1
        DOB_F=int(input("Enter DOB in ddmmYYYY"))
        sum_f=sum_f+(2023-(DOB_F%10000))
print("Average age of male : ",(sum_m/m))
print("Average age of female : ",(sum_f/f))

```

Output:



```

Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023) [AMD64] on win32
Type "help", "copyright", "credits" or "license()"
>
= RESTART: Z:\Ex2_SS_1.2.py
Enter the number of people 4
Enter 1 of male and 2 for female 1
Enter DOB in ddmmYYYY 19071971
Enter 1 of male and 2 for female 1
Enter DOB in ddmmYYYY 18061982
Enter 1 of male and 2 for female 2
Enter DOB in ddmmYYYY 22072000
Enter 1 of male and 2 for female 2
Enter DOB in ddmmYYYY 11122005
Average age of male : 46.5
Average age of female : 20.5
>

```

Additional problems using sequential statements for practice:

1. Swapping two numbers

Source Code:

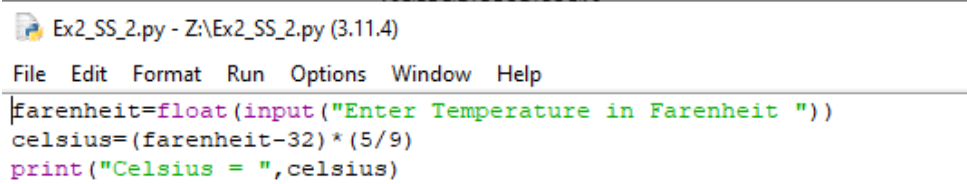
```
Ex2_SS_1.py - Z:\Ex2_SS_1.py (3.11.4)
File Edit Format Run Options Window Help
n1=int(input("Enter number 1"))
n2=int(input("Enter number 2"))
n1,n2=n2,n1
print("n1 = ",n1)
print("n2 = ",n2)
|
```

Output:

```
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for
>>
= RESTART: Z:\Ex2_SS_1.py
Enter number 1 45
Enter number 2 23
n1 = 23
n2 = 45
>> |
```

2. Temperature conversion from Fahrenheit to Celsius (Hint: Fahrenheit = $\frac{9}{5}$ x celsius + 32)

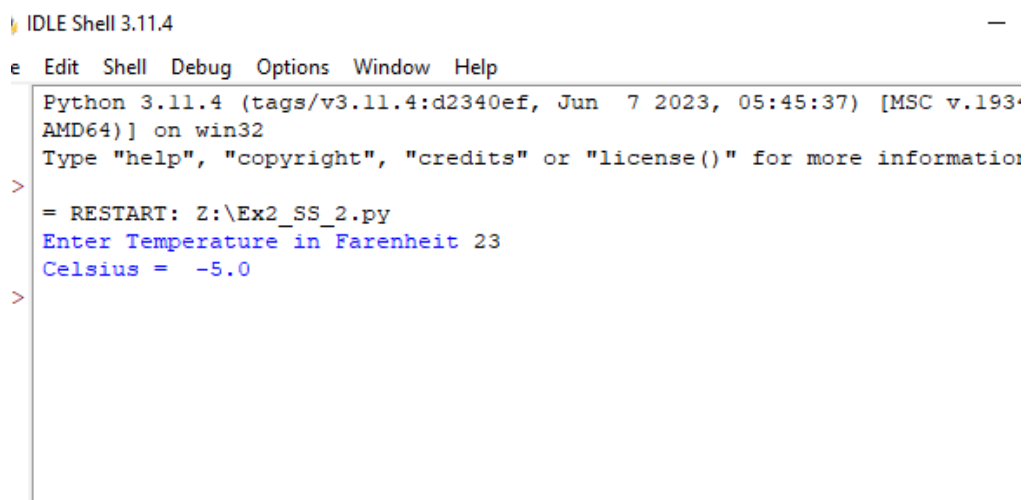
Source Code:



The screenshot shows a text editor window titled "Ex2_SS_2.py - Z:\Ex2_SS_2.py (3.11.4)". The menu bar includes File, Edit, Format, Run, Options, Window, and Help. The code in the editor is as follows:

```
fahrenheit=float(input("Enter Temperature in Farenheit "))
celsius=(fahrenheit-32)*(5/9)
print("Celsius = ",celsius)
```

Output:

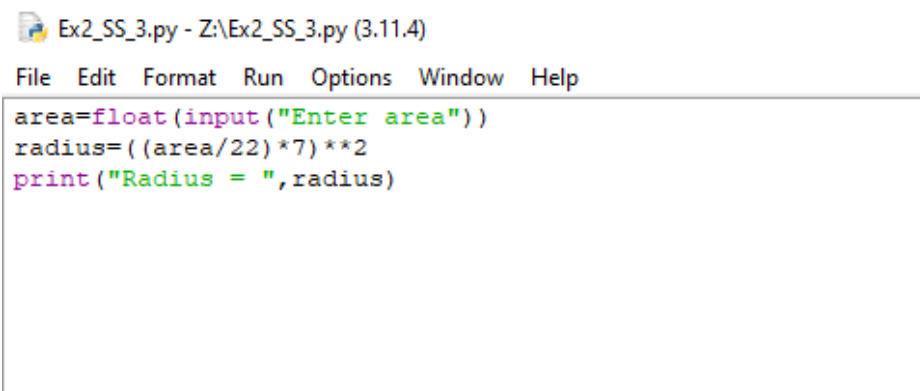


The screenshot shows the IDLE Shell 3.11.4 window. The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The output in the shell is as follows:

```
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.193.
AMD64] on win32
Type "help", "copyright", "credits" or "license()" for more informatio
>
= RESTART: Z:\Ex2_SS_2.py
Enter Temperature in Farenheit 23
Celsius = -5.0
>
```

3. Compute radius of a circle for the given area.

Source Code:



The screenshot shows a text editor window titled "Ex2_SS_3.py - Z:\Ex2_SS_3.py (3.11.4)". The menu bar includes File, Edit, Format, Run, Options, Window, and Help. The code in the editor is as follows:

```
area=float(input("Enter area"))
radius=((area/22)*7)**2
print("Radius = ",radius)
```

Output:

```

IDLE Shell 3.11.4
File Edit Shell Debug Options Window Help
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.19
AMD64] on win32
Type "help", "copyright", "credits" or "license()" for more informati
>>
= RESTART: Z:\Ex2_SS_3.py
Enter area 44
Radius = 196.0
>> |

```

4. Write a program to reverse a two-digit number and print its sum.

Source code:

```

Ex2_SS_4.py - Z:\Ex2_SS_4.py (3.11.4)
File Edit Format Run Options Window Help
n=int(input("Enter a two digit number"))
last_digit=n%10
first_digit=(n-last_digit)/10
sum=last_digit+first_digit
print("The sum : ",sum)

```

Output:

```

e Edit Shell Debug Options Window Help
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun 7 2023, 05:45:37) [MSC v.1934 64
AMD64] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>
= RESTART: Z:\Ex2_SS_4.py
Enter a two digit number 45
The sum : 9.0
> |

```

5. Compute the gross and net salaries of an employee for the given basic pay (BP) based on the allowances and deductions. Gross pay includes basic and all allowances, Net pay is the difference between gross pay and deductions. Allowances: DA = 62% of BP HRA = 8% of BP Deductions: Insurance = Rs. 2000 PF = 12% of BP
- Source code:

```

Ex2_SS_5.py - Z:\Ex2_SS_5.py (3.11.4)
File Edit Format Run Options Window Help
basic_pay=float(input("Enter the basic pay"))
DA=(62*basic_pay)/100
HRA =(8*basic_pay)/100
insurance=2000
PF=(12*basic_pay)/100
gross_pay=basic_pay+DA+HRA
net_pay=gross_pay-insurance-PF
print("Gross Pay : ",gross_pay)
print("Net Pay : ",net_pay)

```

Output:

```

DLE Shell 3.11.4
Edit Shell Debug Options Window Help
Python 3.11.4 (tags/v3.11.4:d2340ef,
AMD64) ] on win32
Type "help", "copyright", "credits"

= RESTART: Z:\Ex2_SS_5.py
Enter the basic pay 50000
Gross Pay : 85000.0
Net Pay : 77000.0
|

```

6. Read two complex numbers from the user and find their
 a. sum b. difference c. product

Source code:

```

Ex2_SS_6.py - Z:\Ex2_SS_6.py (3.11.4)
File Edit Format Run Options Window Help
r1=int(input("Enter the real part of complex number 1"))
i1=int(input("Enter the imaginary part of complex number 1"))
r2=int(input("Enter the real part of complex number 2"))
i2=int(input("Enter the imaginary part of complex number 2"))
z1=complex(r1,i1)
z2=complex(r2,i2)
print("Sum : ",z1+z2)
print("Differnece : ",z1-z2)
print("Product : ",z1*z2)

```

Output:

```
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun  7 2023, 05:45:37) [MS
AMD64] on win32
Type "help", "copyright", "credits" or "license()" for more inf
>
= RESTART: Z:\Ex2_SS_6.py
Enter the real part of complex number 1 3
Enter the imaginary part of complex number 1 4
Enter the real part of complex number 2 5
Enter the imaginary part of complex number 2 6
Sum : (8+10j)
Differnece : (-2-2j)
Product : (-9+38j)
> |
```