Tool & Technique Laboratory (T&T Lab.)
[CS-3096]
Individual Work
Lab. No:1 , Date:17/01/2023 , Day:Tuesday
Topic:

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Program No: 1.1

Program Title:WAP to subtract a number from another number and display the result

Input/Output Screenshots:
RUN-1:

```
In [8]: runfile('C:/Users/KIIT/.spyder-py3/temp.py', wdir='C:/Users/KIIT/.spyder-py3')

enter a number :2

enter a number : 3
5.0
```

RUN-2:

```
104.0

In [10]: runfile('C:/Users/KIIT/.spyder-py3/temp.py', wdir='C:/Users/KIIT/.spyder-py3')

enter a number :10

enter a number : 31
41.0

In [11]:
```

Source code
```python
number1= input("enter a number :")
number2= input("enter a number : ")
sum= float(number1) + float(number2)
print(sum)
```

Program No: 1.2

Program Title: WAP to convert temperature from centigrade to Fahrenheit scale

Input/Output Screenshots:

RUN-1:

```
In [8]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the centigrade40
the temprature in farhenheit  104
```

RUN-2:

```
In [9]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the centigrade -40
the temprature in farhenheit  -40
```

Source code
c= int(input("enter the centigrade"))

f=9/5 *c + 32
print("the temprature in farhenheit ", int(f))

Program No: 1.3

Program Title: WAP to subtract a number from another number and display the result

Input/Output Screenshots:
RUN-1:

```
In [11]: runfile('C:/Users/KIIT/.spyder-py3/untitled2.py', wdir='C:/Users/KIIT/.spyder-
py3')

enter the radius4
25.132
```

RUN-2:

```
In [12]: runfile('C:/Users/KIIT/.spyder-py3/untitled2.py', wdir='C:/Users/KIIT/.spyder-
py3')

enter the radius7
43.981
```

Source code

num1 = input("enter the radius")

premeter = 2* 3.1415 * float(num1)

print(premeter)

Program No: 1.3

Program Title:WAP to calculate area of a triangle whose three sides are given.

Input/Output Screenshots:

RUN-1:

```
In [15]: runfile('C:/Users/KIIT/.spyder-py3/untitled3.py', wdir='C:/Users/KIIT/.spyder-
py3')

enter the height4

enter the base5
10.0
```

RUN-2:

```
In [16]: runfile('C:/Users/KIIT/.spyder-py3/untitled3.py', wdir='C:/Users/KIIT/.spyder-
py3')

enter the height5

enter the base6
15.0

In [17]:
```

Source code

```
num1= input("enter the height")
num2=input("enter the base")


area= int(num1)*int(num2)/2


print(area)
```

Program No: 1.5

Program Title:WAP to swap two integer numbers without using third variable

Input/Output Screenshots:

RUN-1:

```
In [23]: runfile('C:/Users/KIIT/.spyder-py3/untitled4.py', wdir='C:/Users/KIIT/.spyder-
py3')

enter the first number : 2

enter the second number :34
before swapping  2 34
after swapping   34 2
```

RUN-2:

```
enter the first number : 5

enter the second number :6
before swapping  5 6
after swapping   6 5

In [25]:
```

Source code:

a=int(input("enter the first number : "))
b= int(input("enter the second number :"))
print("before swapping " , a , b)
a=a+b
b=a-b
a=a-b

print("after swapping ", a , b)

Program No: 1.6

Program Title: WAP to convert a quantity in meter entered through keyboard into its equivalent kilometer and meter
as per the following format. Example. 2430 meter = 2 Km and 430 meter.

Input/Output Screenshots:

RUN-1:

```
In [32]: runfile('C:/Users/KIIT/.spyder-py3/untitled5.py', wdir='C:/Users/KIIT/.spyder-
py3')

enter the lenght in meter:45656
Distance: 45 km and 656 meter
```

RUN-2:

```
In [33]: runfile('C:/Users/KIIT/.spyder-py3/untitled5.py', wdir='C:/Users/KIIT/.spyder-
py3')

enter the lenght in meter:2355
Distance: 2 km and 355 meter
```

Source code:
m=float(input("enter the lenght in meter:"))

km = m/1000

rem= m %1000

print("Distance:" ,int(km),"km and", int(rem) ,"meter")

Program No: 1.7

Program Title:WAP to find the average mark of 5 subjects of a student and find the percentage.
Assume full mark of
each subject is 100.

Input/Output Screenshots:

RUN-1:

```
In [34]: runfile('C:/Users/KIIT/.spyder-py3/untitled5.py', wdir='C:/Users/KIIT/.spyder-
py3')

enter the mark in subject:89

enter the mark in subject:78

enter the mark in subject:90

enter the mark in subject:87

enter the mark in subject:98
total 442 average 88.4
```

RUN-2:

```
In [3]: runfile('C:/Users/KIIT/.spyder-py3/temp.py', wdir='C:/Users/KIIT/.spyder-
py3')

Enter the 1st marks:98

Enter the 2nd marks:87

Enter the 3rd marks:98

Enter the 4th marks:78

Enter the 5th marks:77
Average: 87.6
Percentage: 87.6 %
```

Source code

Program No: 1.8

Program Title :WAP swap the contents of two variables by using a single statement for swap in C

Input/Output Screenshots:

RUN-1:

```
In [5]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the first number4

enter the second number5
before swapping 4 5
after swapping 5 4
```

RUN-2:

```
In [5]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the first number4

enter the second number5
before swapping 4 5
after swapping 5 4
```

Source code:
x=int(input("enter the first number"))
y=int(input("enter the second number"))

print("before swapping" ,x, y)

x,y = y,x

print("after swapping" , x, y)

Program No:1.9

Program Title:WAP to add two times in hour, minitue & second format entered through the keyboard in the format
hh:mm:ss

Input/Output Screenshots:

RUN-1:

```
In [6]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter time 1: 12:34:31

Enter time 2: 4:11:32
Sum of time: 16:46:03
```

RUN-2:

```
In [7]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter time 1: 1:11:33

Enter time 2: 4:54:21
Sum of time: 06:05:54
```

Source code:
```
# Take 2 times in 24hr hh:mm:ss format and add them
time1 = list(map(int, input("Enter time 1: ").split(':')))
time2 = list(map(int, input("Enter time 2: ").split(':')))
time = [0, 0, 0]
time[2] = time1[2] + time2[2]
time[1] = time1[1] + time2[1] + (time[2] // 60)
time[0] = time1[0] + time2[0] + (time[1] // 60)
time[2] %= 60
time[1] %= 60
time[0] %= 24
time = ['0' + str(time[0]) if time[0] < 10 else time[0],
```

'0' + str(time[1]) if time[1] < 10 else time[1],
'0' + str(time[2]) if time[2] < 10 else time[2]]
print(f"Sum of time: {time[0]}:{time[1]}:{time[2]}")

Program No: 1.10

Program Title: WAP to input any two integers distinct and display the greater of two integers.

Input/Output Screenshots:

RUN-1:

```
In [11]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the first number : 4

enter the second number : 6
B is the greatest
```


RUN-2:

```
In [12]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the first number : 10

enter the second number : 12
B is the greatest
```


Source code
```
a=int(input("enter the first number : "))
b=int(input("enter the second number : "))

if a<b :
    print("B is the greatest")
else:
    print("A is the greatest")
```

Program No: 1.11

Program Title: WAP to input any three integers distinct and display the greater of three integers.

Input/Output Screenshots:

RUN-1:

```
In [16]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the first number : 10

enter the second number : 11

enter the third number :23
C is the greatest
```

RUN-2:

```
In [17]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the first number : 1

enter the second number : 3

enter the third number :0
B is the greatest
```

Source code
```
a=int(input("enter the first number : "))
b=int(input("enter the second number : "))
c=int(input("enter the third number :"))
if a<b<c :
    print("C is the greatest")
```

elif b>a>c :
     print("B is the greatest")
else :
     12print("A is the greatest")

Program No: 1.12

Program Title:WAP to test whether a number entered through keyboard is ODD or EVEN
——

Input/Output Screenshots:

RUN-1:

```
In [18]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the first number : 8
8 is the even numeber
```

RUN-2:

```
In [19]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

enter the first number : 11
A is a odd number
```

Source code:
a=int(input("enter the first number : "))

if a%2 !=0 :
   print("A is a odd number")
else :
   print(f"{a} is the even numeber")

Program No: 1.13

Program Title: WAP to read an alphabet from from the user and convert it into lowercase if the entered alphabet is
in uppercase, otherwise display an appropriate message

Input/Output Screenshots:

RUN-1:

```
In [23]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter alphabet: z
z
```

RUN-2:

```
In [24]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter alphabet: A
```

Source code:
```
ch = input("Enter alphabet: ")
ch = ord(ch)
if ch >= 65 and ch <= 90:
    print(chr(ch + 32))
elif ch >= 97 and ch <= 122:
    print(chr(ch))
else:
    print("Not a letter.")
```

Program No: **1.14**

Program Title: WAP to input any two integers, and provide a menu to the user to select any of the options as add,
subtract, multiply, divide and display the result accordingly.

Input/Output Screenshots:

RUN-1:

```
In [25]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter first number: 5

Enter second number: 2

Enter a operator to perform (+, -, *, /): +
5 + 2 = 7
```

RUN-2:

```
In [26]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter first number: 10

Enter second number: 2

Enter a operator to perform (+, -, *, /): /
10 / 2 = 5.0
```

Source code
```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
op = input("Enter a operator to perform (+, -, *, /): ")
if op == '+':
    print(f"{a} + {b} = {a + b}")
elif op == '-':
```

```python
    print(f"{a} - {b} = {a - b}")
elif op == '*':
    print(f"{a} * {b} = {a * b}")
elif op == '/':
    if b == 0:
        print("Divide by 0 error.")
    else:
        print(f"{a} / {b} = {a / b}")
else:
    print("Incorrect operator.")
```

Program No: 1.15

Program Title:WAP to display the grade system of KIIT University based on total marks secured by a student in a
semester. Use else..if ladder statement

Input/Output Screenshots:

RUN-1:

```
In [27]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter total marks: 89
E grade
```

RUN-2:

```
In [28]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter total marks: 41
D grade
```

Source code
```
mark = int(input("Enter total marks: "))
if mark >= 90:
    print("O grade")
elif mark >= 80:
    print("E grade")
elif mark >= 70:
    print("A grade")
elif mark >= 60:
    print("B grade")
elif mark >= 50:
    print("C grade")
elif mark >= 40:
    print("D grade")
```

else:
   print("F grade")

Program No: 1.16

Program Title: WAP to check whether a character entered through keyboard is a digit, letter, special character etc or
not

Input/Output Screenshots:

RUN-1:

```
In [29]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter a character: A
Letter
```

RUN-2:

```
In [30]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter a character: *
Special Character
```

Source code
ch = input("Enter a character: ")
if ch >= '1' and ch <= '9':
   print("Digit")
elif (ch >= 'A' and ch <= 'Z') or (ch >= 'a' and ch <= 'z'):
   print("Letter")
else:
   print("Special Character")

Program No: 1.17

Program Title:. WAP which takes two integer operands and one operator form the user, performs the operation and
then prints the result. (Consider the operators +,-,*, /, % etc). Use switch cse

Input/Output Screenshots:

RUN-1:

```
PS D:\codes\college\TTL\class 1> python 17.py
Enter first number: 5
Enter second number: 4
Enter a operator to perform (+, -, *, /): -
5 - 4 = 1
```

RUN-2:

```
PS D:\codes\college\TTL\class 1> python 17.py
Enter first number: 2
Enter second number: 3
Enter a operator to perform (+, -, *, /): *
2 * 3 = 6
```

Source code

```python
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
op = input("Enter a operator to perform (+, -, *, /): ")
match op:
    case '+':
        print(f"{a} + {b} = {a + b}")
    case '-':
        print(f"{a} - {b} = {a - b}")
    case '*':
        print(f"{a} * {b} = {a * b}")
    case '/':
        if b == 0:
            print("Divide by 0 error.")
        else:
            print(f"{a} / {b} = {a / b}")
```

```
case default:
    print("Incorrect operator.")
```

Program No:1.18

Program Title:WAP to find the roots of a quadratic equation ax2+bx+c=0 using switch-case statement.

Input/Output Screenshots:

RUN-1:

```
In [36]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter a: 4

Enter b: 6

Enter c: 2
Real roots
Root1: -0.5
Root2: -1.0
```

RUN-2:

```
In [37]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter a: 2

Enter b: 5

Enter c: 1
Real roots
Root1: -0.21922359359558485
Root2: -2.2807764064044154
```

Source code
from math import sqrt

```
a = int(input("Enter a: "))
b = int(input("Enter b: "))
c = int(input("Enter c: "))
D = (b * b - 4 * a * c)
if D < 0:
    print("Imaginary roots")
    print(f"Root1: {(-b) / (2 * a)} + {sqrt(-D) / (2 * a)}i")
    print(f"Root2: {(-b) / (2 * a)} + {sqrt(-D) / (2 * a)}i")
else:
    print("Real roots")
    print(f"Root1: {(-b + sqrt(D)) / (2 * a)}")
print(f"Root2: {(-b - sqrt(D)) / (2 * a)}")
```

Program No: 1.18

Program Title:WAP to findout the distance between two coordinates (x1, y1) & (x2, y2).

Input/Output Screenshots:

RUN-1:

```
In [38]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter coordinate 1:  0 0

Enter coordinate 2: 2 2
Distance = 2.8284271247461903
```

RUN-2:

```
In [39]: runfile('C:/Users/KIIT/.spyder-py3/untitled0.py', wdir='C:/Users/
KIIT/.spyder-py3')

Enter coordinate 1: 4 5

Enter coordinate 2: 2 1
Distance = 4.47213595499958
```

Source code
from math import sqrt, pow

c1 = list(map(int, input("Enter coordinate 1: ").split()))
c2 = list(map(int, input("Enter coordinate 2: ").split()))
dist = sqrt(pow(c1[0] - c2[0], 2) + pow(c1[1] - c2[1], 2))
print(f"Distance = {dist}")