

Programming Assignment_2

1. Write a Python program to convert kilometers to miles?

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[2]: km = int(input("Enter value in kilometers= "))

one_km = 0.621371

miles = km * one_km
print('%0.2f kilometers is equal to %0.2f miles' %(km,miles))

Enter value in kilometers= 5
5.00 kilometers is equal to 3.11 miles
```

2. Write a Python program to convert Celsius to Fahrenheit?

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```
] : celsius = int(input("Enter value in celcius= "))

fahrenheit = (celsius * 1.8) + 32

print('%0.1f degree Celsius is equal to %0.1f degree Fahrenheit' %(celsius,fahrenheit))

Enter value in celcius= 98
98.0 degree Celsius is equal to 208.4 degree Fahrenheit
```

3. Write a Python program to display a calendar?

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[6]: import calendar

yy = int(input("Enter year = "))
mm = int(input("Enter month = "))

# display the calendar
print(calendar.month(yy, mm))
```

```
Enter year = 2023
Enter month = 1
January 2023
Mo Tu We Th Fr Sa Su
                1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31
```

4. Write a Python program to solve the quadratic equation?

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```
[8]: # Solve the quadratic equation  $ax^2 + bx + c = 0$ 
# solution for eq =  $(-b \pm (b^2 - 4 * a * c)^{0.5}) / (2 * a)$ 
# import complex math module
import cmath
a = int(input("Enter a number for a = "))
b = int(input("Enter a number for b = "))
c = int(input("Enter a number for c = "))

# calculate the discriminant
d = (b**2) - (4*a*c)

# find two solutions
sol2 = (-b-cmath.sqrt(d))/(2*a)
sol1 = (-b+cmath.sqrt(d))/(2*a)

print('The solution are {0} and {1}'.format(sol1,sol2))
```

```
Enter a number for a = 1
Enter a number for b = 4
Enter a number for c = 5
The solution are (-2+1j) and (-2-1j)
```

$$x^2 + 4x + 5 = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-4 \pm \sqrt{4^2 - 4(1)(5)}}{2(1)}$$

$$= \frac{-4 \pm \sqrt{16 - 20}}{2} = \frac{-4 \pm \sqrt{-4}}{2}$$

$$= \frac{-4 \pm 2i}{2} = -2 \pm i$$

Quadratic Equations with Complex Solutions -

5. Write a Python program to swap two variables without a temp variable?

5. Write a Python program to swap two variables without temp variable?

```
•[9]: x = int(input("Enter a number = "))
      y = int(input("Enter a number = "))

      print ("Before swapping: ")
      print("Value of x : ", x, " and y : ", y)

      # code to swap 'x' and 'y'
      x, y = y, x ##First right gets assigned to first left, second right gets assigned to second left, at the same time.

      print ("After swapping: ")
      print("Value of x : ", x, " and y : ", y)

      Enter a number = 5
      Enter a number = 10
      Before swapping:
      Value of x : 5 and y : 10
      After swapping:
      Value of x : 10 and y : 5
```