

Programming Assignment-2

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

Ans.

```
def km_to_miles(km):  
    # 1 kilometer is equal to 0.621371 miles  
    miles = km * 0.621371  
    return miles  
  
kilometers = float(input("Enter distance in kilometers: "))  
  
miles = km_to_miles(kilometers)  
print(f"{kilometers} kilometers is equal to {miles:.2f} miles")  
  
# You can also create a simple conversion table  
print("\nKilometer to Mile Conversion Table:")  
for km in range(0, 51, 10):  
    print(f"{km:3d} km = {km_to_miles(km):.2f} miles")
```

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

Ans.

```
def celsius_to_fahrenheit(celsius):  
    # Formula:  $(^{\circ}\text{C} \times 9/5) + 32 = ^{\circ}\text{F}$   
    fahrenheit = (celsius * 9/5) + 32  
    return fahrenheit  
  
celsius = float(input("Enter temperature in Celsius: "))  
  
fahrenheit = celsius_to_fahrenheit(celsius)  
print(f"{celsius}^{\circ}\text{C} is equal to {fahrenheit:.1f}^{\circ}\text{F}")
```

```
print("\nCelsius to Fahrenheit Conversion Table:")  
  
for c in range(0, 101, 10):  
    f = celsius_to_fahrenheit(c)  
    print(f"{c:3d}°C = {f:.1f}°F")
```

3. Write a Python program to display calendar?

Ans.

```
import calendar  
  
def display_calendar(year, month):  
  
    cal = calendar.month(year, month)  
    return cal  
  
year = int(input("Enter year: "))  
month = int(input("Enter month (1-12): "))  
  
print(display_calendar(year, month))  
  
def display_year(year):  
    cal = calendar.calendar(year)  
    return cal  
  
print("\nEntire Year Calendar:")  
print(display_year(year))  
  
if calendar.isleap(year):  
    print(f"{year} is a leap year")  
else:  
    print(f"{year} is not a leap year")
```

4. Write a Python program to solve quadratic equation?

Ans.

```
import cmath
```

```
def solve_quadratic(a, b, c):
```

```
    d = (b**2) - (4*a*c)
```

```
    sol1 = (-b + cmath.sqrt(d)) / (2*a)
```

```
    sol2 = (-b - cmath.sqrt(d)) / (2*a)
```

```
    return sol1, sol2
```

```
print("For a quadratic equation  $ax^2 + bx + c = 0$ ")
```

```
a = float(input("Enter coefficient a: "))
```

```
b = float(input("Enter coefficient b: "))
```

```
c = float(input("Enter coefficient c: "))
```

```
if a == 0:
```

```
    print("'a' cannot be zero in a quadratic equation.")
```

```
else:
```

```
    solution1, solution2 = solve_quadratic(a, b, c)
```

```
    print(f"The solutions are:")
```

```
    print(f"x1 = {solution1:.3f}")
```

```
    print(f"x2 = {solution2:.3f}")
```

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

Ans.

```
def swap_method1(x, y):
```

```
    x, y = y, x
```

```
    return x, y
```