Python Programming Concepts & Exercises

1. Given the total seconds, compute and print equivalent hours, minutes, and seconds using arithmetic operations.
2. total\_seconds = 3800
3. hours = total\_seconds // 3600
4. minutes = (total\_seconds % 3600)//60
5. seconds = total\_seconds%60
6. print(hours)
7. print(minutes)
8. print(seconds)

output:1,3,20

2. Assign the price and quantity of two products. Calculate the total cost including 18% tax. Print a detailed bill.

product1,product2 = "book","pen"

price1,price2 = 50,80

quantity1,quantity2 = 10,20

totalcost = (price1\*quantity1)+(price2\*quantity2)

total\_before\_tax = totalcost

tax = (totalcost\*18)/100

totalbill=totalcost + tax

print(".....Bill......")

print("totalcost:",totalcost)

print("tax:",tax)

print("totalbill:",totalbill)

output: .....Bill......

totalcost: 2100

tax: 378.0

totalbill: 2478.0

3. Compute the perimeter and area of a circle given a radius. Use the value of π from the math module

import math

radius = 8

perimeter = 2 \* math.pi \* radius

area = math.pi \* radius \*\* 2

print(perimeter)

print(area)

output: 50.26548245743669

201.06192982974676

4. Given a temperature in Celsius, convert it to Fahrenheit using the formula and print both values.  
 (F = C × 9/5 + 32)

celsius = 40

fahrenheit = celsius\*9/5+32

print(celsius)

print(fahrenheit)

output: 40

104.0

5. What is a compiled language? What is an interpreted language?  
 Explain pros and cons of each. How hybrid languages bring in advantages of both.

**Compiled language**: A compiled language is the code is translated into machine code by a compiler before it is run. The machine code is specific to the system processor, and once compiled,the program runs very fast.it can’t share the code and it share execution file.

Ex:c,c++

**Advantages:**

1.code privacy

2.Faster running

**Dis adv:**

1. No portability

2.not flexible changes

**Interpreted language**: it share the code and the code executed line by line by an interpreter.

Adv:1.portability

2.easy to debugging

**Dis adv:**

1. There is code privacy

2.slower execution

**Hybrid language:** Combine both compiled and interpreted languages

6. Draw the diagram of how a Python program is executed.

