**P E S University**

**Department** **of** **Computer** **Science** **&** **Engineering**

Session :Aug-Dec 2019

**Introduction** **to** **Computing** **using** **Python** **Laboratory(** **UE19CS102)**

**Week 2 – Programs on Arithmetic Operators**

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| 1 | Write a Python program to convert the length in feet to centimetre.  Solution:  l\_in\_feet = 20  l\_in\_cm = linfeet \* 30  print("length in centimeter", l\_in\_cm) |
| 2 | Given the radius, write a program to find the area & perimeter of a circle.  Solution:  radius = 8  pi = 3.142  Area = pi \* radius \* radius  Perimeter = 2.0 \* pi \* radius  print("Area of a Circle = ", Area, "\nPerimeter of a Circle = ", Perimeter) |
| 3 | Find the area of a triangle for the given three sides.  Solution:  side1 = 5  side2 = 8  side3 = 4  #compute s, which is half the perimeter  s = (side1 + side2 + side3)/2.0  Area = (s\*(s-side1)\*(s-side2)\*(s-side3))\*\*0.5  print("S = ", s, "\nArea of a Triangle = ", Area) |
| 4 | Given the distance between 2 cities in kilometers. Write a Python program convert it into meters, centimeters, feet and inches and display the result.  Solution:  km = 5 #distance between two cities in km  m = km \* 1000.0; #since 1km = 1000m  cm = km \* 100000.0; #since 1km = 100000cm  feet = km \* 3280.84; #since 1km=3280.84feet  inch = km \* 39370.1; #since 1 km=39370.1inches  print("Distance in kilometres = ", km, "\nDistance in metres = ",m , "\nDistance in centimetres = ", cm, "\nDistance in feet = ", feet, "\nDistance in inches = ",inch); |
| 5 | Swap the contents of two memory locations  - using temporary variable.  - without using temporary variable.  Solution:  locx = 56  locy = 98  print("Contents of two memory locations before swapping : \nlocation x = ",  locx, "\nlocation y = ", locy)  print("\nSwapping the contents of two memory locations using a temporary variable\n")  temp = locx  locx = locy  locy = temp  print("Contents of two memory locations after swapping : \nlocation x = ",locx, "\nlocation y = ", locy)  print("\nSwapping the contents of two memory locations without using a  temporary variable\n")  locx = locx + locy  locy = locx - locy  locx = locx – locy  print("Contents of two memory locations after swapping : \nlocation x = ",  locx, "\nlocation y = ", locy) |
| 6 | Program to  i) Convert temperature in celsius to fahrenheit  ii) Convert temperature in fahrenheit to celsius  Solution:  i) Convert temperature in celsius to fahrenheit.  celsius = 37.5 # change this value for a different result  fahrenheit = (celsius \* 1.8) + 32  print(celsius, “ degree Celsius is equal to “, fahrenheit, “ degree Fahrenheit”)  ii) Convert temperature in fahrenheit to celsius.  fahrenheit = -26.8 # change this value for a different result  celsius = (fahrenheit-32)/1.8  print(fahrenheit, “ degree Celsius is equal to “, celsius, “ degree Fahrenheit”)  **Optional .**  Note: students need to find out a value for which fahrenheit & celsius will have the same  value.  For -40 fahrenheit we get -40 as celsius |
| 7 | Given a 3-digit integer number, display the individual digits & compute the sum of digits.  Solution:  num = 123  digit1 = int(num%10)  num1 = num//10  digit2 = int(num1%10)  digit3 = num1//10  sum = digit1 + digit2 + digit3  print("The digits are : ", digit3, digit2, digit1, "\n Sum of digits = ",sum) |
| 8 | Calculate the salary of a salesman. His basic salary is Rs.25000/-,for every item he sells he will get Rs.200/- and the commission on the month’s sale is 12 %. The input will be number of particular item sold and the price of the item.  Note: Hard Code the input value.  Solution:  basic\_salary = 25000  bonus\_rate = 200  commision\_rate = 0.12  number\_of\_cameras\_sold = 5  price\_of\_each\_camera = 2500  bonus = (bonus\_rate \* number\_of\_cameras\_sold)  commision = (commision\_rate \* number\_of\_cameras\_sold \*  (price\_of\_each\_camera\*number\_of\_cameras\_sold))  print("Bonus = ", bonus)  print("Commision= ", commision)  print("Gross salary = " , (basic\_salary + bonus + commision)) |