Techno India University,W.B.
Department of Computer Applications
Subject:-Tools and Techniques of Programming using Python
ASSIGNMENT-2
Topic:Selection Logic in Python

By

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Develop Python scripts to solve following problems:

1. To determine the profit or loss on sale.
2. To determine greater between two numbers.
3. To determine the absolute difference between a given number and 123 and if it is greater than 123 then print the triple of the given number.
4. To validate a given **date**
5. To determine whether a quadrilateral is a square, rhombus, parallelogram, square or irregular on the basis of only the lengths of all the sides and one internal angle.
6. To print a currency conversion table from Pounds, Dollar, Euro to equivalent Indian Rupees.
7. To print the number of days in each month of a given year
8. To calculate commission of a salesman when the calculation of commission is based on the rules given below:

   (a) **Nil**, when the sales $<$10000 in region A

(b) **6.5%** of the sales if the sales <15000 in region B and <16000 in region A

(c) **8.5%** plus Rs.1500, if the sales >=15000 but <25000 in region B and >=16000 but <35000,in region A.

(d) **11%** of the sales plus Rs.4500 for all regions for all other cases.

9. To categorize a triangle on the basis of its three given angles. The triangle may be in an **'invalid triangle', 'Equiangular', ' right-angle', 'acute angled' or 'obtuse angled'.**

10. To accept the lengths of three sides of a triangle to check whether the given lengths can be valid lengths of three sides of a triangle and to categorize the triangle as **'Equilateral' or 'Isosceles' or 'Scalene'** one.

11. To compute the festival bonus of the employees on the basis of the basic pay and the designation as per the following rules:

Basic Pay	**Designation**	**Percentage of basic pay payable**
<40,000	Manager	12% of the basic pay subject to minimum of Rs. 2500
>=40,000	Manager	16% of the basic pay subject to maximum of Rs. 7500
<20000	Officer	14% of the basic pay subject to a minimum of Rs.2500 and a maximum of Rs.5000.
For all others cases	Whatever	8.9% of basic pay

12. For the first 75 calls, the charge is fixed and it is equal to Rs. 75; for the next 75 calls, the charge is calculated @Rs 0.75 per call; for the next 90 calls, the charge is Rs.0.65 per call and for the rest, if any, the rate is Rs.0.55 per call. It is required to determine the monthly bill of a subscriber.

13. In a certain country, the difference between two consecutive gas meter readings gives the amount of gas consumed in cubic feet. It is then multiplied by a factor 1.475 to convert it into the number of therms used by the consumer, where therm is the unit of billing. The meter readings are collected at the end of each month. The following rate chart is then used by the gas company to calculate the bill amount of each consumer:

No. of therms used	**Rate per therm**
<=125	Rs.7.75
>125 but <=250	Rs. 9.75 plus a surcharge of 1.25% over the calculated charge;
>250	Rs. 13.00 plus a surcharge 0f 2.5% over the calculated charge.

A meter rent of Rs.25 is also added to the gas charges of each consumer to determine the gas bill. If the gas meters display 8-digit

readings, then develop a script in Python is required to determine the monthly gas bill of the consumers.

14. In a certain area, the parking charge for cars is calculated according to the following rules: For the first 8.5 hours or part thereof, the rate is fixed and it is equal to Rs. 55; for the next every 2 hours or part thereof up to a maximum of 23 hours, the rate Rs. 13.75; beyond the 23 hours limit, the charge Rs. 5.50 for every minute. Develop a Python script to calculate the parking charge for the users of the area.

15. Develop a Python script to determine the minimum number of 100 rupee notes, 200 rupee notes, 500 rupee notes and 2000 rupee notes required to dispense a given sum of money.

16. It is required to print the name of the starting day of any given year.