PLT- Problems

Level-1:

1. Tax Calculator:

Write a program to accept name, empId, basic, special allowances, percentage of bonus and monthly tax saving investments. The gross monthly salary is basic + special allowances.

Compute the annual salary. The gross annual salary also includes the bonus.

Compute the annual net salary, by deducting taxes as suggested.

a. Income upto 2.5 lakhs – exempted

b. Income from 2.5 lakhs to 5 lakhs – 5%

c. Income from 5 lakhs to 10 lakhs – 20%

d. Income from 10 lakhs onwards – 30%

However, if there is any tax saving investment, then there is further exemption of upto 1.5 lakhs annually. This would mean that by having tax saving investments of about 1.5 lakhs, an income of 4 lakhs is non-taxable. Display the annual gross, annual net and tax payable

1. Report Card:

Write a program to accept a student’s name and scores in three subject. Display the 1st, 2nd, average and total. Display whether the student has secured 1st , 2nd , pass class or has failed.

1st class is for a score of 60 and above,

2nd class is for a score of 50 and above, while pass class is for a score of 35 and above. If the score is less than 35, then the student fails.

1. Simple Interest:

Write a program to accept principle, rate of interest and time. Calculate simple interest and display the same

Write a program to accept a number and display whether it is an even or odd number

Write a program to accept a double value. Separate the whole value from the fractional value and store them in two variables. Display the same.

1. Vendor Transaction:

A vendor offers software services to a client. Each resource is billed at some dollar rate per hour. The total cost of the project for the client is therefore, the total number of hours contributed by all the vendor resources \* the dollar rate / hour. There are however some variants.

a. The vendor might have purchased hardware/infrastructure or software licenses needed for the project.

b. The vendor might have utilized external consultants for the project.

c. The client looks at the vendor as a one stop solution and hence external resources employed by the vendor need to be paid by the vendor.

d. It might however be possible that the vendor’s hardware and software purchases are borne by the client. In this case, the client pays the vendor 30% of the hardware/infrastructure costs. In case of software licenses, the client pays the vendor 50% of the cost, if they are commonly available and used, or 100% if the software is infrequently used or is proprietary client technology.

e. The external consultants employed by the vendor will come at a dollar rate per hour.

f. Accept the suitable inputs and display the profits / loss realized by the vendor.

Level-2:

Loops:

1.Write as many programs to generate the following series. In all the following cases, accept N:

a. 4, 16, 36, 64, … N

b. 1, 4, 27, 256, 3125, … N

c. 1, 4, 7, 12, 23, 42, 77, … N

d. 1, 4, 9, 25, 36, 49, 81, 100, … N

e. 1, 5, 13, 29, 49, 77, … N

2. Write a program to display the series 1, 3, 7, 13, 21, 43, 57, 73, 91, 111, 157, 183, 211 .... N

3. Prime Number:

Write a program to find the sum of all the prime numbers in the range n to m. Display each prime number and the final sum

4.Comapny Item:

Accept the item code, description, qty and price of an item. Compute the total for the item.

a. Accept the user’s choice. If the choice is ‘y’ then accept the next set of inputs for a new item and compute the total. In this manner, compute the grand total for all the items purchased by the customer.

b. If the grand total is more than Rs. 10,000/‐ then, the customer is allowed a discount of 10%.

c. If the grand total is less than Rs. 1,000/‐ and the customer chooses to pay by card, then a surcharge of 2.5% is levied on the grand total.

d. Display the grand total for the customer in number form and in words.

Level-3:

1. Multiple of 7:

Write a program to find the first 25 multiples of 7 which give the remainder 1, when divided by 2,3,4,5 and 6.

Example of one such number is 2401. This is a multiple of 7. However, the remainder is 1, when it is divided by 2,3,4,5 and 6.

Display the first 25 such numbers. Also display the number of multiples in these 25 numbers that end with 01.