Rajarata University of Sri Lanka

Department of Computing

ICT 1402 - Principles of Program Design and Programming
Tutorial 12 / Portfolio Activity

1. Type in and run the all programs presented in lecture note 12. Briefly describe the theory/ concept you learned from these programs separately.

2. Display all prime numbers between two Intervals using a function.

3. Find sum of natural numbers using a recursive function.

4. Calculate the power of a number using a recursive function.

5. Write a function to return the trip cost which calculated using the given distance in kilometers. Note: Take 35 LKR as travelling cost per kilometer.

6. Write a function to convert the LKR currency into US dollars.

7. Write a function to input source and destination and print the ticket for the route. Note: You can decide the payment calculator logic and passengers can ask more than one ticket at a time for different destinations.

   Read the following case study carefully.

   Question 8,9 and 10 are based on following case study

   Case Study
   Figure 1 depicts a flow chart used to calculate the sales commission paid for sales leaders in a particular organization weekly basis. In order to calculate the weekly sales commission, it reads the sales leader's information per current week such as employee number (empId), number of items sold (NoOfItemsSold) and unit price of the item sold (unitPrice). Sales commission is calculated based on the sales leader's earnings (leaderEarnings) and each and every sales leader is assigned to sell only one item. There are 20 sales leaders currently working in this organization and the commission is paid in the seventh day of each week regularly. Flow chart for calculating the sales commission is given in Figure 1.
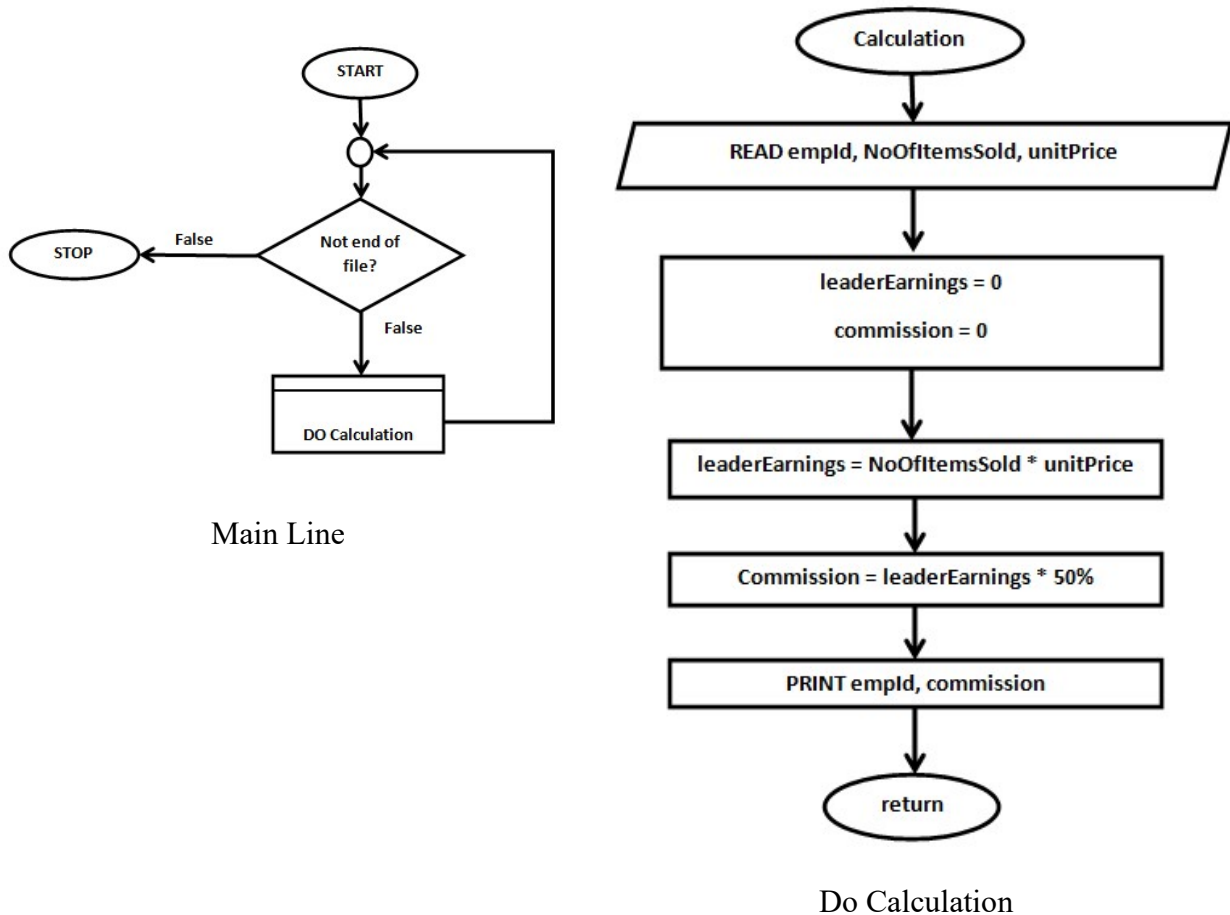
Main Line

Do Calculation

Figure 1 – Flow chart for Sales Commission calculator

8. Write a program for both main line and internal process of the flowcharts depicted in Figure 1.

9. Modify and re-write the program written in Question 8 to print the total amount paid as the weekly sales commission for all sales leaders.

10. Suppose that the management of this organization has decided to allow sales leaders to sell more than one different item as they wish. Modify and re-write the program written in Question 9 to satisfy this requirement. Note: 50% of total sales earnings is paid as the sales commission for a sales leader.

11. Write a function to input electricity unit charges and calculate total electricity bill according to the given condition:

   a. For first 50 units Rs. 0.50/unit
   b. For next 100 units Rs. 0.75/unit
   c. For next 100 units Rs. 1.20/unit
   d. For unit above 250 Rs. 1.50/unit