

## Iteration Programs

1. Write a loop that generates every third integer, starting from 2 till 100. Calculate the sum of those integers that are evenly divisible by 5.
2. Students are allowed to work in our computer centre machines only after entering the correct secret code. If the code is correct the message “Logged In” is displayed. They are not allowed to log in to the machine until they enter the correct secret code. Write a program to allow the student to work only if her/she enters the correct secret code
3. General Forge and Foundry pays its sales people by commission. If a sales person sells less than Rs.10,000 in a week the commission is 4% of the sales. Otherwise, if the sales person sells atleast Rs.10,000 in a week, the commission is 5%. Write a program that will accept the amount of sales in a week from ‘n’ sales persons, then outputs the amount of commission earned by each salesperson and the total commission
4. A cashier has currency notes of denominations 10, 50, 100 and 500. If the amount to be withdrawn is input through the keyboard in thousands, find the total number of currency notes of each denomination the cashier will have to give to the withdrawer.
5. Write a C program to read a number and print the number digit by digit. For example the number 456 is printed as four five six.
6. Vivanth & Co, a wholesale Company wants to compute the bill for the number of products a customer buys as well the overall amount of sales for the day.

The products sold by the company are:

S.No	Product Name	Price
1	Pumps	5000
2	Pipe	2000
3	Copper Wires	3000

The program should allow the customer to buy products repeatedly any number of times and print his/her bill and then continue to print the bill for the next customer. Repeat the same for ‘n’ customers and finally by the end of the day print the overall amount of sales made by the Company.

7. Write a program that takes in three arguments, a start temperature (in Celsius), an end temperature (in Celsius) and a step size. Print out a table that goes from the start temperature to the end temperature, in steps of the step size; you do not actually need to print the final end temperature if the step size does not exactly match. You should perform input validation: do not accept start temperatures less than a lower limit (which your code should specify as a constant) or higher than an upper limit (which your code should also specify). You should not allow a step size greater than the difference in temperatures.

Please give in a lower limit, limit  $\geq 0$  : 10  
 Please give in a higher limit,  $10 > \text{limit} \leq 100$  : 20  
 Please give in a step,  $0 < \text{step} \leq 10$  : 4

Celsius	Fahrenheit
10.000000	50.000000
14.000000	57.200000
18.000000	64.400000

8. Write a program that prompts the user for an integer value in the range 0 to 32,767 and then prints the individual digits of the number on a line with three spaces between the digits of the numbers on a line with three spaces between the digits, The first line is to start with left most digit and print all five digits; the second line is to start with the second digit from the left and print out four digits, and so forth. For example, if the user enter 1234 your program should print,

```

0   1   2   3   4
1   2   3   4
2   3   4
3   4
4
```

9. Write a C program to produce the following output:

```

          1
        1   1
      1   2   1
    1   3   3   1
  1   4   6   4   1
```

Challenging Problems:

10. Generate the following pyramid of digits using nested loops.

```
  1
 232
34543
4567654
567898765
67890109876
7890123210987
890123454321098
90123456765432109
0123456789876543210
```