C Programming

B.BHUVANESWARAN

Computer Science and Engineering

Rajalakshmi Engineering College

✉ bhuvaneswaran@rajalakshmi.edu.in

📞 +91 9791519152

General Instructions

▸ You can write programs in any programming language. Please download and use a local IDE if possible.

▸ There are 5 questions. You will be given questions one by one. Only after completing the current question, next question will be given.

▸ The questions are self-explanatory. Read the questions and understand them clearly before you start writing the programs.

▸ Test your program with the sample inputs along with other edge cases.

▸ Program logic, efficiency, coding standards and modularity will be considered for evaluation.

▸ Hard code inputs (like int x = 10, int scores[] = {40, 20}).

▸ Use only primitive data types. Don't use any library functions.

▸ Handle as many use cases as possible.

▸ Once you have completed the program inform the evaluator, get it verified and get next question.

Square Pattern Printing

▸ Print a pattern for a value M.

▸ In which the following two constraints are satisfied:

  ➥ The adjacent number will be the square of the current number in the same row for the first half.

  ➥ The second half will be the square root of the previous element.

Example 1

Input:

M = 3

Output:

```
        1
     2  4  2
  3  9  81  9  3
     2  4  2
        1
```

Example 2

Input:

M = 4

Output:

```
        1
      2  4  2
    3  9  81  9  3
4  16  256  65536  256  16  4
    3  9  81  9  3
      2  4  2
        1
```

Example 3

Input:

M = 5

Output:

```
        1
      2 4 2
    3 9 81 9 3
  4 16 256 65536 256 16 4
5 25 625 390625 152587890625 390625 625 25 5
  4 16 256 65536 256 16 4
    3 9 81 9 3
      2 4 2
        1
```

Year Chronological Order

▸ Given a list of sentences, each containing words indicating the month and year in format MMM_YYYY (eg. JAN 2019). Some sentences will contain only month in format MMM (eg. JAN). Such months should be considered to belong to current year i.e. 2022.

▸ Reorder this list of sentences in chronological order.

▸ Note:

▸ Inputs will contain months only from [Gregorian Calendar - JAN to DEC] and years greater than 0.

▸ No input sentence will contain more than one month_year mentioned.

Example 1

Input:

I went on an Everest expedition this JAN.
By MAR 2022, Higher Secondary exams are scheduled to be conducted.
Hiroshima and Nagasaki were bombed on 6th AUG 1945, which made japan to surrender to the Allies.
The first case of the COVID-19 pandemic in the Indian state of Tamil Nadu was reported on 7th MAR 2020.

Output:

Hiroshima and Nagasaki were bombed on 6th AUG 1945, which made japan to surrender to the Allies.
The first case of the COVID-19 pandemic in the Indian state of Tamil Nadu was reported on 7th MAR 2020.
I went on an Everest expedition this JAN.
By MAR 2022, Higher Secondary exams are scheduled to be conducted.

Example 2

Input:

I was born in AUG 2012.
This MAR, we went on a trip.
Our parents got married on JUN 1995.
India got independence on AUG 1947 from Great Britain.

Output:

India got independence on AUG 1947 from Great Britain.
Our parents got married on JUN 1995.
I was born in AUG 2012.
This MAR, we went on a trip.