

COMPUTER SCIENCE – 2007

Paper-2
(PRACTICAL)

(Reading Time : 15 minutes

(Planning Session : 60 to 90 minutes)

(Examination Session: 90 to 120 minutes)

(Maximum Marks: 80)

INSTRUCTIONS

As it is a practical examination, the candidate is expected to do the following:

- (a) *Write an algorithm for the selected problem.*
- (b) *Write a program in C++/Java. Document your program by using mnemonic names and comments.*
- (c) *Test run the program on the computer using the given test data and get a print out (hard copy) in the format specified in the problem along with the program listing.*

*Solve any **one** of the following problems:*

- Q1. Write a program to accept a date in the string format dd/mm/yyyy and accept the name of the day on 1st of January of the corresponding year. Find the day for the given date.

Example:

INPUT

Date : 5/7/2002

Day on 1st January : MONDAY

OUTPUT

Day on 5/7/2001 : THURSDAY

Test run the program on the following inputs.

<u>INPUT DATE</u>	<u>DAY ON 1ST JANUARY</u>	<u>OUTPUT DAY FOR INPUT DATE</u>
4/9/1989	THURSDAY	FRIDAY
3/9/1999	FRIDAY	TUESDAY
6/12/2000	SATURDAY	WEDNESDAY

The program should include the part for validating the inputs namely the date and the day on 1st January of that year.

- Q3. The input in this problem will consists of a number of lines of English text consisting of the letters of the English alphabet, the punctuation marks (‘) apostrophe, (.) full stop, (,) comma, (;) semicolon, (:) colon and white space characters (blank, newline). Your task is to print the word of the text in reverse order without a punctuation marks other than blanks.

For example consider the following input text:

This is a sample piece of text to illustrate this problem. If you are smart you will solve this right.

The corresponding output would read as:

right this solve will you smart are you If problem this illustrate to text of piece sample a is This.

that is , the lines are printed in reverse order.

Note: Individual words are not reversed.

Input format

The first line of input contains a single integer $N (< = 20)$, indicating the number of lines in the input. This is followed by N lines of input text. Each line should accept a maximum of 80characters.

Output format

Output the text containing the input lines in reversed order without punctuation except blanks illustrated above.

Test your program for the following data and some random data.

SAMPLE DATA

INPUT:

2

Emotions, controlled and directed to work, is character.
By Swami Vivekananda.

OUTPUT:

Vivekananda Swami by character is work to directed and controlled Emotions.

INPUT:

1

Do not judge a book by its cover.

OUTPUT

cover its by book a judge not Do.

- Q3. A unique-digit integer is a positive integer (without leading zeros) with no duplicates digits. For example 7, 135, 214 are all unique-digit integers whereas 33, 3121, 300 are not.

Given two positive integers m and n , where $m < n$, write a program to determine how many unique-digit integers are there in the range between m and n (both inclusive) and output them.

The input contains two positive integers m and n . Assume $m < 30000$ and $n < 30000$. You are to output the number of unique-digit integers in the specified range along with their values in the format specified below:

SAMPLE DATA:

INPUT:

$m = 100$

$n = 120$

OUTPUT:

THE UNIQUE-DIGIT INTEGERS ARE:

102, 103, 104, 105, 106, 107, 108, 109, 120.

FREQUENCY OF UNIQUE-DIGIT INTEGERS IS : 9

INPUT:

m = 2500

n = 2550

OUTPUT:

THE UNIQUE-DIGIT INTEGERS ARE:

2501, 2503, 2504, 2506, 2507, 2508, 2509, 2510, 2513, 2514, 2516, 2517,
2518, 2517, 2530, 2519, 2530, 2531, 2534, 2536, 2537, 2538, 2539, 2540,
2541, 2543, 2546, 2547, 2548, 2549.

FREQUENCY OF UNIQUE-DIGIT INTEGERS IS: 28.
