THE BISHOP'S SCHOOL, CAMP, PUNE

PROJECT WORK (2010 - 2011)

SUBJECT : COMPUTER APPLICATION

CLASS : X **APRIL / MAY 2010**

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Note: Programs should be submitted in writing along with the description table.

1. Write a program in Java using loops to display the following patter:

<table>
<tr>
<td>i.

1
121
12321
1234321
12321
121
1</td>
<td>ii.

a a a a
a a a
a a
` a
a a
a a a
a a a a</td>
</tr>
<tr>
<td>iii.

0
10
010
1010
01010</td>
<td>iv.

123454321
1234 4321
123 321
12 21
1 1</td>
</tr>
</table>

2. Write a program to compute the sum of the following series:

i. $\frac{x!}{10} + \frac{(x+2)!}{15} + \frac{(x+4)!}{20} + \ldots\ldots\ldots\ldots\ldots\ldots \frac{(x+n)!}{m}$

ii. $\frac{x^1}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \ldots\ldots\ldots\ldots\ldots \frac{x^n}{n!}$

iii. (1 + 2) + (1 + 2 + 3) + (1 + 2 + 3 + 4) +……..(1 + 2 + 3 +…….n)

iv. $\frac{1+2}{1*2}+\frac{1+2+3}{1*2*3}+\ldots\ldots\ldots\ldots\ldots+\frac{1+2+3+4+\ldots\ldots n}{1*2*3*4*\ldots\ldots n}$

3. Write a Menu-Driven program in Java to perform either of the following depending on the User's choice:

   i. Accept two string from the user as First Name and Last Name and combine it. For Example Sachin Tendulkar should be combined as S.Tendulkar

   ii. Write a program to input a sentence and print the number of characters found in the longest word of the given sentence.
   For example if S="India is my country" then the output should be 7.

   iii. Accept a string and count the number of vowels and space in it and print the no of vowels and space separately.

   iv. Consider a string "MEDIA REVOLUTION". Write a program that displays the number of times a letter 'O' exits in it.

4. Write a Menu-Driven program to:

   i. Accept a number from the user and find whether it is a Krishnamurty number or not.
   Eg: 145 is Krishnamurthy number as 1! + 4! + 5! =145, where
   n!= 1*2*3*…..*n.

   ii. Accept a number from the user and find whether it is a magic number or not.
   For example, 127 is a magic number as 127 = 1+ 2 + 7 =10, 10 = 1 + 0 = 1
   235 is a magic number as 235 = 2 + 3 + 5 = 10, 10 = 1 + 0 =1.

iii. Accept a number from the user and print whether it is an Armstrong number or not.
For example 153 is an Armstrong number as $1^3 + 5^3 + 3^3 = 153$.

iv. Accept a number from the user and print whether it is a prime number or not.
Eg a number is a prime number if it is only divisible by itself and 1.

5. Write a program to

i. Read the following list of countries and their respective cities into arrays. The program should accept the name of a country in the list as input and print the corresponding city name as output. The program should give an error message when a city is asked or a country whose name is not in the list.

ii. Accept 15 integers from the console. Sort the list in ascending order using bubble sorting method.

iii. To print the second largest no from a list of 35 nos and print the no as well as its position where it occurs.

iv. Initialize an array year[] with the values inputted from keyboard. WAP that prints the number of leap years inputted.

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