GIRLS' HIGH SCHOOL AND COLLEGE, PRAYAGRAJ

ASSIGNMENT -01

SESSION 2020-2021

CLASS 12 B

SUBJECT: COMPUTER SCIENCE

Instructions:

1. The parents to ensure that their ward watches the video instructions for this assignment by clicking on the given link: https://youtu.be/0Z9USyc1dxY. She should revise the lesson given in the book and then work on the assignment. The completed assignment is to be downloaded and filed/pasted in the subject file/copy and kept ready for submission. The day date and procedure of submission shall be notified later.

Reference Book: Computer Science with Java Class 12 by Sumita Arora

TOPIC – ARRAYS

Answer the following questions:

1. What is an array?

2. A matrix B[10][7] is stored in the memory with each element requiring 2 bytes of storage. If the base address at B[x][1]is 1012 and the address at B[7][3] is 1060, determine the value 'x' where the matrix is stored in Column Major Wise.

3. Each element of an array A[-15…10, 15….40]requires one byte of storage. If the array is stored in column major order with the beginning location 1500, determine the location of A[5,20].

4. A square matrix M[ ][ ] of size 10 is stored in the memory with each element requiring 4 bytes of storage. If the base address at M[0][0] is 1840, determine the address at M[4][8] when the matrix is stored in Row Major Wise.

5. A class Matrix has been defined to create an [MXM] matrix(where 1<M<6) with first MxM magic numbers (A magic number is a number in which the eventual sum of digits of the number is equal to 1). Some of the members of the class are given below:

Class name   :   Matrix

Data Members/instance variables:

mat[ ][ ]   :   2-dimensional array to store integers

m   :   size of the matrix

Member functions:

Matrix(int m)   :   constructor to initialize the data members

void fillarr( )   :   to fill the matrix with first MXM magic numbers

int isMagic(int)   :   to check whether the number is magic or not

void display( )   :   to display the matrix

Specify the class Matrix giving the details of constructor(), void fillarr( ), int isMagic(int) and void display( ). You need not write the main method.

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