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**Reg: SP21-BSE-008**

**Section: C**

**Question No 1:**

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| **Solution:**  **#include<stdio.h>**  **int \*getArray1D(int n); //function prototype**  **void convertArray2D(int n);**  **int main()**  **{**  **int n = 16;**  **convertArray2D(n);**  **return 0;**  **}**  **int \*getArray1D(int n)**  **{**  **int i;**  **int array[n];**  **printf("\n\t------Muhammad Talha Shafiq SP21-BSE-008\n");**  **printf("\t------Terminal Lab Exam\n");**    **//input in one Dimentional array**  **for(i = 0 ;i<n;++i)**  **{**  **printf("Enter a number: ");**  **scanf("%d",&array[i]);**  **}**  **//return the pointer to the 1D array**  **return array;**  **}**  **void convertArray2D(int n)**  **{**  **int i,j;**  **int \*ptr = getArray1D(n);**  **int array[4][4];**  **//storing the value from 1D array into 2D array**  **for(i = 0;i<4;++i)**  **{**  **for(j = 0;j<4;++j)**  **{**  **array[i][j] = \*ptr;**  **ptr++;//increment the pointer**  **}**  **}**  **printf("\n\nDipalying The 2D Array\n\n");**  **for(i = 0;i<4;++i)**  **{**  **for(j = 0;j<4;++j)**  **{**  **printf("%d\t",array[i][j]);**  **}**  **printf("\n");**  **}**  **}**  **Text  Description automatically generated** |

**Question No 2**:

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| Solution:  **#include<stdio.h>**  **#include <string.h>**  **int checkUpperCase(char ch);**  **int SumOfASCII(char str[]);**  **int main()**  **{**  **char str[200]; //Declear string**  **char upperArray[200]; // Delear upper String**  **char lastArray[200]; // Declare char array lastArray**  **int k1=0,k2=0,i;**  **//Enter the String**  **printf("String: ");**  **// store into str variable**  **gets(str);**  **int len =strlen(str); //length of string**  **for(i=0;i<len;i++)**  **{**  **if(checkUpperCase(str[i])) // call checkUpperCase function**  **{**  **upperArray[k1++]=str[i];**  **}**  **}**  **for(i=0;i<len;i++)**  **{**  **if(str[i] == ' ')**  **{**  **// the last character of each word**  **lastArray[k2++]=str[i-1];**  **}**  **}**  **lastArray[k2++]=str[len-1]; // the last character of word last word**    **// Display the upperArray char array**  **printf("a) ");**  **for(i=0;i<k1;i++)**  **{**  **printf("%c",upperArray[i]);**  **}**  **printf("\nb) "); // Display the lastArray char array**  **for(i=0;i<k2;i++)**  **{**  **printf("%c",lastArray[i]);**  **}**  **printf("\nc) "); // Display the ASCII sum**  **printf("%d",SumOfASCII(str));**  **return 0;**  **}**  **// check character is uppercase or not**  **int checkUpperCase(char ch)**  **{**  **// if char between A-Z**  **if(ch >= 65 && ch <= 90)**  **{**  **return 1;// return 1**  **}**  **return 0;// return 0**  **}**  **// Calculate the sum of ASCII values of the given string**  **int SumOfASCII(char str[])**  **{**  **int i=0;**  **int sum =0 ;**  **int val ;**  **while(str[i])**  **{**  **val = str[i];**  **if(val >= 65 && val <= 90)**  **{**  **sum =sum + val;**  **}**  **else if(val >= 97 && val <= 122)**  **{**  **sum =sum + val;**  **}**  **i++;**  **}**  **// return the sum**  **return sum;**  **}**  Text  Description automatically generated |