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| **LIST OF TEST CASES FOR THE ASSIGNMENT1OF DATA STRUCTURE LAB CS392** | | |
| **ASSIGNMENTS** | **INPUT** | **OUTPUT** |
| 1.1 Write a program to display n number of elements. Memory should be allocated dynamically using malloc( ). | Enter the size of the array: 5  Enter the values: 3 1 6 37 27  Enter the number to be searched: 6 | 6 is found (SUCCESS) |
| Enter the size of the array: 5  Enter the values: 3 1 6 37 27  Enter the number to be searched: --6 | Invalid input (FAILURE) |
| 1.2. Write a program to display n number of elements. Memory should be allocated dynamically using calloc( ). | Enter the size of the array: 5  Enter the values: 4 5 8 3 7  Enter the number to be searched: 3 | 3 is found (SUCCESS) |
| Enter the size of the array: 5  Enter the values: 4 5 8 3 7  Enter the number to be searched: --27 | Invalid input (FAILURE) |
| 1.3 Write a program to allocate memory using malloc( ) and then reallocate the previously allocated memory using realloc( ). Display the elements which have been taken after reallocation. | Enter the size of the array: 3  Enter the reallocation of the array: 5  Input elements : 1 2 3 4 5 | 1 2 3 4 5 (SUCCESS) |
| 1.4 Write a program to allocate memory using calloc( ) and then reallocate the previously allocated memory using realloc( ). Display the elements which have been taken after reallocation. | Enter the size of the array: 3  Enter the reallocation of the array: 5  Input elements : 1 2 3 4 5 | 1 2 3 4 5 (SUCCESS) |
| 1.5 Write a program to allocate memory dynamically, print n number of characters and then release the allocated memory using free( ). | Enter the size of the array: 5  Enter the values: 4 5 8 3 7  After release: | 4 5 8 3 7  Memory will be free. (SUCCESS) |
| 1.6 Write a C program to search an element in an Array using dynamic memory allocation. | Enter the size of the array: 5  Enter the values: 4 5 8 3 7  Values to be searched: 5 | 5 at 2nd position. (SUCCESS) |
| Enter the size of the array: 5  Enter the values: 4 5 8 3 7  Values to be searched: 9 | Item not found. (FAILURE) |
| 1.7 Write a C program to find the3rd maximum element in an array using dynamic memory allocation. | Enter the size of the array: 5  Enter the values: 4 5 8 3 7  3rd maximum no: | 5 (SUCCESS) |
| 1.8 Write a C program to find the minimum element in an array using dynamic memory allocation | Enter the size of the array: 5  Enter the values: 4 5 8 3 7  Minimum no: | 3 (SUCCESS) |
| 1.9 Write a C program to search an element in a 2D-Array using dynamic memory allocation. | No. of rows and columns: 2 2  a[0][0]: 1  a[0][1]: 2  a[1][0]: 3  a[1][1]: 4  No. to be searched: 3 | 3 at 3rd position (SUCCESS) |
| No. of rows and columns: 2 2  a[0][0]: 1  a[0][1]: 2  a[1][0]: 3  a[1][1]: 4  No. to be searched: 6 | Item not found (FAILURE) |
| 1.10 Write a C program to find the maximum element in a 2D-array using dynamic memory allocation | No. of rows and columns: 2 2  a[0][0]: 1  a[0][1]: 2  a[1][0]: 3  a[1][1]: 4  Maximum number : | 4 (SUCCESS) |
| **ASSIGNMENT** | **INPUT** | **OUTPUT** |
| 1.11 Write a C program to find the minimum element in a 2D-array using dynamic memory allocation | No. of rows and columns: 2 2  a[0][0]: 1  a[0][1]: 2  a[1][0]: 3  a[1][1]: 4  Minimum number : | 1 (SUCCESS) |
| 1.12 Write a C program to merge two sorted dynamic array | Enter the size of the array: 4  Enter sorted elements of 1st array : 1 2 3 4  Enter sorted elements of 2nd array : 5 6 7 8  After merging two arrays: | 1 2 3 4 5 6 7 8 (SUCCESS) |
| Enter the size of the array: 4  Enter sorted elements of 1st array : 1 2 3 4  Enter sorted elements of 2nd array : 5 6 7 8  After merging two arrays: | 1 6 8 5 2 4 3 7 (FAILURE) |
| 1.13 Write a C program to merge two unsorted dynamic array in sorted order | Enter elements in arrays:  a[]={ 13 2 4 }  b[]={7 5 8 6}  After Sorting arrays are merged as: | 1 2 3 4 5 6 7 8 (SUCCESS) |
| Enter elements in arrays:  a[]={ 13 2 4 }  b[]={7 5 8 6}  After Sorting arrays are merged as: | 1 6 8 5 2 4 3 7 (FAILURE) |
| 1.14 Write a C program to delete a range of data from a dynamic array | Enter the range of data in an array: 5  Enter the elements: 7 8 9 10 11  Enter the location where you want to delete: 3 | Resultant array:  7 8 10 11  9 was positioned at the 3rd pos. Which is deleted (SUCCESS) |
| Enter the range of data in an array: 5  Enter the elements: 7 8 9 10 11  Enter the location where you want to delete: 3 | Resultant array:  7 8 9 10 11  9 is not deleted from 3rd pos. (FAILURE) |
| 1.15 Write a C program to modify the size of an array and utilize that during run time. | Enter the size of the array: 5 | 1 2 3 4 5  5 elements are able to add in the array as per user input. (SUCCESS) |
| Enter the size of the array: 5 | 1 2 3  If not able to add the rest 2 elements (FAILURE) |
| 1.16 Write a C program to program to find the3rd maximum element in a 2D array using dynamic memory allocation | No. of rows and columns: 2 2  a[0][0]: 8  a[0][1]: 5  a[1][0]: 4  a[1][1]: 7  3rd Maximum number : | 5 (SUCCESS) |
| No. of rows and columns: 2 2  a[0][0]: 8  a[0][1]: 5  a[1][0]: 5  a[1][1]: 5  3rd Maximum number : | NOT PRESENT (FAILURE) |
| 1.17 Write a C program to store the ages in a 2D dynamic array. Every row must have a specific range. At the time of taking input data will go to a specific position of a row if it is blank otherwise display full message | Enter the array size:3 2  1ST ROW RANGE 10-20  2ND ROW RANGE 21-30  3RD ROW RANGE 31-40  ENTER AGE: 25  ENTER AGE:15  ENTER AGE:36  ENTER AGE:27  ENTER AGE:46 | ARRAY DETAILS:  15 - -  25 27 -  36 - -  46 IS INVALID AGE |
| 1.18 Write a C program to store multiple name in a 2D dynamic array and then  count the length of the different name. | Enter the array size: 2 2  a[0][0]: CSE  a[0][1]: ECE  a[1][0]: ME  a[1][1]: BT  NAMES ARE: | CSE 3  ECE 3  ME 2  BT 2  (SUCCESS) |
| Enter the array size: 2 2  a[0][0]: 12  a[0][1]: 45  a[1][0]: 34  a[1][1]: 21  NAMES ARE: | NOT A NAME  NOT A NAME  NOT A NAME  NOT A NAME  (FAILURE) |
| 1.19 Write a C program to store the week name in an array efficiently and then  print them. | Enter the array size: 7  Week names are: | MONDAY, TUESDAY, WEDNESDAY, THURSDAY  FRIDAY, SATURDAY  SUNDAY  (SUCCESS) |
| 1.20 Write a C program to declare n number of dynamic 1D array and then  combine them to generate a dynamic 2d array. Also display the same. | Enter the number of 1D array:3  Enter data for 1st 1D array:  4 5 6  Enter data for 2nd 1D array:  14 15 16  Enter data for 3rd 1D array:  6 7 8  2D array is: | a[0][0]: 4  a[0][1]: 5  a[0][2]: 6  a[1][0]: 14  a[1][1]: 15  a[1][2]: 16  a[2][0]: 6  a[2][1]: 7  a[2][2]: 8  (SUCCESS) |