University of Colombo School of Computing
SCS 1208 - Data Structures and Algorithms II

Lab Sheet 04

1. The size of the Void Pointer in C depends on the type of Platform you are using.
   For 32-Bit Architecture: 4 Bytes
   For 64-Bit Architecture: 8 Bytes.
   You have to write a code which checks the size of void pointer in C.

2. Implement a program in C that reads a sequence of integers from the user until a sentinel value (e.g., -1) is entered. Use dynamic memory allocation (`malloc`, `calloc`, `realloc`) to store the integers in an array. The program should dynamically resize the array as needed. After entering the sentinel value, print the entered integers in reverse order and free the allocated memory.

3. Enhance the previous program by writing a C program that finds the maximum element in the array. Use a function `**findMaxElement**` with void pointers.

4. Implement a C program that concatenates two arrays of integers using a function called **concatArrays** with void pointers.

   The program should:
   - Prompt the user to enter the number of elements for the first array.
   - Allow the user to input elements for the first array.
   - Prompt the user to enter the number of elements for the second array.
   - Allow the user to input elements for the second array.
   - Concatenate both arrays using the concatArrays function and print the resulting concatenated array.
   - Free the dynamically allocated memory used for the arrays.

5. Implement a C program that allows users to input a sequence of integers and removes duplicates from the entered array using a function called **removeDuplicates** with void pointers.

   Eg: Expected output

   Enter the number of integers to input: 3
   Enter 3 integers: 1 2 2
   Array after removing duplicates: 1 2

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