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| **Computer Engineering Department - ITU** |
| **Object Oriented Programming** |

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| **Course Instructor: Usama Bin Shakeel** | **Dated: 13/03/2022** |
| **Teaching Assistant: Aqsa Khalid** | **Semester: Spring 2022** |
| **Lab Engineer: Nadir Abbas** | **Batch: BSCE2021** |

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| ASSIGNMENT -1 |

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| NAME: NIMRA MAQBOOL |
| ROLL NO. BSCE21012 |

**TASK 1 (SWAP 2 NUMBERS):**

**IN FUNCTION.CPP:**

* IN THE PROTOTYPE I MADE 2 POINTER VARIABLES OF FLOAT DATA TYPE NAMED A AND B.
* THEN I MADE AN FLOAT TYPE VARIABLE OF NAME TEMP.
* THEN I JUST SWAPED THE VALUES IF A INTO B.
* I PUT THE VALUES OF A INTO TEMP, THEN B IN A THEN TEMP INTO B.
* THEN I DISPLAYED THE SWAPPED ADDRESS OF VALUES TOO.

**FUNCTION.HEADER:**

* IN HEADER FILE I JUST WRITE THE PROTOTYPE OF FUNCTION.

**IN MAIN:**

* I MADE 2 VARIABLES OF FLOAT DATA TYPE NAMED NUM1 AND NUM2.
* I TAKE VALUES OF NUM1 AND NUM2 FROM THE USER.
* THEN I CALLED THE FUNCTION WITH THE AMPERCENT SIGN (&).
* THEN I DISPLAYED THE SWAPED VALUES OF NUM1 AND NUM2 IN MAIN.

**OUTPUT OF TASK 1:**

**A screenshot of a computer

Description automatically generated with medium confidence**

**TASK 2 (SWAP 2 ARRAYS):**

**IN FUNCTION.CPP:**

* THEN I MADE AN INT DATA TYPE VARIABLE OF NAME TEMP.
* IN THE FOR LOOP, I JUST SWAPED THE ARRAYS. THE FIRST ELEMENT OF ARRAY IS STORED IN TEMP THEN ARRAY1 VALUE IS STORED IN ARRAY AND THEN TEMP VALUE IS STORED IN ARRAY1, AND THEN THIS PROCESS CONTINUES FOR ALL THE ELEMENTS OF ARRAY.AND HENCE ARRAYS GOT SWAPED.
* THEN I APPLY AN OTHER FOR LOOP IN WHICH I DISPLAYED THE FIRST SWAPED ARRAY.
* THEN ANOTHER FOR LOOP IS APPLIED IN WHICH I DISPLAYED THE SECOND SWAPED ARRAY.

NOTE: I DIDN’T DISPLAYED THE BOTH ARRAYS IN 1 FOR LOOP BCZ IT WILL DISPLAY 1 VALUE OF ARRAY 1 AND THEN SECONED VALUE OF ARRAY 2.

**FUNCTION.HEADER:**

* IN HEADER FILE I JUST WRITE THE PROTOTYPE OF FUNCTION.

**IN MAIN:**

* IN MAIN, I INITIALIZED SIZE AND TAKEN SIZE OF ARRAYS FROM THE USER.
* I DINAMICALLY ALLOCATED 2 ARRAYS NAMED ARRAY AND ARRAY1 OF DATA TYPE INT HAVING SIZE THAT IS GIVEN BNY THE USER.
* THEN I TOOK THE ELEMENTS OF ARRAY AND ARRAY1 FROM THE USER BY USING FOR LOOP.
* THEN I CALLED THE FUNCTION.
* IN THE END I DELEDTED THE ARRAYS.

**OUTPUT:**Text

Description automatically generated

**TASK 3(REVERSE AN ARRAY):**

**IN FUNCTION.CPP:**

* I INITIALIZED AN VARIABLE OF INT DATA TYPE NAMED TEMP.
* THEN I INITIALIZED AN VARIABLE OF INT DATA TYPE NAMED J AND STORED THE SIZE-1 IN IT.
* THEN I USED AN FOR LOOP STARTING FOR I=0, TO I<J AND THEN INCRIMENTING I AND DECREMENTING J (HAVING SIZE-1) IN IT.
* THEN I DISPLAYED THE REVERSED ARRAY IN IT.

NOTE: I PUT THE SIZE-1 IN J BECAUSE THE ARRAY START FROM 0 AND END TO SIZE-1.

**FUNCTION.HEADER:**

* IN HEADER FILE I JUST WRITE THE PROTOTYPE OF FUNCTION.

**IN MAIN:**

* IN MAIN, I INITIALIZED A VARIABLE OF INT DATA TYPE NAMED SIZE1.
* THEN I DYNAMICALLY ALLOCATED THE ARRAY OF INT DATA TYPE HAVING SIZE1.
* THEN I TOOK THE SIZE1 FROM THE USER.
* I TOOK THE ELEMENTS OF ARRAY FORM THE USER USING FOR LOOP.
* THEN I DISPLAYED THE ARRAY TAKEN FROM THE USER BEFORE REVERSING.
* THEN I CALLED THE FUNCTION.
* IN THE END I DELETED THE ARRAY.

**OUTPUT:**

**Text

Description automatically generated**