Note: Give your full attention to complete task 1 having 40 marks, whereas task 2 and 3 have only 5 marks each.

Task 1: You have to perform file operations. Use same file name throughout. Consider you are handling numbers in two digits only. Therefore, take care, every input should be in two digits. Write code in functions according to the comments given in each function. Write fist and last function and run your program to test them, then one by one write more functions and test them:
   a. display one dimensional array in tabular form using mapping function:

```
void display1D_2D(int *x, const int ROWS, const int COLS)
```

```
void addValues(){
      //Input number of values to add in the file, open file in append mode
for writing. Generate random numbers between 10 to 100 and write in the file
according to the input and close the file
}
void searchValue(){
      //Input number to search, open file in reading mode. Read values till
end of file and compare number. If found print message number found at
position, specify position starting from 1. In case number not found in the
file print appropriate message, finally close the file
}
void modifyValue(){
      //Input number to find and number to replace, open file in both
reading and writing mode. Read values till end of file and compare number.
If found, get current location using tellg(), pass current location minus
two to seekp, write number to replace. If number not found, print message
number not found. Finally close the file
}
void deleteValue(){
      //Input number to delete. Get size of file by using seekg(0, ios::end)
and tellg() / 3. Decleare dynamic array. Move file pointer to start by using
seekg(0). Read all numbers in array. Close file and open file in output mode
(without append, contents will be delete automatically). Write all array
elements in the array, except the value to be deleted. Finally close the
file
}
void deleteAllValues(){
     //Simply open file in output mode and close
}
void showAll(){
     //Open file for reading and print all values till end of file
     //If there are no contents in the file, print File is empty
}
void showMenu(){
     cout << "\t1. Add values\n\t2. Search value\n\t3. Modify value\n";
     cout << "\t4. Delete value\n\t5. Delete all values\n\t6.Show All\n";
     cout << "\t7. Quit\n\n\tEnter Choice: ";
}
int main(){
     srand(time(0));
     int choice;
     do{
            showMenu();
            cin >> choice;
            switch(choice){
                  case 1:    addValues();              break;
```

```
            case 2: searchValue();              break;
            case 3: modifyValue();              break;
            case 4:    deleteValue();           break;
            case 5:    deleteAllValues();       break;
            case 6:    showAll();               break;
            default: cout << "Invalid Input\n";
        }
    }while (choice != 7);
    cout << "\n\n\tThanks! End of Program\n";
    return 0;
}
```

Task 2: Delete your file, physically from folder, and run your previous program. Try functions 2 to 5. Now do appropriate handling so that all of your functions work properly by checking fail operation and give appropriate message like "File does not exist" and in case of all contents deleted, if file not exist, give appropriate message, otherwise give message, "All values are deleted":

Task 3: Take some global variable to store file name. Modify your main function to input filename at start of the program and use that variable in all functions. Also modify your code to handle numbers from single to five digits. Modify add function to generate numbers of one, two, three, four & five digits. Use set width 5 to write numbers. For finding size take care of new size of each number in the file.

********* END OF LAB (Best of Luck) ********