



## Practical 10

### Aim:

create a data file with 1000 numbers using random function.

the sorting function will read the data file and sort the numbers, store the sorted numbers in another file.

vertices given by user.

### Code:

```
#include <iostream>
#include <fstream>
#include <vector>
#include <cstdlib>
#include <ctime>

void generateRandomNumbers() {
    std::ofstream file("random_numbers.txt");
    if (file.is_open()) {
        srand(time(0)); // Seed for random number generation

        for (int i = 0; i < 1000; ++i) {
            file << rand() % 10000 + 1 << "\n"; // Generating random numbers between 1 and 10000
        }

        file.close();
        std::cout << "Random numbers file generated successfully." << std::endl;
    }
    else {
        std::cerr << "Unable to create random numbers file." << std::endl;
    }
}

void bubbleSort(std::vector<int>& numbers) {
    int n = numbers.size();
    for (int i = 0; i < n - 1; ++i) {
        for (int j = 0; j < n - i - 1; ++j) {
            if (numbers[j] > numbers[j + 1]) {
                std::swap(numbers[j], numbers[j + 1]);
            }
        }
    }
}
```



BHARATIYA VIDYA BHAVAN'S  
**SARDAR PATEL INSTITUTE OF TECHNOLOGY**  
Munshi nagar, Andheri (W) ,Mumbai - 400058  
**DEPARTMENT OF MASTER OF COMPUTER APPLICATION**

### Practical 10

```
void sortAndStoreNumbers() {
    std::ifstream file("random_numbers.txt");
    if (file.is_open()) {
        std::vector<int> numbers;
        int num;
        while (file >> num) {
            numbers.push_back(num);
        }
        file.close();

        bubbleSort(numbers);

        std::ofstream sortedFile("sorted_numbers.txt");
        if (sortedFile.is_open()) {
            for (int i = 0; i < numbers.size(); ++i) {
                sortedFile << numbers[i] << "\n";
            }
            sortedFile.close();
            std::cout << "Numbers sorted and stored in 'sorted_numbers.txt' file." << std::endl;
        }
        else {
            std::cerr << "Unable to create sorted numbers file." << std::endl;
        }
    }
    else {
        std::cerr << "Unable to open random numbers file." << std::endl;
    }
}

int main() {
    generateRandomNumbers();
    sortAndStoreNumbers();

    return 0;
}
```



**BHARATIYA VIDYA BHAVAN'S**  
**SARDAR PATEL INSTITUTE OF TECHNOLOGY**  
Munshi nagar, Andheri (W) ,Mumbai - 400058  
**DEPARTMENT OF MASTER OF COMPUTER APPLICATION**

## Practical 10

### Output:

```
Microsoft Visual Studio Debu  X + v
Random numbers file generated successfully.
Numbers sorted and stored in 'sorted_numbers.txt' file.

C:\Users\Vivek\source\repos\Lab10\x64\Debug\Lab10.exe (process 27572) exited with code 0.
Press any key to close this window . . .|
```

Name	Date modified	Type	Size
x64	29-11-2023 10:45	File folder	
Lab10.cpp	29-11-2023 10:27	C++ Source	2 KB
Lab10.vcxproj	29-11-2023 10:26	VCXPROJ File	7 KB
Lab10.vcxproj.filters	29-11-2023 10:26	VC++ Project Filters ...	1 KB
Lab10.vcxproj.user	29-11-2023 10:26	Per-User Project Opti...	1 KB
random_numbers.txt	29-11-2023 11:19	Text Document	6 KB
sorted_numbers.txt	29-11-2023 11:19	Text Document	6 KB