**Labsheet 5**

**Arrays**

1. Write a program which reads in 10 integers from the user and stores them in an array. Find the largest value in the array and print it.
2. Modify the last program to use a preprocessor constant for the size of the array and in the test condition of the loop which processes the array.
3. Write a program which can store 10 integers in an array. Fill the array with “random” numbers using the library functions **rand()** and **srand()** instead of reading them from the user. Find the largest element in the array and print it out.

To use the random number generator, first call **srand()** like this:

**srand(17)**;

to “seed” the random number generator. Passing different values to **srand()** will make **rand()** return a different sequence of values.

Each time **rand()** is called it returns a “random” integer. Use the mod operator ( % ) to get a value in the desired range. For example:

int **result;**

result = **rand() % 1000;**

will assign a random value in the range **0 – 999** to the variable **result.**

Make sure your program contains the line:

**#include <stdlib.h>**

to include information about the **rand()** and **srand()** functions.

1. Modify the last program so that instead of finding the largest element in the array, the program sorts the elements of the array into ascending order.

One simple way to sort numbers is to find the smallest value in the array and exchange it with the first element. Then find the smallest remaining element (ignoring the first element) and swap it with the second element. Repeat this until all the elements are sorted. This method of sorting is very inefficient but is easy to program.