# **National University of Computer and Emerging Sciences**



# Lab Manual # 8 Programming Fundamentals (Section BSE-1A)

Course Instructor	Mr. Raziuddin
Lab Instructor(s)	Ms. ShaziaHaque Ms. Sonia Anum
Section	BSE-1A
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Department of Computer Science FAST-NU, Lahore, Pakistan

# **Objectives**

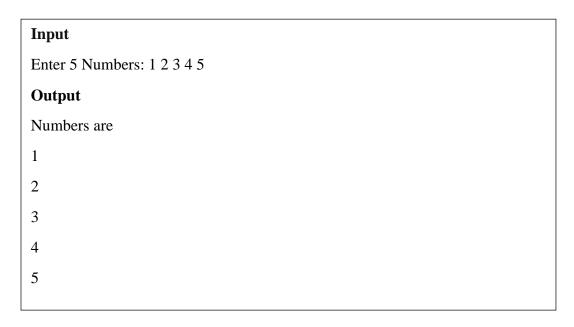
The objectives of this lab are to cover the following:

- user-defined functions (page 320 of textbook)
- parameter passing to functions by reference
- introduction to arrays

# **Question No 1 (array):**

Take 5 integer inputs from user and store them in an array and print them on screen.

#### **Example:**



#### **Question No 2 (function with nested loop):**

Implement the following function in C++ that takes a number as a parameter and then displays the following output. Within the function the outer loop should be do while and inner loop should be while loop.

#### void displayAlphbetSquare(int psize)

Input: 5

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С	С	С	С	С	
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### **Question No 3 (function with parameter by reference):**

Write a program in C++ (using function with parameter passed in by reference ) for a car renting business. The car rent is determined according to the following rate schedule:

- Any car rented from Monday through Friday, is billed at a rate of **Rs. 2000 per day**
- Any car rented on a Saturday or Sunday, is billed at a rate of **Rs. 3000 per day**.
- The input will consist of the day of the week and the number of days for which the car is rented. The output will be the total rent.
- The day of the week will be read as one of the following character values, which are stored in a variable of type *char*

M	T	$\mathbf{W}$	J	F	H	S
Mon	Tue	Wed	Thu	Fri	Sat	Sun

Please allow the user to use either uppercase or lowercase letters or a combination of the two. Your program should include a loop that lets the user repeat this calculation until the user says she or he is done (by entering e.g. 'X'). You can test your program on the following inputs:

- M 7 (Monday to Friday and then Saturday and Sunday as well, rent would be 16000)
- W 4 (Wednesday to Friday and then Saturday, rent would be 9000)

- S 2 (Sunday and Monday, rent would be 5000)

The function's signature should be as follows: void calculateCarRent( char day, int numOfdays, int &rent)

It could be called from main function as follows:

```
int main()
{
     int numOfDays, rent ;
      char dayOfweek ;
      cout << " Enter day of the Week (type X to exit) : ";</pre>
      cin >> dayOfweek;
      while(dayOfweek != 'X')
            cout << "Enter Number of days for which the car is rented:";</pre>
            cin>> numOfDays;
            rent=0;
            calculateCarRent(dayOfweek, numOfDays,rent);
            cout<<"Rent was "<<rent<<endl;</pre>
            cout << " Enter day of the Week (type X to exit) : ";</pre>
            cin >> dayOfweek;
      return 0;
}
```