

3 Exercises

1. Define a function that swap two values of integer. Write a test program to call the function and display the result.

You are required to compile the function into a static library “libswap.a”, and then compile and run your program with this static library.

```
Please input two integers:4 7  
Before swap:4,7  
After swap:7,4
```

2. Define a function whose prototype is **const char* match(const char* s, char ch);** **s** is a C-style string, **ch** is a character. If the **ch** is in the **s**, return the position of **s** at **ch**; if the **ch** is not in the **s**, return NULL.

Write a test program to call the function and show the result. The output samples are as follows:

You are required to compile the function into a shared library "libmatch.so", and then compile and run your program with this shared library.

```
Please input a string:
Enjoy the holiday.
Please input a character:
h
he holiday.
```

```
Please input a string:
Class is over.
Please input a character:
m
Not Found
```

3. Write a three-file program based on the following namespace:

```
namespace SALES
{
    const int QUATERS = 4;
    struct Sales
    {
        double sales[QUATERS];
        double average;
        double max;
        double min;
    };

    // copies n items from the array ar to the sales member of s and
    // computes and stores the average, maximum and minimum values
    // of the entered items.
    void setSales(Sales& s, const double ar[], int n = 4);

    // display all information in the sales s
    void showSales(const Sales& s, int n = 4);
}
```

The **first file** should be a header file that contains the namespace. The **second file** should be a source code file that extends the namespace to provide definitions for the two prototyped functions. The **third file** should define a **Sales object**. It should use `setSales()` to provide values for the structure. And then it should display the contents of the structure by using `showSales()`.

A sample runs might look like this:

```
Input n:3
Please input 3 double values:123.5 9087.6 3452.1
Sales:123.5 9087.6 3452.1
Average:4221.07
Max:9087.6
Min:123.5
```

```
Input n:5
n is not correct.
Aborted
```