HOMEWORK 4

4-1 C++ can also represent uppercase letters, lowercase letters and a considerable variety of special symbols. C++ uses small integers internally to represent each different character. The set of characters a computer uses and the corresponding integer representations for those characters are called that computer’s character set. You can print a character by enclosing that character in single quotes, as with the following:

```cpp
cout<<'A';//print an uppercase A
```

You can print the integer equivalent of a character using static_cast as follows:

```cpp
cout << static_cast< int >( 'A' ); // print 'A' as an integer
```

This is called a cast operation. When the preceding statement executes, it prints the value 65 (on systems that use the ASCII character set). Write a program that prints the integer equivalent of a character typed at the keyboard. Store the input in a variable of type char. Test your program several times using uppercase letters, lowercase letters, digits and special characters (like $).

4-2 Write a program that inputs a five-digit integer, separates the integer into its individual digits and prints the digits separated from one another by three spaces each. [Hint: Use the integer division and modulus operators.] For example, if the user types in 42339, the program should print:

```
4 2 3 3 9
```
4-3 Create a class called Employee that includes three pieces of information as data members—a first name (type string), a last name (type string) and a monthly salary (type int). Your class should have a constructor that initializes the three data members. Provide a set and a get function for each data member. If the monthly salary is not positive, set it to 0. Write a test program that demonstrates class Employee’s capabilities. Create two Employee objects and display each object’s yearly salary. Then give each Employee a 10 percent raise and display each Employee’s yearly salary again.

4-4 Write a program that prints the powers of the integer 2, namely 2, 4, 8, 16, 32, 64, etc. Your while loop should not terminate (i.e., you should create an infinite loop). To do this, simply use the keyword true as the expression for the while statement. What happens when you run this program?

4-5 A mail order house sells five different products whose retail prices are: product 1—$2.98, product 2—$4.50, product 3—$9.98, product 4—$4.49 and product 5—$6.87. Write a program that reads a series of pairs of numbers as follows:

   a) product number
   b) quantity sold

Your program should use a switch statement to determine the retail price for each product. Your program should calculate and display the total retail value of all products sold. Use a sentinel-controlled loop to determine when the program should stop looping and display the final results.
제출물 – 소스코드와 보고서를 압축한 것

메일 제목: [HW5]학번_이름
압축파일명: 학번_이름.zip(tar)
sbkum@dcslab.snu.ac.kr 로 6월 3일 자정까지 제출
★ 메일 제목과 제출파일명은 반드시 위의 형식을 지켜주시기 바랍니다.
★ 형식을 지키지 않을 경우 감점

1. 소스 코드
2. 보고서
   - 보고서 형식은 자유형식입니다.
   - 코드에 대한 상세한 설명이 명시되어 있어야 합니다.
   - 실행화면을 캡처해서 첨부하셔야 합니다.
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