C-Exercises: Functions & Pointers

6. In the Exercise 1, you first added up the prices of the five products and then added the tax. Write a function which uses as input parameter the price without tax and returns the final price with tax (6.123 %).

7. Write a function which calculates \( n! \). \((n! = 1 \cdot 2 \cdot 3 \ldots \cdot n)\). Test it with a program that reads in \( n \) and prints out \( n! \) (use \( n < 14 \)). What happens if you use \( n = 20 \) or \( n = 40 \)?

8. Write a function that converts seconds into hours + minutes + seconds. Test this function with a program that reads in seconds and prints out the number of days, hours, minutes and seconds. For example 63893 s = 17 h 44 m 53 s.

**Hint:** The integer division and modulo function “\%” are for this problem useful.

9. **Traffic Flow**
Write a program that reads in the following road data:
~ kvollmay/classes.dir/capstone_s2001.dir/unix_C_intro.dir/road2.data
(where -1 means no car and 1 means a car), uses a function to move each car one site to the right (the last site is connected to the first site as in exercise 5.) and prints out the new road.

**Solutions to Exercises 3.-5.:**
~ kvollmay/classes.dir/capstone_s2001.dir/unix_C_intro.dir/C_3.c
~ kvollmay/classes.dir/capstone_s2001.dir/unix_C_intro.dir/C_4.c
~ kvollmay/classes.dir/capstone_s2001.dir/unix_C_intro.dir/C_5.c