# Lab Exercise 1

## Question 1:

Write a C++ program that prompts the user to input the elapsed time for an event in seconds. The program then outputs the elapsed time in hours, minutes, and seconds. (For example, if the elapsed time is 9630 seconds, then the output is `2:40:30`.)

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## Question 2:

A milk carton can hold 3.78 liters of milk. Each morning, a dairy farm ships cartons of milk to a local grocery store. The cost of producing one liter of milk is $0.38, and the profit of each carton of milk is $0.27. Write a program that does the following:

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a. Prompts the user to enter the total amount of milk produced in the morning.
b. Outputs the number of milk cartons needed to hold milk. (Round your answer to the nearest integer.)
c. Outputs the cost of producing milk.
d. Outputs the profit for producing milk.

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## Question 3:

You found an exciting summer job for five weeks. It pays, say, $15.50 per hour. Suppose that the total tax you pay on your summer job income is 14%. After paying the taxes, you spend 10% of your net income to buy new clothes and other accessories for the next school year and 1% to buy school supplies. After buying clothes and school supplies, you use 25% of the remaining money to buy savings bonds. For each dollar you spend to buy savings bonds, your parents spend $0.50 to buy additional savings bonds for you. Write a program that prompts the user to enter the pay rate for an hour and the number of hours you worked each week. The program then outputs the following:

a. Your income before and after taxes from your summer job.
b. The money you spend on clothes and other accessories.
c. The money you spend on school supplies.
d. The money you spend to buy savings bonds.
e. The money your parents spend to buy additional savings bonds for you.

## Question 4:

A bank in your town updates its customers' accounts at the end of each month. The bank offers two types of accounts: savings and checking. Every customer must maintain a minimum balance. If a customer's balance falls below the minimum balance, there is a service charge of $10.00 for savings accounts and $25.00 for checking accounts. If the balance at the end of the month is at least the minimum balance, the account receives interest as follows:

a. Savings accounts receive 4% interest.
b. Checking accounts with balances of up to $5,000 more than the minimum balance receive 3% interest; otherwise, the interest is 5%.

Write a program that reads a customer's account number (`int` type), account type (`char`; `s` for savings, `c` for checking), minimum balance that the account should maintain, and current balance. The program should then output the account number, account type, current balance, and an appropriate message. Test your program by running it five times, using the following data:

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46728 S 1000 2700
87324 C 1500 7689
79873 S 1000 800
89832 C 2000 3000
98322 C 1000 750
```

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**Question 5:**

To make telephone numbers easier to remember, some companies use letters to show their telephone number. For example, using letters, the telephone number `438-5626` can be shown as `GET LOAN`. In some cases, to make a telephone number meaningful, companies might use more than seven letters. For example, `225-5466` can be displayed as `CALL HOME`, which uses eight letters. Write a program that prompts the user to enter a telephone number expressed in letters and outputs the corresponding telephone number in digits. If the user enters more than seven letters, then process only the first seven letters. Also output the – (hyphen) after the third digit. Allow the user to use both uppercase and lowercase letters as well as spaces between words. Moreover, your program should process as many telephone numbers as the user wants.

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**Question 6:**

Write a program that reads a set of integers and then finds and prints the sum of the even and odd integers.

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