

Question 1

Fiona is starting a business selling Lego Robot components. She wants you to make her an inventory database and sales management system. She intends to store product information in a file, "inventory.txt", so that she can turn off her computers at night to save electricity. The first three lines of the file are shown below:

```
3987.45
NXT_BRICK 300.45 200.5, 75
COLOUR_SENSOR 57.86 30.8 40
```

On the first line is the amount of cash that Fiona has on hand at the start of the day. After the first line comes the product information. Each product is described on a single line. The first entry is the name of the product. The second entry is the price that she sells the product for, the third entry is the price that she buys the product for, and the final entry is the number of each product that she has in stock. Since she is just starting out, she has decided that she will only sell at most 10 products.

Write a C++ program that performs the following tasks:

1. Opens the file and verifies that it has opened.
2. Reads the file's content into appropriate variables (I suggest using arrays...)
3. Closes the file.
4. In a loop, prompts the user to enter a product by name. If the product is available, they will be sold the product. Update Fiona's cash on hand and inventory. If the product is not available, inform the user.
5. The loop should be exited when the user enters the string "STORE_CLOSED".
6. Fiona wants to ensure that she has at least 10 items of each type on hand at any given time. If any product has fewer than 10 items in inventory at the end of the day and she has enough cash to order more, you should buy enough to ensure that there are 10 items in the inventory. You may decide what to do if she doesn't have enough cash to order all of the items but she can order some of them.
7. Once the loop has been exited, the file should be **re-opened** as an output file, and all of the data should be written back to it.