University of Connecticut
ECE1101
Spring 2021

Homework 4
Due April 19, 2021

In this homework, you will do some simple operations using `structs`. Download the `hw5.c`, `orders.c`, `orders.h`, and `orders.db` files from HuskyCT and put them in your working directory.

This is the skeletal code in `hw5.c` that you will need to complete

```
#include <stdio.h>
#include <stdlib.h>
#include "orders.h"

struct product products[] = {
      { 1234, "Bread", 2.99 },
      { 5678, "Milk", 4.19 },
      { 9012, "Eggs", 3.49 },
      { 3456, "Butter", 3.99 },
      { 7890, "Juice", 2.49 },
      { 2345, "Muffin", 1.49 }
};

int main()
{
    short num_orders;
    struct order *orders = read_orders("orders.db", &num_orders);
    if (orders == NULL) {
        printf("Order database does not exist\n");
    }
    ...
}
```

The `orders.db` file contains a database of orders with customer names and a list of items. I have provided the `read_orders` function for you to read the contents of the file and put it in an array of `struct order` called `orders`. You can look in `orders.h` to see the definition of `struct order`. Also, within `struct order` is another array of structs – this one is an array of `struct item`. The definition of `struct item` is also in `orders.h`. Each `struct item` contains a product sku and a quantity. The product sku refers to a product in the `products` array which is an array of `struct product` where each product has a sku, name, and price.

Your task for this homework is to complete the main function such that it iterates over the orders array, and for each order, print the order ID, customer name, and print out all the items for that order, and then calculate and print out the total cost of the order. The output for each order should look something like the following:

```
Order ID: 1000
```

```
Name: John Doe
Butter     1     3.99
Muffin     2     2.98
Total = 6.97
```

For each item, you will need to print out the product name, the quantity, and the cost (i.e. quantity multiplied by product unit cost). You will need to use the sku to find the product struct which will give you the product name and cost. To do so, iterate through the products array until you find the product with the matching sku.

In order to compile the program, you need to make sure that both the .c files and the .h file are in the same directory. Then, you can compile the program by simply doing the following:

```
% gcc -o hw4 hw4.c orders.c
```

To run the program, run as you have been doing for previous programs. Just make sure that the `orders.db` file is in the same directory.