Chapter 4 – Extra Practice

Extra Practice

Extra practice is for those who would like to do some extra practice projects to further hone their skills learned in each assignment. There are no additional points to be gained by completing these projects.

Hike Calculator

Create a program that converts the number of miles that you walked on a hike to the number of feet that you walked.

```
Hike Calculator

How many miles did you walk?: 4.5
You walked 23760 feet.
```

Specifications

- The program should accept a float value for the number of miles.
- Store the code that gets user input and displays output in the main function.
- There are 5280 feet in a mile.
- Store the code that converts miles to feet in a separate function. This function should return an int value for the number of feet.
- Assume that the user will enter a valid number of miles.

Feet and Meters Converter

Create a program that converts feet to meters and vice versa.

```
Feet and Meters Converter

Conversions Menu:
a. Feet to Meters
b. Meters to Feet
Select a conversion (a/b): a

Enter feet: 100
30.48 meters

Would you like to perform another conversion? (y/n): y

Conversions Menu:
a. Feet to Meters
b. Meters to Feet
Select a conversion (a/b): b

Enter meters: 100
328.08 feet

Would you like to perform another conversion? (y/n): n

Thanks, bye!
```

Specifications

- The formula for converting feet to meters is:

  feet = meters / 0.3048

- The formula for converting meters to feet is:

  meters = feet * 0.3048

- Store the code that performs the conversions in functions within a module. For example, store the code that converts feet to meters in a function in a module.
- Store the code that displays the title in its own function, and store the code that displays the menu in its own function, but store the rest of the code that gets input and displays output in a main function.
- Assume the user will enter valid data.
- The program should round results to a maximum of two decimal places.

Sales Tax Calculator

Create a program that uses a separate module to calculate sales tax and total after tax.

```
Sales Tax Calculator

ENTER ITEMS (ENTER 0 TO END)
Cost of item: 35.99
Cost of item: 27.50
Cost of item: 19.59
Cost of item: 0
Total:           83.08
Sales tax:       4.98
Total after tax: 88.06

Again? (y/n): y

ENTER ITEMS (ENTER 0 TO END)
Cost of item: 152.50
Cost of item: 59.80
Cost of item: 0
Total:           212.3
Sales tax:       12.74
Total after tax: 225.04

Again? (y/n): n

Thanks, bye!
```

Specifications

- The sales tax rate should be 6% of the total.
- Store the sales tax rate in a module. This module should also contain functions that calculate the sales tax and the total after tax. These functions should round the results to a maximum of two decimal places.
- Store the code that gets input and displays output in another module. Divide this code into functions wherever you think it would make that code easier to read and maintain.
- Assume the user will enter valid data.