# Project 3-1: Letter Grade Converter

Create a program that converts number grades to letter grades.

## Console

```
Letter Grade Converter

Enter numerical grade: 90
Letter grade: A

Continue? (y/n): y

Enter numerical grade: 88
Letter grade: A

Continue? (y/n): y

Enter numerical grade: 80
Letter grade: B

Continue? (y/n): y

Enter numerical grade: 67
Letter grade: C

Continue? (y/n): y

Enter numerical grade: 59
Letter grade: F

Continue? (y/n): n

Bye!
```

## Specifications

- The grading criteria is as follows:

```
A    88-100
B    80-87
C    67-79
D    60-66
F    <60
```

- Assume that the user will enter valid integers for the grades.

- The program should continue only if the user enters "y" or "Y" to continue.

## Project 3-2: Tip Calculator

Create a program that calculates three options for an appropriate tip to leave after a meal at a restaurant.

### Console

```
Tip Calculator

Cost of meal: 52.31

15%
Tip amount:    7.85
Total amount: 60.16

20%
Tip amount:    10.46
Total amount: 62.77

25%
Tip amount:    13.08
Total amount: 65.39
```

### Specifications

- The program should calculate and display the cost of tipping at 15%, 20%, or 25%.

- Assume the user will enter valid data.

- The program should round results to a maximum of two decimal places.

# Project 3-3: Change Calculator

Create a program that calculates the coins needed to make change for the specified number of cents.

## Console

```
Change Calculator

Enter number of cents (0-99): 99

Quarters: 3
Dimes:    2
Nickels:  0
Pennies:  4

Continue? (y/n): y

Enter number of cents (0-99): 55

Quarters: 2
Dimes:    0
Nickels:  1
Pennies:  0

Continue? (y/n): n

Bye!
```

## Specifications

- The program should display the minimum number of quarters, dimes, nickels, and pennies that one needs to make up the specified number of cents.

- Assume that the user will enter a valid integer for the number of cents.

- The program should continue only if the user enters "y" or "Y" to continue.

# Project 3-4: Shipping Calculator

Create a program that calculates the total cost of an order including shipping.

## Console

```
================================================================
Shipping Calculator
================================================================
Cost of items ordered:   49.99
Shipping cost:           7.95
Total cost:              57.94

Continue? (y/n): y
================================================================
Cost of items ordered:   -65.50
You must enter a positive number. Please try again.
Cost of items ordered:   65.50
Shipping cost:           9.95
Total cost:              75.45

Continue? (y/n): n
================================================================
Bye!
```

## Specifications

- Use the following table to calculate shipping cost:

```
COST OF ITEMS       SHIPPING COST
=============================
< 30.00             5.95
30.00-49.99         7.95
50.00-74.99         9.95
>= 75.00            FREE
```

- If the user enters a number that's less than zero, display an error message and give the user a chance to enter the number again.

## Project 3-5: Table of Powers

Create a program that displays a table of squares and cubes for the specified range of numbers.

### Console

```
Table of Powers

Start number: 90
Stop number:  100

Number     Squared      Cubed
======     =======      =====
90         8100         729000
91         8281         753571
92         8464         778688
93         8649         804357
94         8836         830584
95         9025         857375
96         9216         884736
97         9409         912673
98         9604         941192
99         9801         970299
100        10000        1000000
```

### Specifications

- The formulas for calculating squares and cubes are:

```
square = x ** 2
cube = x ** 3
```

- Use tabs to align the columns.

- Assume that the user will enter valid integers.

- Make sure the user enters a start integer that's less than the stop integer. If the user enters a start integer that's greater than the stop integer, display an error message and give the user a chance to enter the integers again.