

Lab 2

Due: In Class: 9/10
Out of Class 9/17

1. Even-Odd Average.

In Class

Write a program that reads a list of values from the user until the user enters the sentinel value of -1. As each value is read, the program should determine if the value entered is even or odd. If the value is even, the value should be added to an even total, and a count of event values should be incremented. The same should happen for odd values. The program should then calculate and display the average of the even input values and the average of the odd input values. Make sure your program does not include the sentinel value.

2. Problem 3-8 from the text: Payment Plan.

Out of Class

You have been hired to work for 20 days and you are given two payment options. The first option is to get paid \$100 the first day and have your daily total increase by \$100 each day. The second option is to get paid \$2 the first day and have your daily total increased by $\frac{1}{2}$ each day. (in other words, the second day you would be paid \$3, and the third day \$4.50. Write a program that determines your Day 20 payment for both options. Print out the daily pay for option 1 and then the daily pay for option 2.

3. Problem 3-10 form the text. Account Balancer.

In Class

Write a Visual Logic program to help balance a customer's bank account. The program should read numeric values that represent banking transactions. You will continue processing until the sentinel value of 9999 is entered. This value indicates that it is the end of the month and stop processing activities for that month. There is a second special sentinel value of 8888. When that value is entered the program should display the current balance (8888) and continue processing till the end of month. In addition, the program solution should conform to the following requirements.

- The first value read is the starting balance.
- The program will the read values one at a time until the end-of-the-month sentinel value (9999) is read.
- Negative numbers are “checks” that reduce the account balance.
- Positive numbers are “deposits” that add to the account balance. Remember that you do not process the sentinel values of 9999 or 8888. In other words, these values should not be added to or deducted from your balance.
- Any time a check is processed and the resulting balance is negative, the check bounces and there is a \$10 fee assessed to the account (e.g., the balance is reduced by an additional 10 dollars).
- When the user inputs the special(sentinel) value 8888, the program should NOT treat this as a deposit, but instead should display the current account balance with a message formatted similar to:

The current balance is #####

Processing should continue.

- When the user inputs the special (sentinel) value 9999, the program should NOT treat this as a deposit, but instead should calculate the monthly service fee, which is either \$10 or 10 percent of the account balance, whichever is smaller. After calculating the monthly service fee, it should be subtracted from the account balance. (If the service fee is negative you should use the absolute value of it. Remember subtracting a negative is the same as adding.) Then the program should display the monthly service fee and the end-of-the-month balance with two messages formatted similar to the following two lines.

The monthly service fee is #####.

The account balance at the end of the month is #####.

- the program ends after displaying the end-of-the-month account balance.

4. Problem 4-4 from the text: Number Stack Different.

Out of Class

Write a program that uses a nested loop to generate the output shown below.

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6
1 2 3 4 5 6 7
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9
```

5. Problem 4-8 from the text. Diamond.

Out of Class

Write a program that generates the diamond shape shown on Page 72 of the visual logic book. Note that every line has odd number of circles. (Please refer to the figure on Page 72).