HW3

1. Binary Search Variant (10 pts)

Problem Description:

(1) Create a binary search method to search a target value, and return the index of the LAST occurrence of the target element in a DESCENDING ordered array. Return -1 if you cannot find the target value in the array. (8 pts)
(2) Use a descending ordered array to test your method. (2 pts)

Coding: (Copy and Paste Source Code here.)

Testing: (Paste the screenshot of your result here. And describe how you test this program)

2. Comparing Loans (String Format: 10 pts)

Problem Description:

Write a program that lets the user enter the loan amount and loan period in number of years and displays the monthly and total payments for each interest rate starting from 5% to 8%, with an increment of 1/8. Here is a sample run:

<Output>

```
Enter loan amount, for example 120000.95: 10000
Enter number of years as an integer,
for example 5: 5
Interest Rate       Monthly Payment     Total Payment
5.000%              188.71              11322.74
5.125%              189.29              11357.13
5.250%              189.86              11391.59
5.375%              190.44              11426.11
5.500%              191.01              11460.70
5.625%              191.59              11495.35
5.750%              192.17              11530.06
5.875%              192.75              11564.84
6.000%              193.33              11599.68
6.125%              193.91              11634.59
6.250%              194.49              11669.56
6.375%              195.08              11704.59
6.500%              195.66              11739.69
6.625%              196.25              11774.85
6.750%              196.83              11810.08
6.875%              197.42              11845.37
7.000%              198.01              11880.72
7.125%              198.60              11916.14
7.250%              199.19              11951.62
7.375%              199.79              11987.16
7.500%              200.38              12022.77
7.625%              200.97              12058.44
7.750%              201.57              12094.18
7.875%              202.17              12129.97
8.000%              202.76              12165.84
```

<End output>

Coding: (Copy and Paste Source Code here.)

Testing: (Paste the screenshot of your result here. And describe how you test this program)