**CSC121**

**Assignment#7**

**Due 12/14/2021 by 11:59 pm**

**60 Points**

*Please submit* ***one******zip*** *file containing all source code, header, and output files.*

**Exercise 1:** 30 Points (Duplicate Elimination with vector)

Use a vector to solve the following problem. Read in 20 numbers, each of which is [between](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) 10 and 100, inclusive. As each number is read, validate it and [store](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) it in the vector only if it isn't a duplicate of a number [already](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) read. After reading all the [values](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?), display only the unique [values](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) that the user entered. Begin with an empty vector and use its push\_back function to add each unique [value](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) to the vector.

**SAMPLE RUN:**

Enter an integer: 105

Enter an integer: 5

Enter an integer: 10

Enter an integer: 11

Enter an integer: 11

Enter an integer: 12

Enter an integer: 13

Enter an integer: 14

Enter an integer: 15

Enter an integer: 15

Enter an integer: 16

Enter an integer: 17

Enter an integer: 18

Enter an integer: 19

Enter an integer: 20

Enter an integer: 21

Enter an integer: 22

Enter an integer: 23

Enter an integer: 24

Enter an integer: 25

Enter an integer: 26

Enter an integer: 27

Enter an integer: 28

Enter an integer: 29

Unique values in the vector are:

10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29↵

**Exercise 2:** 30 Points (Salesperson Salary Ranges)

Use a one-dimensional [array](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) to solve the following problem: A company pays its salespeople on a commission basis. The salespeople each receive $200 per week plus 9 percent of their gross sales for that week. For example, a salesperson who grosses $5000 in sales in a week receives $200 plus 9 percent of $5000, or a total of $650. Write a [program](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) (using an [array](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) of counters), for a company with 20 employees, that determines how many of the salespeople earned salaries in each of the following ranges ([assume](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) that each salesperson's salary is truncated to an [integer](https://pearson.turingscraft.com/codelab/jsp/core_dhtml.jsp?) amount): a) $200-299 b) $300-399 c) $400-499 d) $500-599 e) $600-699 f) $700-799 g) $800-899 h) $900-999 i) $1000 and over.

**SAMPLE RUN:**

Enter gross sales for salesperson #1: 1000.82

Enter gross sales for salesperson #2: 2342

Enter gross sales for salesperson #3: 2238.32

Enter gross sales for salesperson #4: 1230

Enter gross sales for salesperson #5: 8453

Enter gross sales for salesperson #6: 7238

Enter gross sales for salesperson #7: 8991

Enter gross sales for salesperson #8: 131

Enter gross sales for salesperson #9: 2831.47

Enter gross sales for salesperson #10: 7932

Enter gross sales for salesperson #11: 2238

Enter gross sales for salesperson #12: 8927

Enter gross sales for salesperson #13: 8278

Enter gross sales for salesperson #14: 7839.12

Enter gross sales for salesperson #15: 7789

Enter gross sales for salesperson #16: 2072

Enter gross sales for salesperson #17: 5890

Enter gross sales for salesperson #18: 8084

Enter gross sales for salesperson #19: 7673.54

Enter gross sales for salesperson #20: 3149

Count of employees in each salary range:

The number of salespeople earning in range $200 - 299: 2

The number of salespeople earning in range $300 - 399: 2

The number of salespeople earning in range $400 - 499: 5

The number of salespeople earning in range $500 - 599: 0

The number of salespeople earning in range $600 - 699: 0

The number of salespeople earning in range $700 - 799: 1

The number of salespeople earning in range $800 - 899: 2

The number of salespeople earning in range $900 - 999: 6

The number of salespeople earning in range $1000 and over: 2