Test Plan

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CMSC115

Chapter 4, Project 5

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**Program Goals & Objectives**

The primary objective of this program is to validate a user's input of a Social Security Number (SSN). The program checks whether the entered SSN is in the correct format and contains valid digits and hyphens in the appropriate positions.

**Program Functional Requirements**

1. The program should prompt the user to enter a string representing a Social Security Number (SSN).
   * The user should enter the SSN in the format DDD-DD-DDDD, where D represents a digit (0-9).
2. The program should validate that the entered SSN meets the following criteria:
   * The length of the SSN is exactly **11 characters**.
   * The **3rd** character is a hyphen '-'.
   * The **6th** character is a hyphen '-'.
   * All other characters are digits.
3. The program should determine whether the entered SSN is valid based on the above criteria.
4. The program should display a message indicating whether the SSN is valid or invalid:
   * If valid, display: "[SSN] is a valid social security number".
   * If invalid, display: "[SSN] is an invalid social security number".

**Note:** This program assumes that a valid SSN must strictly adhere to the format DDD-DD-DDDD, including the positions of the hyphens and digits.

**Program Pseudocode**

START

Create a Scanner object for input

Display "Enter a string for SSN: "

Input ssn as string

Set isValid to TRUE if all following conditions are met:

Length of ssn is 11 characters

AND Character at position 3 is '-'

AND Character at position 6 is '-'

AND Character at position 0 is a digit

AND Character at position 1 is a digit

AND Character at position 2 is a digit

AND Character at position 4 is a digit

AND Character at position 5 is a digit

AND Character at position 7 is a digit

AND Character at position 8 is a digit

AND Character at position 9 is a digit

AND Character at position 10 is a digit

IF isValid is TRUE THEN

Display ssn + " is a valid social security number"

ELSE

Display ssn + " is an invalid social security number"

END IF

Close Scanner

END

**Program Flowchart**

**A screenshot of a diagram

Description automatically generated**

**Table 1 – Traceability Matrix**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input/Output | Expected Result | Actual Result | Outcome  (Pass/Fail) |
| 1a | Enter a string for SSN: 345-12-1232 | 345-12-1232 is a valid social security number | 345-12-1232 is a valid social security number | Pass |
| 2a | Enter a string for SSN: 345-123-4567 | Expected Result: 345-123-4567 is an invalid social security number | Enter a string for SSN: 345-123-4567  345-123-4567 is an invalid social security number | Pass |
| 3a | Enter a string for SSN: 234567890 | 234567890 is an invalid social security number | 234567890 is an invalid social security number | Pass |