Lab 05 – Loops & Strings

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CPSC 1150

19/06/2023

# Q1 – Binary to decimal

## Program B2D

**File name:** lab05\B2D.java

**Purpose:** Convert binary number entered by user to decimal and display it on the console.

**Packages:** java.util.Scanner

**Limitations:** It can’t handle any other characters other than ‘0’ and ‘1’.

**Input:** A binary number stored in a String. The binary number is expected to be a positive number. The variable containing the input is *binNum*.

**Output:** An integer number equal to the input in decimal form. The value is stored in the variable *decNum*.

**Flowchart:**

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**Test runs:**

|  |  |
| --- | --- |
| **binNum (Input)** | **decNum (Output)** |
| 1101 | 13 |
| 111 | 7 |
| 1010 | 1010 |

A picture containing text, screenshot, font

Description automatically generated A picture containing text, font, screenshot

Description automatically generated

# Q2 – Display special numbers in tabular format

## Program Specials

**File name:** lab05\Specials.java

**Purpose:** To find and display in tabular format the special numbers between 10 and 1000 (exclusive).

**Packages:** (list of imported packages)

**Limitations:** (input it can’t handle, list of possible error messages, round-off error)

**Bugs:** (list of unfixed bugs)

**Input:** Not needed.

**Output:** Several lines in tabular format containing the special numbers in the specified range.

**Pseudocode:**

Algorithm (program name)

START

1. i = 11, j = 0
2. Repeat while i < 1000 is true
   1. If (i / 100 + i % 10) = ((i / 10) % 10) then
      1. Print i
      2. j++
   2. If j = 7 then
      1. Print new line
      2. j = 0
   3. i++

END (program name)

**Test run:**