CIT 103: Workshop Lab Assignment #2

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Introduction

Numbers are interesting. From the science of cosmos to the world of mathematics, numbers take part in important findings and derivations. Be it in the art of solving puzzles or in the mystique of game development, the mathematical science never stop to surprise us. In this lab, we try to learn about certain numbers who get the names based on few interesting properties:

1. Armstrong Numbers
2. Strong Number

Our language world also gives us many interesting arrangements. The English language for instance is filled with puzzles that satisfy the need of learner and still give a pattern that appears quite alluring. In this lab, we learn on:

1. Pallindrome
2. Anagrams

Lab Objective

To model the mathematical models for finding interesting relations in alphabets and numbers.

Question 1

Write flowchart, algorithm and trace tables to find if a number is Armstrong.

Info: 153 is Armstrong, $1^3 + 5^3 + 3^3 = 153$

Test data: 1634, 123, 153, 407, 371, 9474, 1, 0, 165

Question 2

Write flowchart, algorithm and trace tables to find if a number is Strong.

Info: 145 is Strong, $1! + 4! + 5! = 145$

Test Data: 1, 2, 145, 123, 407

Question 3

Write flowchart, algorithm and trace tables to find if a word is Pallindrome.

Info: MADAM is Pallindrome. It reads madam if read from left-to-right or from right-to-left.

Construct your own test data.

Question 4

Write flowchart, algorithm and trace tables to find if two words are Anagrams of each other.

Info: Listen and Silent are Anagrams of each other. They consist of exactly same alphabets, with variation in order of occurence.

Construct your own test data.