Assignment I

1   Analyzing the Problem

1.1   Inputs
Receives a String Input

1.2   Processing Solution

Analyzes String Files with the following Rules:

Rule 1: For words that begin with consonant, take the consonant off the front of the word and add it to the end of the word

Rule 2: For words that begin with double or multiple consonants take the group of consonants off the front of the word and add them to the end, adding ay at the very end of the word.

Rule 3: For words that begin with a vowel, just add yay at the end.

Rule 4: Hyphenated words are treated separately with "-"

Rule 5: Contracted words are treated as one word.

Rule 6: Words and symbols not covered by rules are not to be changed.

1.3   Outputs
Returns a pig Latin String

2   Assumptions

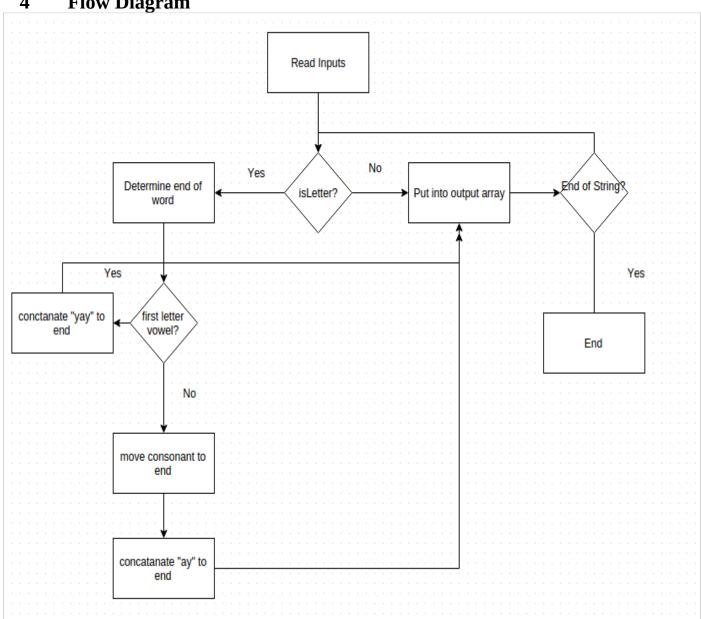### 2.1   Inputs

1) Inputs will be String inputs in English. Inputs can include apostrophes, hyphens in the middle of the word.

2) Punctuations are considered to be `"\"(...):;.!?,-"`

3) Words that contain not punctuations will be ignored. i.e. "H1N1 => H1N1"

4) When the apostrophe comes first, and is followed by the vowel, leave the apostrophe in the f front. i.e. "y'all => 'allyay"

3   Input Output Diagram

```
┌─────────────────┐        ┌──────────────────────┐        ┌──────────────────┐
│ Read Inputs from│───────▶│ Translate to Piglatin│───────▶│ Output to Screen │
│  command Line   │        │                      │        │                  │
└─────────────────┘        └──────────────────────┘        └──────────────────┘
```

4   Flow Diagram

```
                              ┌──────────────┐
                              │ Read Inputs  │
                              └──────┬───────┘
                                     │
                     Yes            ◇        No
   ┌──────────────┐◀──────── isLetter? ────────▶┌──────────────────┐      End of String?
   │Determine end │                             │Put into output   │─────▶     ◇
   │  of word     │                             │     array        │
   └──────┬───────┘                             └────────▲─────────┘
          │                                              │                    Yes
    Yes   │        ◇                                     │
 ┌────────┴──┐ first letter                             │              ┌──────────┐
 │conctanate │  vowel?                                   │              │   End    │
 │"yay" to   │◀──                                        │              └──────────┘
 │  end      │    │                                      │
 └───────────┘    │ No                                   │
                  ▼                                       │
          ┌──────────────┐                               │
          │move consonant│                               │
          │   to end     │                               │
          └──────┬───────┘                               │
                 │                                        │
                 ▼                                        │
          ┌──────────────┐                               │
          │concatanate   │───────────────────────────────┘
          │"ay" to end   │
          └──────────────┘
```

Functional Block Diagram:

```
                    ┌─────────────────┐
                    │      Main       │
                    │ --------------- │
                    │  Takes in args  │
                    └─────────────────┘
                             │
                             ▼
                    ┌─────────────────┐
                    │ Process Line in New │◄──────────┐
                    │       File      │              │
                    │ --------------- │         No   │
                    │  Read File Name │              │
                    └─────────────────┘              │
                             │              ┌─────────◆ End of String? ────► ┌──────────┐
                             │              │                                │   Yes    │
                             ▼              │           Yes                  └──────────┘
                    ┌─────────────────┐     │
          ┌────────►│   Translator    │─────┘
          │         │ --------------- │
          │         │Loops Through String│
          │         └─────────────────┘
          │                  │
   Yes    │                  ▼
          │           ╱─────────────╲
          │          ╱Contains Symbol?╲
          └─────────◆   ----------    ◆
                     ╲Determines if word╱
                      ╲contains symbol ╱
                       ╲─────────────╱
                             │
                             │   No
                             ▼
                    ┌─────────────────┐
                    │    pigLatin     │
                    │ --------------- │
                    │Converts word into│
                    │    pig latin    │
                    └─────────────────┘
```