

Programming Design Worksheet - Redfield

for CS1310 (programs 2-7) and CS1311 (programs 1-6)

Copy this file. Type and past images to create new documents for designs.
Print it for class (if you must miss, submit one file to Designs).

First name **Davide** Last name **Russillo**

Design for program name **Pig Latin**

DATA

Variables needed in WORDS for main and globally

sentence string for input

sentence copy string because strtok modifies the original

pointer to current word

variable for iteration

Formulas/equations + if any

C DECLARATIONS for main & global

char sentence;

char sentence_copy;

char *current;

int i;

(STARTING TicTacToe:put image; or draw: Insert, Drawing; or put at end of the file)

draw in RAM with possible values

sentence |I| |l|o|v|e| |c|o|m|p|u|t|e|r| |s|c|i|e|n|c|e|\0|

current_____

|

v

|l|o|v|e|\0| for example

Algorithm to PSEUDOCODE level for each function

(remember to indent under if, switch, while, do-while, for)

main:

print: This program takes in a sentence from the user and outputs its Pig Latin translation. In pig latin, if the word starts with a vowel, or if it doesn't have a vowel at all, it stays the same with only 'way' appended at the end. Otherwise, the word will start with every letter from the first vowel to the end of the word, with then the initial with every

letter from the first vowel to the end of the word, with then the initial consonants appended, followed by 'ay'. Accepts sentences of max 80 characters per line. Loops until user inputs STOP as sentence.

```
while sentence is not stop
    print Input sentence here:
    input sentence
    if sentence is stop
        print Shutting down...
    else
        print you entered 'sentence' newline translation: newline
        copy sentence into sentence_copy
        set current to first word
        while current is still a word
            translate current
            set current to next word
```

other functions (bold the names): (put them before main in the program!)

```
int check_if_vowel(char letter)
    if letter is a, e, i, o, or u
        return 1
    else
        return 0
```

```
int check_if_all_consonants(char *word)
    for each letter in word
        if check_if_vowel of word
            return 0
    return 1
```

```
void translate(char *word)
    let first_vowel_reached be 0
    char array temp of length wordlength - 1

    set first char in temp to null character
    if check_if_vowel of first char or check_if_all_consonants in word
        print word + way
    else
        for each letter in word
            if check_if_vowel of current letter
                set first_vowel_reached to 1
            if first_vowel_reached
                print current letter
            else
                append letter to temp
                append null character to temp
        print temp + ay
```

OTHER part of the design (see assignment - *input or sample output*)

This program takes in a sentence from the user and outputs its Pig Latin translation. In pig latin, if the word starts with a vowel, or if it doesn't have a vowel at all, it stays the same with only 'way' appended at the end. Otherwise, the word will start with every letter from the first vowel to the end of the word, with then the initial consonants appended, followed by 'ay'.

Accepts sentences of max 80 characters per line. Loops until user inputs STOP as sentence.

Input sentence here:

> I love computer science and programming

You entered:

I love computer science and programming

Translation:

Iway ovelay omputercay iencescay andway ogrammingpray

Input sentence here:

> stop

Shutting down...