

# CS4248 Assignment 1:

## Regexes and Language Models

By A0000000X (Please change this as appropriate)

*This is a sample writeup.pdf file, to illustrate the expected format. You may choose to use this source file but need not to. Just follow the instructions required in the Assignment 1 instructions.*

### 1. Declaration of Original Work.

By entering my Student ID below, I certify that I completed my assignment independently of all others (except where sanctioned during in-class sessions), obeying the class policy outlined in the introductory lecture. In particular, I am allowed to discuss the problems and solutions in this assignment but have waited at least 30 minutes by doing other activities unrelated to class before attempting to complete or modify my answers as per the Pokémon Go rule.

Signed, A0000000X

### 2. References.

I give credit where credit is due. I acknowledge that I used the following websites or contacts to complete this assignment

- Regex Golf: <https://alf.nu/RegexGolf> for practicing regular expressions.

## Part 1. Programming

### Objective 1 — Regular Expressions

- C. Descriptions of relations between R3, R4, and R1 in FSA.  
Answer here:

### Objective 2 — Tokenization, Zipf's Law

- A. Plot here.

Justification here.

- B. Plot here.

Justification here.

## Objective 4 — Language Modeling, Regular Expressions

Here are some of the input-output pairs with respect to the `generate_word`, `generate_text`, and `get_perplexity` calls using the text corpus `test_corpus.txt` (replace as needed).

...

If you implemented any additional LM variants, you're welcomed to give high level documentation here.

## Part 2

### 1. Language Models

- a. True or False.

Justify your answer here.

- b. True or False.

Justify your answer here.

- c. True or False.

Justify your answer here.