PLT Language Proposal

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Simple Statistical Programming Language (sstats)

Computational statistical analysis of big data analysis is one of the most prominent challenges in the last decade. Information science giants such as Google and Facebook crunch petabytes of data through massive networks to obtain solutions towards NLP, Go and many more problems. Statistical languages and libraries such as MATLAB, R, and Numpy lie at the core of these processes. sstats is a much more modest language focused on core statistical operations. In features it is most similar to MATLAB but has the added benefit of typed variables. It focuses on reading in data from files and representing it as either matrices or vectors. In particular, the easy generation of new vectors from existing data . For example:

vector C = vector A + vector B

An example library constructed using sstats would be to implement standard matrix operations such as matrix addition, element-wise operations, transpose and matrix multiplication.

The following features will be implemented:

-User defined functions

-Control flow

-if

-elif

-else

-for loop

-while loop

-Standard arithmetic and logical operations

-Primitive variables

char

int

float

boolean

null

-built in Matrix type variable with syntax similar to MATLAB's

mat A = [1 2 3] -> row vector of 1,2,3

mat A = [1; 2; 3] -> column vector of 1,2,3

mat A = [1 2 3; 1 2 3] -> 2x3 matrix

-built in String type variable

An example function:

```
function void fizzbuzz(int n) {
    for(int i=0; i<n; i++) {
        if (i % 15 == 0) {
            print("FizzBuzz");
        }
        elif (i % 5 == 0) {
            print("Fizz");
        }
        elif (i % 3 == 0) {
            print("Buzz");
        }
        else {
            print(i);
        }
```

```
        }

    }
```