Laboratory 2

The Hash table is based on a List of lists(or buckets) which contain the data in an efficient manner.

The functions:

The Couple class allows for easy access to the position of a term in the Hash Table

- findPosition(String term) : returns the position for a term

- createHash(String Key) : returns the hash key, it is computed as the sum of the characters modulo the size

- add(String term) : add an element to the Hash Table

- containsTerm(String Term) : checks if the term has already been added to the HashTable, returns true or false

- getSize() : get the size of the Hash Table

These methods are then used by the Symbol Table by calling them.

Laboratory 3

The ProgramInternalForm is based on a List of Couples(each couple contains an element and its position in the SymbolTable).
Example:
        SEPARATOR: '$' AT POSITION: {-1,-1}
        RESERVED WORD: 'integer' AT POSITION: {-1,-1}
        IDENTIFIER: 'a' AT POSITION: {97,0}

Regexes used:

- For Identifying the Constants:

        - Matching numbers(with all variances, +/-, 0 case): "^0|[-|+]?[1-9][0-9]*"

        - Matching characters(digit or letter enclosed by ''): "^'[a-zA-Z0-9]'"

        - Matching strings(a sequence of digits and letters enclosed by ""): "^\"[0-9a-zA-Z]*\""

- For Identifying the Identifiers: "^[a-zA-Z][a-zA-Z0-9]*"

        - Matching the a sequence that starts with a letter followed by letters or digits