Compilers project phase 1

Made by: Kareem Ahmed Talat 23P0225, Abdulrahman Wael 23P0155, Saif Amjad 23P0145, Islam Nashaat 23p0077, Marwan Wagih 23P0247, Ahmed Hossam 23P0109

Design of Compilers Project

Tiny Language

A program in TINY consists of a set of functions (any number of functions and ends with a main function), each function is a sequence of statements including (declaration, assignment, write, read, if, repeat, function, comment, …) each statement consists of (number, string, identifier, expression, condition, …).

Numbers

Let Digit be [0-9]

REGEX: Digit + (\. Digit +)?

A diagram of a trap

AI-generated content may be incorrect.

Accepted Examples: 9999, 932.2, 932.222

Rejected Examples: “ “

23.

23.22.2

A

23.a

Strings

REGEX : “(.)\*”

A diagram of a diagram

AI-generated content may be incorrect.

Identifiers

An identifier should start with a letter followed by any combination of letters and numbers. Letter = (a-z|A-Z) Digit = (0-9)

**Regular Expression: Identifier = Letter(Letter|Digit)\***

**A diagram of a letter

AI-generated content may be incorrect.**

**Examples: x value sum count123**

**Rejected Examples: 12, 12Ko, ‘23**

Punctuator operators

Examples: ( ) { } [ ] , ;

Regex: \( | \) | \{ | \} | \[ | \] | , | ;

A diagram of a work flow

AI-generated content may be incorrect.

Reserved Keywords

Regex of Reserved Keywords:

int | float | string | read | write | repeat | until | if | elseif | else | then | return | endl

DFA of Reserved Keywords

A diagram of a network

AI-generated content may be incorrect.

Operators

Operators have 3 regexes and 3 DFAs as shown

A diagram of a number of circles

AI-generated content may be incorrect.

Regex: [ \+ | - | \\* | / | = ]

A diagram of a diagram

AI-generated content may be incorrect.

Regex: [ & | \| ]

A diagram of a car

AI-generated content may be incorrect.

Regex: [ < | > | <> | =: ]

Comments

Regex: [ / \\* .\* \\* / ]

A diagram of a trap

AI-generated content may be incorrect.