LOGO

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ABSTRACT

1 Abstract

2 Introduction

3 History

Logo is an educational programming language, designed in 1967 by Wally Feurzeig, Seymour Papert, and Cynthia Solomon. Logo is not an acronym: the name was coined by Feurzeig while he was at Bolt, Beranek and Newman, and derives from the Greek logos, meaning word or thought. The goal was to create a mathematical land where children could play with words and sentences. In the whole world, there still are many people learning and using this language although sometimes some people may not notice it.

4 Control Structures

A. If statement

```
Example code
to if_else
make "x false
ifelse :x [ print [ this won't be printed. ] ] [ print [ this will be
printed.] ]
make "y true
if :y [ print [ this will be printed.] ]
end
```

In Logo, to declare a variable we need to use "make" and '"', like: make "x false. This means declare a variable x = false. ifelse means if condition is true then executes the first block, else execute the second block. Example: ifelse :x [print [this won't be printed.]] [print [this will be printed.]] First we declare x = false, so, in this part of code, program can only execute the second block: [print [this will be printed.]] What's more in Logo, when we want to use a variable we declare, we need to add a '"' before the variable name, like '"x'.

B. For loop

Example code:

```
to for_loop
for [i 1 100] [fd :i * 10 rt :i]
end
```

Logo for loop the control condition is for [i 1 100] which means for (i=1; i<=100; i++) in java. The part which we need to notice [i 1 100] includes 100.

C. While loop

Example code:

```
to my_while
make "number sum random 99 1
while [:number<90] [
print [ this will be printed.]
make "number sum random 99 1 ]
end
```

While loop control condition is: while [:number<90]. This means program executes the print [this will be printed.] make "number sum random 99 1] until the variable number larger or equal 90.

D. Repeat

Example code:

```
to star
  repeat 5 [ fd 100 rt 144 ]
end
```

In logo we have an very interesting control structure: repeat which can simple control the program to execute a block how many times. In the example code, program can execute 5 times [fd 100 rt 144].

E. Forever

Example code:

```
to myforever
forever [print "hi]
end
```

In Loge, another interesting control structure: forever which can let program execute a block infinite time. To stop it, we can set a count variable like repcount then set a if statement to control it.

F: STOP

Example code:

```
to mystop
repeat 20 [MAKE "x REPCOUNT ifelse :x>10 [STOP] [print repcount]]
end
```

Logo gives us an instruction which can stop and jump out of the block. Just as same as "break" in java or C. In example code, program executes the block 20 times, however, in the block we have a ifelse statement. When x > 10, program will execute [STOP] block which can stop the program and jump out of the block.

5 Data Types

6 Subprograms

7 Summary

8 References

[1] [2]

References

[1] Brian Harvey. Berkeley logo 6.0.

[2] Roy D Pea. Logo programming and problem solving. 1987.