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LINFO2132 Languages and Translators: milestone 1

What has been modified ?

- Binary operator

To get a better understanding of how to add new features, we started as explained on the teams by adding binary operations. Checking a bit what was missing we decided to add an operator that calculates the exponent between two numbers like this: $A \wedge B = A^B$.

Then we noticed that some logical operators were missing, so we decided to add XOR, NAND and NOR to the language. To use them, you just have to mark in capital letters the name of the logical operator. For example, to XOR between A and B, just do **A XOR B.**

Note that we have modified the or and the and to follow the same logic. Indeed, the operator for "and" has been modified from "&&" to "AND", and same for "or", from "||" to "OR"..

Of course this part has been tested in each test file to make sure it works perfectly.

- Queue / Stack

While thinking about what could be implemented we found it interesting to add specific types to our language which were in fact data structures in their own right: the queue and stack types. So we started to implement them. However, this feature causes us some problems in understanding the implementation and does not work yet. Only the grammar has been done.

- For loop

As far as the loops are concerned, we have tried a lot and in many ways to make them work. We started by implementing the for loop in one go with the syntax we had explained in the plan language (for (... | ... | ...)). But our current understanding being limited we had a lot of trouble. So we decided to change our strategy and start adding elements little by little. For the moment our for loop works like a while loop, the first step will be to initialize the counter and then when it is functional we can try to add the counter update. For the moment the grammar of this step works but not the rest, a better understanding of the scope will be needed.

Difficulties

During these weeks of work on the project, we realize that we have real difficulty in getting started. Thanks to the teacher's messages on teams, we think that the adequate strategy is to start with the grammar, then the ast, then the semantics and finally the interpreter (by testing between each stage).

Now that the implementation strategy is understood, we have some difficulties with the semantic part but also with the interpreter. We realized during the implementation of the for

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loop that we had to play with the different scopes and we didn't succeed yet to make something functional.