University of Puerto Rico Mayagüez Campus

DEPARTMENT OF MATHEMATICAL SCIENCES

26 de febrero de 2021

Project Plan: Branch

Omar Torres
Edmanuel Ayala
Jorge Huertas
Comp 4036 - seccion

Index

Introduction:

Our goal with our project "Branch" is to provide an effective and legible interpreted programming language for general public use, from seasoned developers to middle school students. It could be used as a tool to getting started in the programming world. This language would be fit for smaller scripts and those familiar with, for example, Python would be most at home when developing with Branch. We aim for Branch to be accessible as possible.

The features Branch offers span from:

- Simplified and readable keywords.

- Efficient performance.

- Intuitive learning curve.

- A complete debugger.

- Easy to use console.

- Consolidated Variable manager.

- Readily accessible.

Example Program in Branch:

1) Prints "Hello World"

   function.print("Hello World")

   Output: Hello World

2) Using a For Loop

   function.forLoop(X,0, 3)//Runs a loop where X equals 0 and runs till x equals 3
   {
   function.print("Hello World")
   }
   Output: Hello World Hello World Hello World

3) Using a while loop

   X = 0
   function.whileLoop(x<5)
   {
   function.print(x)
   x+=1
   }
   Output: x x x x x

4) Example of an if statement

a = int(input('Enter a number: '))
b = int (input('Enter a number: '))

function.if a < b:
{
  function.print(a, "is less than", b)
}
function.elif b > a:
{
  function.print(b, "is less than", a)
}

Function.else:
{
  function.print("they are both equal")
}

Input: 3 5
Output: 3 is less than 5

*Implementation tools:

The OS we will be using are Windows and Mac. We will be utilizing the premade Python lexer/parser named "PLY" and Python standard libraries. Using that lexer and parser to build an action tree so that way we can execute our code. As we currently take this class and learn of more tools, we will be adding more of them that we find important for our language.

Project plan:

        On the 26th of February of 2021, we decided to create the new programming language named "Branch". Our team consists of 3 members named "Omar Torres", "Edmanuel Ayala", and "Jorge Huertas". The goal for this new programming language is to incorporate a very easy to use and user friendly language. First we begin work on phase 2 starting with the lexical analyzer and syntax analyzer as our foundation of our language. 3That way we can begin to understand how we can close the gap between user and computer interaction. Through that we can use intermediate code and start to clean up any errors we can find up until April 23rd. After that the final report process will commence and will include:

- Introduction
- Language tutorial
- Language reference manual
- Language development
- Translator architecture
- The interfaces between the modules.
- The software development environment used to create the Translator.
- The test methodology used during development.
- Programs used to test our translator.
- And the conclusion

Project Timeline:

* See Gantt Chart for more details

Project Begins - 26 February

Lexical Analyzer (scanner) -27 February - 13 March

Syntax Analyzer (parser) - 13 March- 27 March

Intermediate Code - 27 March - 10 April

Testing and Error Correction - 10 April - 23 April

Development of final report - 24 April - 18 May

Final Report and Demo - 18 May