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Final Report:
EzHTML

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Introduction:

Programming Languages are created in order to communicate with a computer which have proven to be beneficial for designing applications that will enhance and facilitate the work of human beings. Nowadays, there are a lot of different languages that address different needs. With this in mind, we set to accomplish the creation of a simpler version of a language already created. Since websites are such an important part of our technological lives we decided to create a language for facilitating the writing process of HTML/CSS, reducing the total lines of code needed to develop a website. Our main objective while creating this new language, called *EzHTML*, was to provide a clearer code to those programmers interested in HTML/CSS programming and eliminating the tedious and/or exhausting process of opening and closing HTML tags.

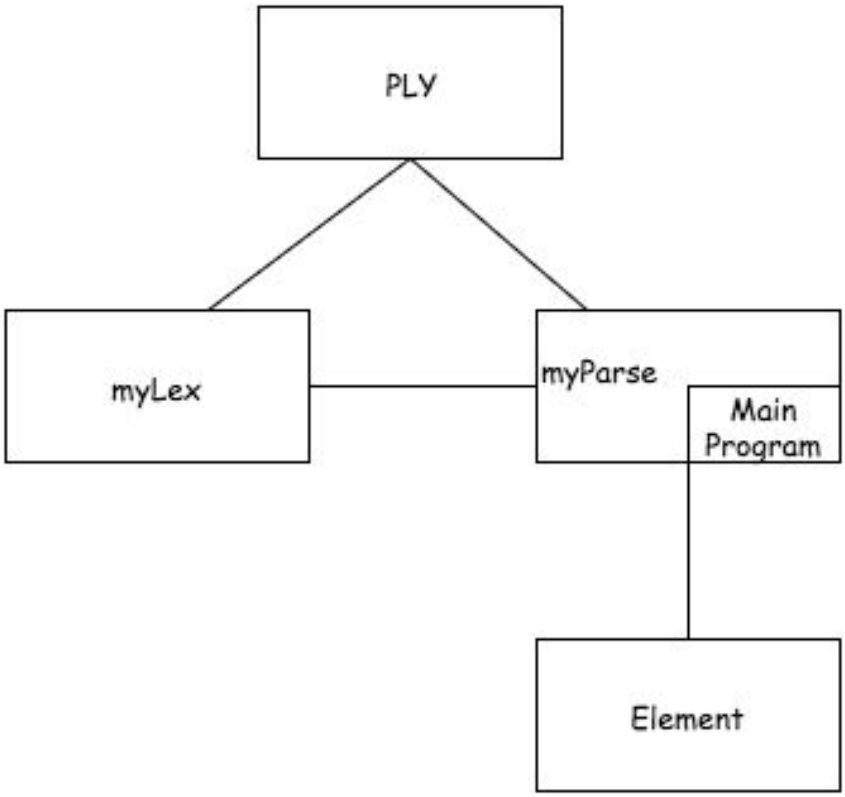
Language reference manual:

The reference manual can be found on the EzHTML Github page:

https://github.com/DeadmanPR/EzHTML

Language development

Translator architecture:



Interfaces between the modules:

The module named *myLex.py* is the lexer of our programming language. This module is in charge of creating the scanners for the different ID's based on the regular expressions. This module contains all the regular expression needed for tokenizing the input from the source

code.This tokens will then be used by the parser module in order to analyze the syntax of our programming language.

The module named myParse.py contains the parser for our programming language. It is in charge of taking tokens and recognizing if it belongs to our language. It uses grammar functions BNF to do this.

Describe the software development environment used to create the Translator:

The following programs were used in the EzHTML translator development process:

- ➔ Anaconda Spyder App for Python 2.7: Is a IDE that anaconda provides which contains the majority of the needed Python packages essential for the development of the EzHTML translator.

- ➔ PyDev: Python IDE for Eclipse.

Describe the test methodology used during development:

During development we first tested the myLex.py module. To test this module, we corroborated that the tokens were labeled and identified after Ezhtml sample input. Second, we tested the myParse.py module by seeing if the BNF statements produce the desired output for the parser functions to deal with. Third, we tested the Element Module checking if values were

stored correctly for use on the main program(intermediate code). Finally all the modules were tested together by creating the “sourceCode” that is on the GitHub page. This tests all possible entries and functionality of the system.

Show programs used to test your translator:

```
TITLE = "My Website";

body{
	BACKGROUND_COLOR = SPRINGGREEN;
	heading1 h1 = "This is a header!";
	style(h1){
		color = WHITE;
		alignment = CENTER;
		font = COURIER;
		font-size = 12;
		isBold = FALSE;
		isItalic = TRUE;
		isUnderline = TRUE;
	};
	paragraph myPara = "Lorem ipsum dolor sit amet, consectetur
adipiscing elit, sed do eiusmod tempor incididunt ut labore et
dolore magna aliqua. Ut enim ad minim veniam, quis nostrud
exercitation ullamco laboris nisi ut aliquip ex ea commodo
consequat. Duis aute irure dolor in reprehenderit in voluptate velit
esse cillum dolore eu fugiat nulla pariatur.”;

	style(myPara){
		color = WHITE;
		alignment = LEFT;
		font = COURIER;
		font-size = 72;
		isBold = TRUE;
		isItalic = TRUE;
		isUnderline = FALSE;
	};
```

```
      link myLink;
      linkAttr(myLink){
            destination = "http://www.google.com";
            text = "Shortcut to Google!";
            alignment = CENTER;
            font-size = 144;
      };

      image myImage;
      imageAttr(myImage){
            source =
"http://xiostorage.com/wp-content/uploads/2015/10/test.png";
            height = 200;
            width = 200;
            destination = "None";
      };
};
```

Conclusion:

Throught the development of this project, we acquired knowledge about creating a programming language. Our goal was to create a simpler and cleaner version of HTML/CSS, reducing the total lines of code needed to develop a website. Creating a new programming language is no easy task, so in order to accomplish our goal we studied lexical and syntax analyzers from other programming languages and also watched tutorials about creating them. Also we learned how to implement different Python libraries,such as PLY, in order to utilize them to create the EzHTML translator. Even with all the hard work we put into EzHTML, this is still a simpler and short version of a programming language which means that creating a robust programming language require a large amount of knowledge, experience and time.

In conclusion, this was a great experience because it allowed us to acquire experience and knowledge about creating programming languages like the ones that we use in class.