Interpret IPPcode19

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Chapter 1

readme1

#Documentation of IPP 2018/2019, 1 task #Author: Nikolaj Vorobiev #Login xvorob00

Parser of IPP2019Code:

1. parse.php

   Usage:

1. php7.3 parse.php –help

2. php7.3 parse.php < {IPPcode19.src}

Chapter 2

Module Index

2.1 Modules

Here is a list of all modules:

Xml_group 7
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Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

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Chapter 4

Module Documentation

4.1 Xml_group

Functions for generating xml-output.

Functions

- xml_init ()
  Creates xml document and start program.
- xml_instr ($instruction)
  XML instruction generator.
- xml_attr ($attr, $number, $type)
  XML attribute generator.
- xml_end ()
  Ends program and xml document.

4.1.1 Detailed Description

Functions for generating xml-output.

4.1.2 Function Documentation

4.1.2.1 xml_attr()

```
xml_attr (
              $attr,
              $number,
              $type )
```

XML attribute generator.

Parameters

in	*$attr*	Attribute
in	*$number*	Number of attribute
in	*$type*	Type of attribute

4.1.2.2 xml_instr()

```
xml_instr (
              $instruction )
```

XML instruction generator.

Parameters

in	*$instruction*	Instruction

4.2 Attr_group

Functions for checking attributes.

Functions

- var_attr ($attr, $number)
  Check and Generate {variable} attribute.
- symb_attr ($attr, $number)
  Check and Generate {symbol} attribute.
- label_attr ($attr, $number)
  Check and Generate {label} attribute.
- type_attr ($attr, $number)
  Check and Generate {type} attribute.
- is_label ($attr)
  Check if attr is {label}.
- after_instr ($attr)
  Check attribute after instruction.

4.2.1 Detailed Description

Functions for checking attributes.

4.2.2 Function Documentation

4.2.2.1 after_instr()

```
after_instr (
              $attr )
```

Check attribute after instruction.

Parameters

in	*$attr*	Attribute

Returns

ERROR: if attr is not '' or ' # {some_text}' else OK

4.2.2.2 is_label()

```
is_label (
              $attr )
```

Check if attr is {label}.

Parameters

in	*$attr*	Attribute

Returns

ERROR: if attr is not {label} else OK

4.2.2.3 label_attr()

```
label_attr (
              $attr,
              $number )
```

Check and Generate {label} attribute.

Parameters

in	*$attr*	Attribute
in	*$number*	Number of attribute

Returns

ERROR: if attr is not {label} else OK

4.2.2.4 symb_attr()

```
symb_attr (
              $attr,
              $number )
```

Check and Generate {symbol} attribute.

Parameters

in	*$attr*	Attribute
in	*$number*	Number of attribute

Returns

ERROR: if attr is not {symb} else OK

4.2.2.5 type_attr()

```
type_attr (
              $attr,
              $number )
```

Check and Generate {type} attribute.

Parameters

in	*$attr*	Attribute
in	*$number*	Number of attribute

Returns

{ERROR: if attr is not {type} else OK}

4.2.2.6 var_attr()

```
var_attr (
              $attr,
              $number )
```

Check and Generate {variable} attribute.

Parameters

in	*$attr*	Attribute
in	*$number*	Number of attribute

Returns

ERROR: if attr is not {var} else OK

Chapter 5

File Documentation

5.1 parse.php File Reference

Interpet IPPcode19 : Parser.

Functions

- xml_init ()
  Creates xml document and start program.
- xml_instr ($instruction)
  XML instruction generator.
- xml_attr ($attr, $number, $type)
  XML attribute generator.
- xml_end ()
  Ends program and xml document.
- var_attr ($attr, $number)
  Check and Generate {variable} attribute.
- symb_attr ($attr, $number)
  Check and Generate {symbol} attribute.
- label_attr ($attr, $number)
  Check and Generate {label} attribute.
- type_attr ($attr, $number)
  Check and Generate {type} attribute.
- is_label ($attr)
  Check if attr is {label}.
- after_instr ($attr)
  Check attribute after instruction.
- print_help ()
  Print a help message.
- parse ()
  Main parse loop.
- _main ($argc, $argv)
  Main function of the program.

Variables

- const **OK** 0
- const PAR_ERROR 10

  PAR_ERROR –help parametr error.
- const HEAD_ERROR 21

  PAR_ERROR '.IPPcode' head error.
- const ERROR 22

  ERROR Lexical and Syntax errors.
- $instr_counter = 1

  Global variable $instr_counter, that counts instructions.
- $code = _main($argc, $argv)

  Variable contains exit code of _main.

5.1.1 Detailed Description

Interpet IPPcode19 : Parser.

Author

Nikolaj Vorobiev

Version

1.0

Date

12.03.2019

Copyright

GNU GPL3

5.1.2 Function Documentation

5.1.2.1 _main()

```
_main (
              $argc,
              $argv )
```

Main function of the program.

Enable parameters of main: –help

5.1.2.2 parse()

```
parse ( )
```

Main parse loop.

Function contains glob_array variable, that contains instructions sorted by attributes.

```
$glob_array = array(
    array('CREATEFRAME', 'PUSHFRAME', 'POPFRAME', 'RETURN', 'BREAK'),
    array('DEFVAR', 'POPS'),
    array('PUSHS', 'EXIT', 'PRINT', 'WRITE'),
    array('LABEL', 'CALL', 'JUMP'),
    array('MOVE', 'INT2CHAR', 'STRLEN', 'TYPE', 'NOT'),
    array('READ'),
    array('ADD', 'SUB', 'MUL', 'IDIV', 'LT', 'GT', 'EQ', 'AND', 'OR', 'STR2INT', 'CONCAT', 'GETCHAR', '
      SETCHAR'),
    array('JUMPIFEQ', 'JUMPIFNEQ')
);
```

Also function contains parser's loop, where is going Lexical and Syntax analysis.

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