**LANGUAGE SPECIFICATION**

1. **LANGUAGE NAME: ETC (Easy To Code)**
2. **DATA TYPES:**

|  |  |  |  |
| --- | --- | --- | --- |
| VALUE PART | SYNTEX | EXAMPLES | CLASS PART |
| var | Var a = constant | Var a = 2; | DT |
| var | var f = constant | Var c = 3.3; | DT |
| var | Var c = constant | \_efg34 = ‘c’; | DT |
| var | Var s = constant | \_klm098 = “string”; | DT |

1. **LOOPS**

|  |  |  |  |
| --- | --- | --- | --- |
| VALUE PART | SYNTEX | EXAMPLES | CLASS PART |
| For | For(exp;cond;exp){code} | For(var i =0 ; i<25;i++){I+2;} | For |
| while | while(cond){} | While(i<2){} | While |
| Do | do | Do{}While | do |
|  |  |  |  |

1. **CONDITIONAL STATEMENTS:**

|  |  |  |  |
| --- | --- | --- | --- |
| VALUE PART | SYNTEX | EXAMPLES | CLASS PART |
| if | If(ocnd) | If(i < 2){} | IF |
| switch | Switch(variable){case:2; break;} | Switch(opr){case 1:} | SW |
|  |  |  |  |
|  |  |  |  |

1. **OPERATORS:**
   1. **AIRTHMATIC:**

|  |  |
| --- | --- |
| VALUE PART | CLASS PART |
| + | ADD\_SUB |
| - | ADD\_SUB |
| \ | MUL\_DIV\_MOD |
| \* | MUL\_DIV\_MOD |
| % | MUL\_DIV\_MOD |

* 1. **INCREMENT/DECREMENT:**

|  |  |
| --- | --- |
| VALUE PART | CLASS PART |
| -- | INC\_DEC |
| ++ | INC\_DEC |
|  |  |

* 1. **ASSINGMENT:**

|  |  |
| --- | --- |
| VALUE PART | CLASS PART |
| = | ASS\_OP |
| += | ASS\_OP |
| -= | ASS\_OP |
| /= | ASS\_OP |
| \*= | ASS\_OP |

* 1. **LOGICAL:**

|  |  |
| --- | --- |
| VALUE PART | CLASS PART |
| && | LOGICAL\_OP |
| || | LOGICAL\_OP |
|  |  |

* 1. **RELATIONAL:**

|  |  |
| --- | --- |
| VALUE PART | CLASS PART |
| < | REL\_OP |
| > | REL\_OP |
| == | REL\_OP |
| != | REL\_OP |
| <= | REL\_OP |
| >= | REL\_OP |

1. **PANCTUATORS**:

|  |  |
| --- | --- |
| VALUE PART | CLASS PART |
| . | . |
| ; | ; |
| , | , |
| ( | ( |
| ) | ) |
| { | { |
| } | } |
| ‘ | ‘ |
| \ | \ |
| “ | “ |

1. **CONSTANTS:**

|  |  |  |  |
| --- | --- | --- | --- |
| VALUE PART | R.E | DFA | CLASS PART |
| 3 | d\* |  | Int\_cons |
| 4.44 | D\*\*dot\*d+ |  | Float\_cons |
| ‘c’ | (INV\_COMA)+(l+(BK\_SLASH\*l))+ (INV\_COMA) |  | Char\_cons |
| “string” | “+(l+(\\*l))\*+ “ |  | String\_cons |

1. **IDENTIFIERS/VARIABLES:**

7.1. Letters

e.g: aaa

7.2. Letters then digits

e.g: abc1.

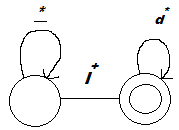
7.3. Underscore then letter then digits

e.g: \_a1

**R.E:**

\_\* l+ d\*

**D.F.A:**

****

**VARIABLE INITILAZTION ONLY:**

e.g: int aaa;

R.E:

D.F.A:

**VARIABLE INITILAZATION AND DECLARATION:**

e.g: int a=10;

**VARIABLE DECLARATION ONLY:**

e.g: aaa=20;

**STATEMENT TERMINATOR:**

|  |  |
| --- | --- |
| STATEMENT TERMINATOR SYMBOL | CLASS PART |
| ; | ; |

**COMMENT:**

|  |  |
| --- | --- |
| COMMENT SYMBOL | CLASS PART |
| // | Single\_line\_comment |
| /\* \*/ | Multi\_line\_comment |

**MORE:**

|  |  |
| --- | --- |
| KEY WORDS | CLASS PART |
| break | BREAK |
| case | CASE |
| main | MAIN |
| void | VOID |
| class | CLASS |
| Function | FUNCTION |
| virtual | virtual |
| rules | rules |
| Import | Import\_export |
| export | Import\_export |

|  |  |
| --- | --- |
| Access Modifiers | CLASS PART |
| public | Acc-Mod |
| private | Acc\_Mod |
|  |  |

Starting Point

Function main (){

}

Function

Function ID(){

}

Class ID

{

}

**NOTE:**

1. Since data types belong to same class and all data types have same syntax, we don’t need separate ‘class part’ name for it, just give one name to all data types( e.g. int,float,char all will have class part name ”Data\_type”)
2. Operators are defined in categorize for your understanding, if your language have more operators than mentioned above add them in your documentation.
3. Identifiers/variables examples and their R.E/D.F.A are given for understanding purpose, add your own set of examples as per your compiler requirement (as well as R.E and D.F.A too).In given example compiler can accept three cases; only letters, letters then digits and underscore then letters and then digits. But their R.E and D.F.A is one which implements all 3 cases.(Left this part for now, we will do in next lab)
4. This template is for basic understanding, feel free to add/modify or change things as per your language requirements (if you want to add any description add it too).
5. Take class part in capital letters for easiness in future use.

**'|(l|(\\*l))| '**