

# **Birla Institute of Technology & Science-Pilani, Hyderabad Campus**

## **First Semester 2017-2018**

### **Principles of Programming languages (CS F301)**

**Due Date for Assignment 1: 15-09-2016**

#### **Assignment-1(Syntax of programming languages)**

**Max marks:20**

In this assignment you are expected to write the syntax of your mini programming language chosen. The following is the link where you can find the list of around 256 different programming languages.

Link: <https://dzone.com/articles/big-list-256-programming>

**Every group will have a unique language.**

**NOTE: Register your team (max 3) and language name with Ms.Kiranmai in B214 during the two slots mentioned below. Avoid last minute rush to get your favorite language since the language choice will be first come first serve.**

#### **Slots:**

**4-09-2017: 4-5 p.m**

**5-09-2017: 4-5 p.m**

Your grammar has to include the following

- sequential statements - **2 marks**
- a loop (for, while, do...while, for each etc.,) - **4 marks**
- a conditional statement (if, switch etc.,) - **4 marks**
- a function (function declaration, function definition and function call) - **4 marks**
- \*\*Arithmetic , logical and relational operators - **2+2+2 marks**

**\*\*Use operators of different precedence (eg. \* and + )**

**Partial** Syntax for C is given below for your reference:

$\langle \text{program} \rangle \rightarrow \langle \text{header} \rangle \langle \text{function} \rangle \langle \text{main} \rangle$

$\langle \text{main} \rangle \rightarrow \text{main}() \langle \text{stmnts} \rangle$

$\langle \text{stmnts} \rangle \rightarrow \langle \text{stmnt} \rangle ; \langle \text{stmnts} \rangle \mid \langle \text{stmnt} \rangle$

$\langle \text{stmnt} \rangle \rightarrow \langle \text{condStmnt} \rangle \mid \langle \text{LoopStmnt} \rangle \mid \langle \text{DeclStmnt} \rangle \mid \langle \text{AssignStmnt} \rangle \mid \langle \text{function\_call} \rangle$

$\langle \text{condStmnt} \rangle \rightarrow \langle \text{if\_stmt} \rangle \mid \langle \text{switch\_stmt} \rangle$

$\langle \text{LoopStmnt} \rangle \rightarrow \langle \text{For\_stmt} \rangle \mid \langle \text{while\_stmt} \rangle$

$\langle \text{AssignStmnt} \rangle \rightarrow \text{id} = \langle \text{arithmetic\_exp} \rangle$

$\langle \text{DeclStmnt} \rangle \rightarrow \langle \text{Type} \rangle \langle \text{VarList} \rangle ;$

$\langle \text{VarList} \rangle \rightarrow \langle \text{VarList} \rangle , \text{id} \mid \text{id} ;$

$\langle \text{arithmetic\_exp} \rangle \rightarrow \langle \text{arithmetic\_exp} \rangle + \langle \text{var} \rangle \mid \langle \text{var} \rangle$

**Submissions:** The assignment has to be submitted before the due date (11.59 p.m. on 15/09/2017) to

email id:- [ppltwenty.17@gmail.com](mailto:ppltwenty.17@gmail.com)

The subject of email should be “**Assignment-1 First Sem 2017-18**”.