Birla Institute of Technology & Science-Pilani, Hyderabad Campus

First Semester 2015-2016

PRINCIPLES OF PROGRAMMING LANGUAGES (CS/IS F301)

ASSIGNMENT-1(SYNTAX OF PROGRAMMING LANGUAGES) MAX MARKS:10

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 2500 different programming languages. **Every batch will have a unique language**.

http://people.ku.edu/~nkinners/LangList/Extras/search.htm
The programming languages are alphabetically sorted. Click on the alphabet to search.

Your grammar has to include the following

- sequential statements - **2 marks**
- a loop (for, while, do...while, for each etc.,) - **3 marks**
- a conditional statement (if, switch etc.,) - **2 marks**
- a function (function declaration, function definition and function call) - **3 marks**

Use minimal set of all operators for example one arithmetic, one logical and one relational operators along with assignment operator.

Partial Syntax for C is given below for your reference

<program> -> <header> <functions> <main>

<main> -> main() { <stmts> }

<stmts> -> <stmt>;< stmts>|<stmt>

<stmt> -> <var> = <arithmetic_exp>

| <if_stmt> | <while_stmt> | <function_call>

<if_stmt> ->

<while_stmt> ->

<function_call> ->

<functions> ->

<arithmetic_exp> -> <arithmetic_exp> + <var> | <var>

<logical_exp> -> <logical_exp> || <arithmetic_exp>

| <logical_exp> == <arithmetic_exp>

| <arithmetic_exp>

ASSIGNMENT 2 **MAX MARKS:30**

In this assignment you are asked to study and understand the features of a programming language of your choice.

1. Choose either one programming language to investigate, or two programming languages to compare and contrast.
2. Investigate the language(s) you have chosen
3. Write programs in your language(s).
4. Give a short presentation for 15 Mins.

1 Choose language(s)
Choose either one programming language to investigate, or two programming languages to compare and contrast. You are free to choose any language(s) you want, so long as there is some way of writing and executing programs in this language. That is, there should be a compiler or interpreter available for the language(s) you choose. **Every batch will have a unique language**.

You may consider visiting this link to know more languages:
http://people.ku.edu/~nkinners/LangList/Extras/search.htm
The programming languages are alphabetically sorted. Click on the alphabet to find more.

2 Investigate language(s)
Explore the below mentioned features and limitations of the language(s) you have chosen.

Features: Data Types (Basic and complex data types) ,Procedures / Function (Scope, parameter passing mechanisms) ,Memory Management

If you are comparing and contrasting two languages, you can consider how your languages are similar or different based on features.

Please refer to the marks division to know what is expected for you.

3 Write programs
Write at least two programs in the language(s). This will help you gain an understanding of what is easy or difficult to accomplish in the language(s), and to understand features of the language(s). You might start with something very simple like a "hello world" program, but you should also try implementing something more substantial. Try to identify what kind of programs is suitable for writing in your language(s) for example searching or sorting.

4. Presentation and Demo

Administrative details for assignment

Team Size = 4 at max

Registration of team and demo slots: Ms. Kiranmai Room no B-214

Time for registration of team: on or before 21/10/2015 all days between 4-5PM

Registration details required: Team Members details, Programming language(s) chosen, Date and time for Demo

Evaluation – 30 Marks

Language chosen **– 2 Marks**

Data Types (Basic and complex data types) – **4 Marks**

Procedures / Function (Scope, parameter passing mechanisms) – **5 Marks**

Memory Management – **6 Marks**

Programs execution – Simple programs – **6 Marks**

Functions – **7 Marks**

Instructor Incharge

CS/IS F301.