EEP-773 (Telecom Software Lab)

Assignment # 7 - Flex(lex) and Bison(yacc)

17 September 2015 - Take Away Assignment

Problem Statement 1

Write a Flex(lex)/Bison(yacc[1]) code to read assembly code for a 8085-like microprocessor and simulate for following set of instructions:

- Registers A,B,C,D,E,H and L are represented by char variables A,B,C,D,E,H
- Memory locations from 00H to 0FFH are represented by char array M

Instructions	Corresponding task to be performed
`mov reg1, reg2`	`copy value of variable reg2 to variable reg1`
`mov M, reg`	`copy value of variable (Reg) to memory location in array at index M`
`mov reg, M`	`copy value of memory location in array at index M to variable (Reg)`
`mvi reg,value`	`assign Value to variable (Reg)`
`mvi M,value`	`assign Value to memory location in array at index M`

- Part 1 - Parse single instruction and simulate
- Part 2 - Take sequence of instructions from text file and simulate

Problem Statement 2

Write a Flex(lex)/Bison(yacc) code to replace variable/function with hungarian notation equivalent in c code as indicated below -

[1] Where does the name 'yacc' derive from ? (Hint: Yak)

- Part 1 - For `char,int,float,bool`
    - char article → char cArticle
    - int number → int dNumber
    - float fraction → float fFraction
    - bool state → bool bState
    - printf(“%c”,article); → printf(“%c”,cArticle);
    - number++; → dNumber++;
    - scanf(“%f”,fraction); → scanf(“%f”,fFraction);
    - state = false; → bState = false;
- Part 2 - Extend hungarian notations to arrays and pointers
    - char string[10] → char cString[10]
    - int list[100] → int dList[100]
    - bool state[8] → bool bState[8]
    - int *address → int *pdAddress
    - char *str → char *pcStr

Instructions

- Deadline to submit assignment is **Sep 19, 2359 hrs**.
- use ps1.l,ps1.y,ps1.c and ps2.l,ps2.y,ps2.c for file names and corresponding folders along with make file if necessary.
- Create folder with name jtm15XXXX_YY where XXXX --> 4 digits in your entry number and YY --> assignment number (for ex. jtm158888_07 as folder name)(Replace jtm with bsy for msr students)
- Put your.l,.y,.c,makefile, .tex file, any image file, any bib file and any absolutely necessary file/files in the folder and don’t put any junk.
- Compress your folder using tar.gz compression only
- Mail your compressed folders to “2015eep773@gmail.com” only. Avoid multiple submissions. In case of multiple submissions TAs will have right to choose any submission for evaluations seems fit.
- Subject of the submission mail must be assignYY_jtm15XXXX.
- Penalty for crossing deadline is 10% for every hour after deadline.
- Do not deviate from above protocol for folder name and subject line it helps us to work efficiently if those things are in order.