CSC320 Project-
BBL-Barmij Bil Lebneneh

Project Description:

the purpose of the project is to develop a compiler that converts a high level programming syntax into a low level syntax coded in ARM v7 or v8 Assembly.

Features:

A. *Language Constructs:*

The constructs of the high level language consist of the following:

- Data types: “ra2m” natural number (4 bytes)
- Data Memory: 40 bytes (R0->R9)
- Operators:
  - logical: “&” and “|“
  - Assignment: “=”
- Instructions:
  - “*iza i=j:*” this is the equivalent of “*if (i==j)*”
- Structure:
  - The program is written in 2 sections:
    - Variable section titled: “tejhiz:”
      - This section contains the variable initializations
    - Program section titled: “barmajeh:”
      - This section contains the main code
- Properties:
  - All the variables have to initialized in the setup section (declared and assigned)
  - The language is indent based. There are no opening and closing brackets. 4 spaces indicate a sub block
- Example:

Prog.bbl (Barmij Bil Lebneneh)	Prog.c (Its C equivalent)
#tejhiz ***ra2m*** *i=0* ***ra2m*** *j=0* ***#barmajeh*** ***iza*** *i=5:* *j=j|i*	***Int*** *i=0;* ***Int*** *j=0;* ***For*** *(i=0;i<=10;i++)* *J=j|i;*

B. *Execution:*

The code should be written in a .bbl file. It is a text file.

The compiler is an .exe file that is called from the console (cmd) followed by the path or name of the program to compile (.bbl file).

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C:/> BBLC.exe prog.bbl
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- BBLC.exe is the compiler
- Prog.bbl is the text file containing the BBL code
- Prog.s is the compiled assembly file generated by the compiler BBLC

Once the compiler finishes its execution is should generate “prog.s” Arm assembly file.

The .s file should be executable in an Arm emulator.

Notes:

The complier codes should be well documented.

Your code should be well structured and modular (function based), preferably Object Oriented.

Choose your language of preference to code the compiler