**COMPILERS – PROJECT**

**CS 59000-002**

**Building the Parser**

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**Folder contains:**

1. **Readme**
2. **Source\_files**
3. **Class\_files**
4. **Sample output**

**\*The description of the file is given at the start of the class.**

**Source Code Package contains 4 source files :**

1. **Grammar.java**
2. **StateTable.java**
3. **Items.java**
4. **Build\_LR.java**

**Options for Opening the code:**

1. **Compile the source files**
2. **Or Run the class files**

**Build\_LR.java / Build\_LR.class is the file which runs the result of parsing the input string in the specified LR parser.**

**\*if the input string needs to be changed – edit it in the main method of Build\_LR.java**

**Sample Output :**

1. **For LR(0) Parser**

**The LR(0) Parser Table :**

**-1 | i ( ) + $ S E T**

**0 | s5 s6 - - - - 1 9**

**1 | - - - s3 s2 - - -**

**2 | Accept Accept Accept Accept Accept - - -**

**3 | s5 s6 - - - - - 4**

**4 | r1 r1 r1 r1 r1 - - -**

**5 | r3 r3 r3 r3 r3 - - -**

**6 | s5 s6 - - - - 7 9**

**7 | - - s8 s3 - - - -**

**8 | r4 r4 r4 r4 r4 - - -**

**9 | r2 r2 r2 r2 r2 - - -**

**Stack Input Action**

**$0 i+i$ s5**

**$05 +i$ r3**

**$09 +i$ r2**

**$01 +i$ s3**

**$013 i$ s5**

**$0135 $ r3**

**$0134 $ r1**

**$01 $ s2**

**$012 Accept**

1. **For LR(1) Parser**

**The LR(1) Parser Table :**

**-1 | i ( ) + \* $ S E T F**

**0 | s5 s6 - - - - - 1 7 4**

**1 | - - - s3 - s2 - - - -**

**2 | - - - - - Accept - - - -**

**3 | s5 s6 - - - - - - 11 4**

**4 | - - r4 r4 r4 r4 - - - -**

**5 | - - r5 r5 r5 r5 - - - -**

**6 | s5 s6 - - - - - 10 7 4**

**7 | - - r2 r2 s8 r2 - - - -**

**8 | s5 s6 - - - - - - - 9**

**9 | - - r3 r3 r3 r3 - - - -**

**10 | - - s12 s3 - - - - - -**

**11 | - - r1 r1 s8 r1 - - - -**

**12 | - - r6 r6 r6 r6 - - - -**

**Stack Input Action**

**$0 i+i\*i$ s5**

**$05 +i\*i$ r5**

**$04 +i\*i$ r4**

**$07 +i\*i$ r2**

**$01 +i\*i$ s3**

**$013 i\*i$ s5**

**$0135 \*i$ r5**

**$0134 \*i$ r4**

**$01311 \*i$ s8**

**$013118 i$ s5**

**$0131185 $ r5**

**$0131189 $ r3**

**$013111 $ r1**

**$0131 $ s2**

**$01312 Accept**