



ADITYA ENGINEERING COLLEGE (A)

Aditya Nagar, ADB Road, Surampalem
Department of Information Technology

Compiler Design

Faculty Name: G.Srinivas

Semester: V Semester

Designation: Assistant Professor

Course: Compiler Design

Department: IT

Topic: Non-Recursive Predictive Parsing

Conventional Methods: Chalk & Talk

Teaching Methodology: Video Demonstration

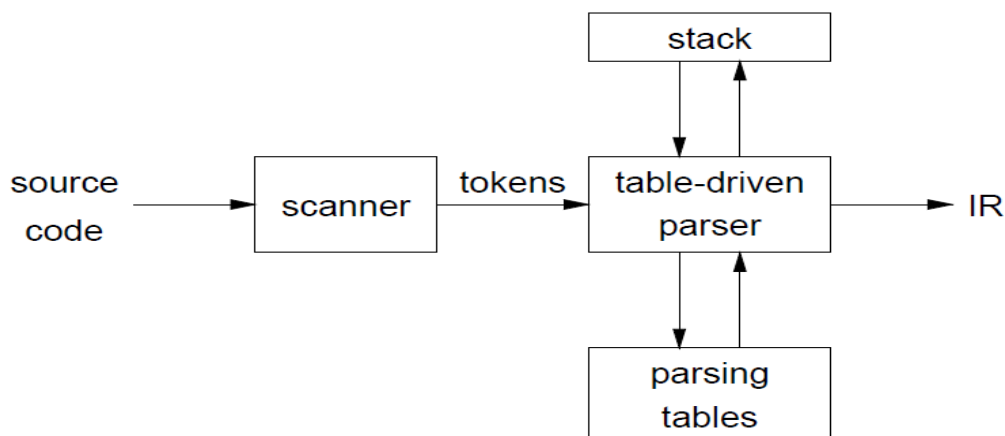
A predictive parser is an effective technique of executing recursive-descent parsing by managing the stack of activation records. The topic can be better explained with the help of Video demonstration.

References:

1. <https://www.geeksforgeeks.org/recursive-descent-parser/>
2. <https://www.tutorialspoint.com/what-is-recursive-descent-parser>

Non-Recursive Predictive Parsing

Now, a predictive parser looks like:



Non-recursive predictive parsing

Input: a string w and a parsing table M for G

```
tos  $\leftarrow$  0
Stack[tos]  $\leftarrow$  EOF
Stack[++tos]  $\leftarrow$  Start Symbol
token  $\leftarrow$  next_token()
repeat
  X  $\leftarrow$  Stack[tos]
  if X is a terminal or EOF then
    if X = token then
      pop X
      token  $\leftarrow$  next_token()
    else error()
  else /* X is a non-terminal */
    if  $M[X, \text{token}] = X \rightarrow Y_1 Y_2 \dots Y_k$  then
      pop X
      push  $Y_k, Y_{k-1}, \dots, Y_1$ 
    else error()
until X = EOF
```

Non Recursive Predictive Parsing using Video Demonstration:

The topic explained through NPTEL video lecture. After completion of video lecture, another example problem is solved to better understand the concept.

