NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

School of Computer Science and Engineering
College of Engineering

RDP Code Generator

CZ3007 Compiler Techniques Lab Project

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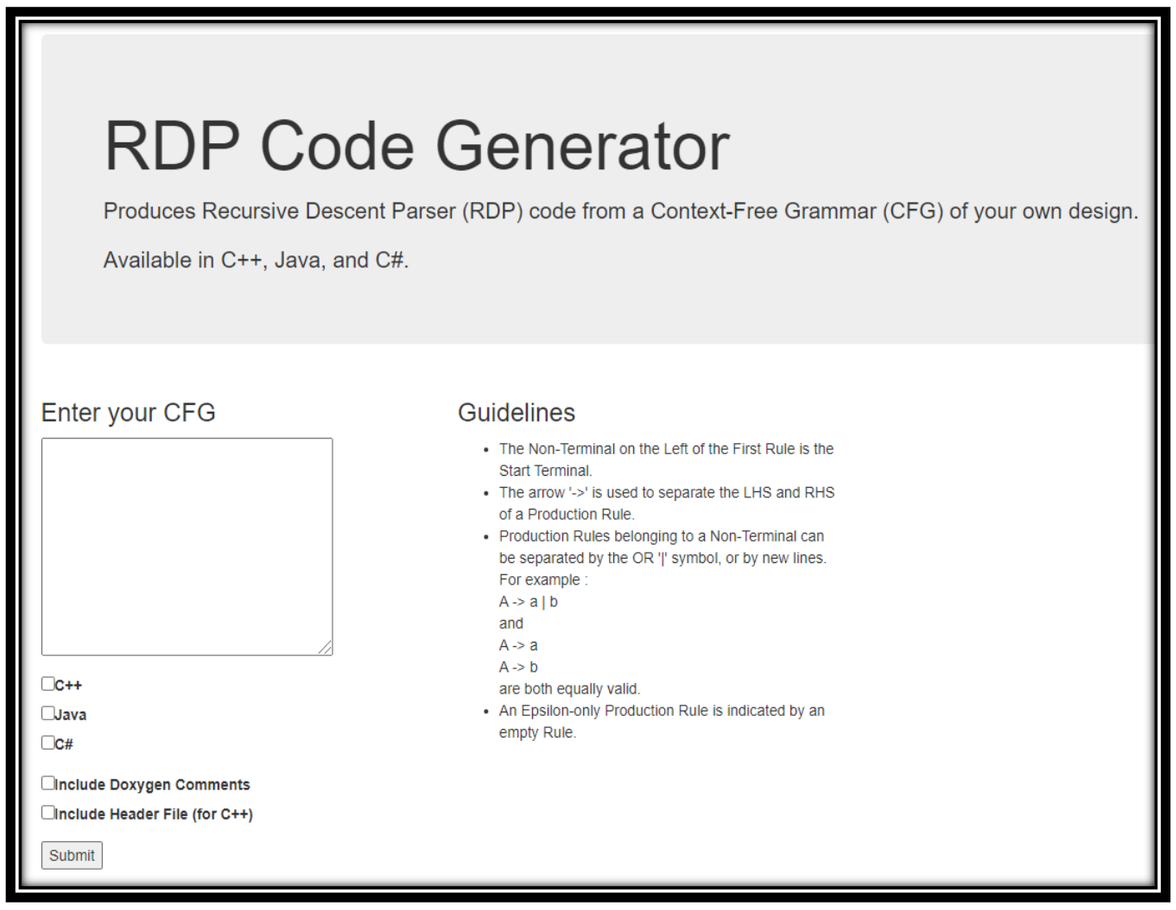


Robust CFG Processing and RDP Code Generation engines.

Support for various languages (C++, Java, and C#).

Produces detailed reports that explain the RDP functionalities.

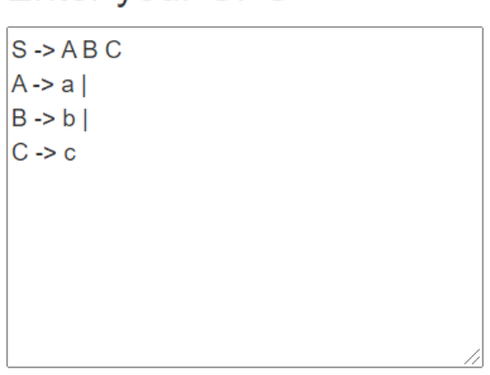
Demonstrates concepts taught in the CZ3007 course, such as LL(1) Predictive Parsing.

Project Objectives:

The RDP Code Generator web application was developed as a supplementary tool for the CZ3007 Compiler Techniques course. It aims to help students gain a better understanding of the topics of Context-Free Grammars (CFGs) and Recursive Descent Parsers (RDPs) as taught in the course. Students can submit CFGs of their own design, and the application produces RDP code based on the CFG specification. Students can then download the RDP code to test on their own devices. Additionally, the application can also generate detailed reports that provide an in-depth explanation of the RDP functionalities.

By allowing students to engage in CFG design and RDP analysis in a hands-on manner, putting into practice concepts taught in the course, the application strives to fuel students' interest and knowledge of Compiler Techniques.

CFG to RDP




```
public static boolean parse_S()
{
    if (IsMemberOfPredictSet(peek(), "S", 1))
    {
        return parse_A() && parse_B() && parse_C();
    }
    else
    {
        System.out.println("Parse Error in parse_S() : Expected 'a' OR 'b' OR 'c'. Instead, found " + peek() + ".\n");
        return false;
    }
}

public static boolean parse_A()
{
    if (IsMemberOfPredictSet(peek(), "A", 2))
    {
        return match("a");
    }
    else
    {
        return true;
    }
}
```