

```

    }

    }
    if (result != originalResult) {
        originalResult.remove(0, originalResult.length)
        originalResult.appendAll(result)
        cnt += 1
    }
    else {
        addFlag = false
        cnt += 1
    }
}
result
}

```

Scala 实现 go 函数:

```

def go( l: ArrayBuffer[ (String, String, String) ], X: String ): ArrayBuffer[ (String, String, String) ] = {
    //GO(l, X) = CLOSURE(J)
    //J = {任何形如[A->  $\alpha$  X  $\cdot$   $\beta$  , a]的项目 | [A->  $\alpha$   $\cdot$  X  $\beta$  , a]  $\in$  l}
    val ans = new ArrayBuffer[ (String, String, String) ]()
    val items = new ArrayBuffer[ (String, String, String) ]()

    for( ex <- l ) {
        val pointPosition = ex._2.indexOf(".")
        //  $\cdot$  不在最右边
        if (pointPosition < ex._2.length - 1) {
            val A = ex._1
            val possibleX = ex._2( pointPosition + 1)
            //  $\alpha$ X $\beta$ 
            val noPointExpressionPart2 = ex._2.replace(".", "")
            if( X == possibleX.toString ) {
                //  $\alpha$ X $\beta$ 
                val newPart2 = noPointExpressionPart2.substring(0, pointPosition + 1) + "." +
                    noPointExpressionPart2.substring(pointPosition + 1,
noPointExpressionPart2.length)
                val a = ex._3
                items += ( (A, newPart2, a) )
            }
        }
    }
    ans.appendAll( getClosure(items) )
    ans
}

```