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//-----
// The following code was generated by CUP v0.11b 20160615 (GIT 4ac7450)
//-----

package analizadores;

import java_cup.runtime.*;
import java.util.LinkedList;
import arbol.*;
import excepciones.Errores;
import java_cup.runtime.XMLElement;

/** CUP v0.11b 20160615 (GIT 4ac7450) generated parser.
 */
@SuppressWarnings({"rawtypes"})
public class Parser extends java_cup.runtime.lr_parser {

    public final Class getSymbolContainer() {
        return sym.class;
    }

    /** Default constructor. */
    @Deprecated
    public Parser() {super();}

    /** Constructor which sets the default scanner. */
    @Deprecated
    public Parser(java_cup.runtime.Scanner s) {super(s);}

    /** Constructor which sets the default scanner. */
    public Parser(java_cup.runtime.Scanner s, java_cup.runtime.SymbolFactory sf) {super(s,sf);}

    /** Production table. */
    protected static final short _production_table[][] =
        unpackFromStrings(new String[] {
            "\000\200\000\002\002\004\000\002\002\003\000\002\003" +
            "\004\000\002\003\003\000\002\004\003\000\002\004\003" +
            "\000\002\004\003\000\002\004\003\000\002\004\003\000" +
            "\002\004\003\000\002\004\003\000\002\004\003\000\002" +
            "\004\003\000\002\004\003\000\002\004\003\000\002\004" +
            "\003\000\002\004\003\000\002\004\003\000\002\004\003" +
            "\000\002\004\004\000\002\004\004\000\002\016\007\000" +
            "\002\012\012\000\002\012\012\000\002\017\005\000\002" +
            "\017\003\000\002\017\002\000\002\013\004\000\002\005" +
            "\004\000\002\005\003\000\002\006\003\000\002\006\003" +
            "\000\002\006\003\000\002\006\003\000\002\006\003\000" +
            "\002\006\003\000\002\006\003\000\002\006\003\000\002" +
            "\006\003\000\002\006\003\000\002\006\003\000\002\006" +
            "\003\000\002\006\003\000\002\006\003\000\002\006\004" +
            "\000\002\006\004\000\002\007\011\000\002\007\007\000" +
            "\002\011\003\000\002\011\003\000\002\011\003\000\002" +
            "\011\003\000\002\011\003\000\002\010\006\000\002\010" +
            "\005\000\002\010\005\000\002\034\015\000\002\034\017" +
            "\000\002\040\005\000\002\040\003\000\002\035\011\000" +
            "\002\035\014\000\002\036\015\000\002\037\010\000\002" +
            "\037\010\000\002\021\007\000\002\021\007\000\002\022" +

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"\011\000\002\022\015\000\002\022\013\000\002\023\011" +
"\000\002\033\004\000\002\033\003\000\002\024\006\000" +
"\002\024\005\000\002\025\011\000\002\026\013\000\002" +
"\032\005\000\002\032\004\000\002\032\004\000\002\027" +
"\014\000\002\030\004\000\002\031\004\000\002\015\005" +
"\000\002\015\004\000\002\041\004\000\002\041\006\000" +
"\002\041\006\000\002\041\006\000\002\041\006\000\002" +
"\041\006\000\002\041\005\000\002\041\005\000\002\041" +
"\005\000\002\041\005\000\002\041\005\000\002\041\005" +
"\000\002\041\005\000\002\041\005\000\002\041\005\000" +
"\002\041\005\000\002\041\005\000\002\041\005\000\002" +
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"\004\000\002\041\005\000\002\041\003\000\002\041\003" +
"\000\002\041\003\000\002\041\003\000\002\041\003\000" +
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"\041\006\000\002\041\011\000\002\041\006\000\002\041" +
"\006\000\002\041\006\000\002\041\010\000\002\041\010" +
"\000\002\041\003\000\002\014\006\000\002\020\005\000" +
"\002\020\003\000\002\020\002" });

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/** Access to production table. */

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public short[][] production_table() {return _production_table;}

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/** Parse-action table. */

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protected static final short[][] _action_table =
    unpackFromStrings(new String[] {
        "\000\u013b\000\050\004\012\005\010\006\016\007\006\010" +
        "\045\011\030\012\051\013\022\015\032\020\040\021\053" +
        "\022\014\023\026\024\011\026\037\027\052\030\013\036" +
        "\041\100\025\001\002\000\052\002\ufff2\004\ufff2\005\ufff2" +
        "\006\ufff2\007\ufff2\010\ufff2\011\ufff2\012\ufff2\013\ufff2\015" +
        "\ufff2\020\ufff2\021\ufff2\022\ufff2\023\ufff2\024\ufff2\026\ufff2" +
        "\027\ufff2\030\ufff2\036\ufff2\100\ufff2\001\002\000\004\073" +
        "\u013d\001\002\000\014\057\uffce\071\uffce\073\uffce\077\uffce" +
        "\100\uffce\001\002\000\052\002\ufff7\004\ufff7\005\ufff7\006" +
        "\ufff7\007\ufff7\010\ufff7\011\ufff7\012\ufff7\013\ufff7\015\ufff7" +
        "\020\ufff7\021\ufff7\022\ufff7\023\ufff7\024\ufff7\026\ufff7\027" +
        "\ufff7\030\ufff7\036\ufff7\100\ufff7\001\002\000\014\057\uffd0" +
        "\071\uffd0\073\uffd0\077\uffd0\100\uffd0\001\002\000\004\073" +
        "\u013c\001\002\000\014\057\uffd1\071\uffd1\073\uffd1\077\uffd1" +
        "\100\uffd1\001\002\000\004\065\u0138\001\002\000\004\065" +
        "\u0129\001\002\000\052\002\ufff5\004\ufff5\005\ufff5\006\ufff5" +
        "\007\ufff5\010\ufff5\011\ufff5\012\ufff5\013\ufff5\015\ufff5\020" +
        "\ufff5\021\ufff5\022\ufff5\023\ufff5\024\ufff5\026\ufff5\027\ufff5" +
        "\030\ufff5\036\ufff5\100\ufff5\001\002\000\014\057\uffcf\071" +
        "\uffcf\073\uffcf\077\uffcf\100\uffcf\001\002\000\052\002\uffef" +
        "\004\uffef\005\uffef\006\uffef\007\uffef\010\uffef\011\uffef\012" +
        "\uffef\013\uffef\015\uffef\020\uffef\021\uffef\022\uffef\023\uffef" +
        "\024\uffef\026\uffef\027\uffef\030\uffef\036\uffef\100\uffef\001" +
        "\002\000\052\002\000\004\012\005\010\006\016\007\006" +
        "\010\045\011\030\012\051\013\022\015\032\020\040\021" +
        "\053\022\014\023\026\024\011\026\037\027\052\030\013" +
        "\036\041\100\025\001\002\000\052\002\ufff6\004\ufff6\005" +
        "\ufff6\006\ufff6\007\ufff6\010\ufff6\011\ufff6\012\ufff6\013\ufff6" +
        "\015\ufff6\020\ufff6\021\ufff6\022\ufff6\023\ufff6\024\ufff6\026" +
        "\ufff6\027\ufff6\030\ufff6\036\ufff6\100\ufff6\001\002\000\004" +
        "\065\u011d\001\002\000\052\002\ufff4\004\ufff4\005\ufff4\006" +

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"\uffff4\007\uffff4\010\uffff4\011\uffff4\012\uffff4\013\uffff4\015\uffff4" +
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"\000\010\051\u0135\052\u0134\077\u0136\001\002\000\004\066" +
"\u0130\001\002\000\004\067\u0131\001\002\000\034\012\051" +
"\013\022\015\032\020\040\021\053\022\014\023\026\024" +
"\011\025\061\027\052\030\013\036\041\100\025\001\002" +
"\000\036\012\051\013\022\015\032\020\040\021\053\022" +
"\014\023\026\024\011\025\061\027\052\030\013\036\041" +

```

"\070\u0133\100\025\001\002\000\062\002\uffb1\004\uffb1\005" +
"\uffb1\006\uffb1\007\uffb1\010\uffb1\011\uffb1\012\uffb1\013\uffb1" +
"\015\uffb1\016\uffb1\017\uffb1\020\uffb1\021\uffb1\022\uffb1\023" +
"\uffb1\024\uffb1\025\uffb1\026\uffb1\027\uffb1\030\uffb1\036\uffb1" +
"\070\uffb1\100\uffb1\001\002\000\004\066\uffb2\001\002\000" +
"\004\066\uffb3\001\002\000\036\031\105\032\117\033\102" +
"\041\107\042\115\044\106\063\122\065\103\071\113\100" +
"\116\101\110\102\104\103\120\104\112\001\002\000\042" +
"\043\134\044\127\045\133\046\137\047\130\050\132\053" +
"\140\054\141\055\131\056\124\057\136\060\135\061\125" +
"\062\142\064\126\066\uffb4\001\002\000\036\031\105\032" +
"\117\033\102\041\107\042\115\044\106\063\122\065\103" +
"\071\113\100\116\101\110\102\104\103\120\104\112\001" +
"\002\000\042\043\134\044\127\045\133\046\137\047\130" +
"\050\132\053\140\054\141\055\131\056\124\057\136\060" +
"\135\061\125\062\142\064\126\066\u013a\001\002\000\004" +
"\073\u013b\001\002\000\062\002\uffbf\004\uffbf\005\uffbf\006" +
"\uffbf\007\uffbf\010\uffbf\011\uffbf\012\uffbf\013\uffbf\015\uffbf" +
"\016\uffbf\017\uffbf\020\uffbf\021\uffbf\022\uffbf\023\uffbf\024" +
"\uffbf\025\uffbf\026\uffbf\027\uffbf\030\uffbf\036\uffbf\070\uffbf" +
"\100\uffbf\001\002\000\062\002\uffaf\004\uffaf\005\uffaf\006" +
"\uffaf\007\uffaf\010\uffaf\011\uffaf\012\uffaf\013\uffaf\015\uffaf" +
"\016\uffaf\017\uffaf\020\uffaf\021\uffaf\022\uffaf\023\uffaf\024" +
"\uffaf\025\uffaf\026\uffaf\027\uffaf\030\uffaf\036\uffaf\070\uffaf" +
"\100\uffaf\001\002\000\052\002\uffee\004\uffee\005\uffee\006" +
"\uffee\007\uffee\010\uffee\011\uffee\012\uffee\013\uffee\015\uffee" +
"\020\uffee\021\uffee\022\uffee\023\uffee\024\uffee\026\uffee\027" +
"\uffee\030\uffee\036\uffee\100\uffee\001\002" }};

```

/** Access to parse-action table. */

```
public short[][] action_table() {return _action_table;}
```

/** <code>reduce_goto</code> table. */

```

protected static final short[][] _reduce_table =
    unpackFromStrings(new String[] {
        "\000\u013b\000\054\002\042\003\017\004\043\007\046\010" +
        "\047\011\034\012\030\014\004\016\041\021\020\022\014" +
        "\023\022\025\045\026\003\027\023\030\033\031\016\034" +
        "\035\035\006\036\026\037\032\001\001\000\002\001\001" +
        "\000\002\001\001\000\002\001\001\000\002\001\001\000" +
        "\002\001\001\000\002\001\001\000\002\001\001\000\002" +
        "\001\001\000\002\001\001\000\002\001\001\000\002\001" +
        "\001\000\002\001\001\000\050\004\u0127\007\046\010\047" +
        "\011\034\012\030\014\004\016\041\021\020\022\014\023" +
        "\022\025\045\026\003\027\023\030\033\031\016\034\035" +
        "\035\006\036\026\037\032\001\001\000\002\001\001\000" +
        "\002\001\001\000\002\001\001\000\002\001\001\000\002" +
        "\001\001\000\002\001\001\000\002\001\001\000\002\001" +
        "\001\000\002\001\001\000\002\001\001\000\002\001\001" +
        "\000\002\001\001\000\002\001\001\000\002\001\001\000" +
        "\002\001\001\000\002\001\001\000\002\001\001\000\002" +
        "\001\001\000\002\001\001\000\002\001\001\000\002\001" +
        "\001\000\002\001\001\000\002\001\001\000\002\001\001" +
        "\000\002\001\001\000\002\001\001\000\002\001\001\000" +
        "\046\005\054\006\061\007\065\010\063\014\067\015\076" +
        "\021\071\022\057\023\055\025\074\026\075\027\066\030" +
        "\056\031\062\034\064\035\073\036\072\037\070\001\001" +

```

"\000\044\006\247\007\065\010\063\014\067\015\076\021" +
"\071\022\057\023\055\025\074\026\075\027\066\030\056" +
"\031\062\034\064\035\073\036\072\037\070\001\001\000" +
"\002\001\001\000\002\001\001\000\002\001\001\000\006" +
"\014\120\041\113\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\002\001\001\000\002\001\001" +
"\000\002\001\001\000\002\001\001\000\002\001\001\000" +
"\002\001\001\000\002\001\001\000\002\001\001\000\002" +
"\001\001\000\002\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\002\001\001\000\006\014\120" +
"\041\225\001\001\000\002\001\001\000\002\001\001\000" +
"\006\014\120\041\217\001\001\000\002\001\001\000\002" +
"\001\001\000\002\001\001\000\002\001\001\000\010\014" +
"\120\040\212\041\213\001\001\000\002\001\001\000\002" +
"\001\001\000\002\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\006\014\120\041\122\001\001" +
"\000\002\001\001\000\006\014\120\041\160\001\001\000" +
"\006\014\120\041\157\001\001\000\006\014\120\041\156" +
"\001\001\000\006\014\120\041\155\001\001\000\006\014" +
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"\151\001\001\000\006\014\120\041\150\001\001\000\006" +
"\014\120\041\147\001\001\000\006\014\120\041\146\001" +
"\001\000\006\014\120\041\145\001\001\000\006\014\120" +
"\041\144\001\001\000\006\014\120\041\143\001\001\000" +
"\006\014\120\041\142\001\001\000\002\001\001\000\002" +
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"\001\000\002\001\001\000\002\001\001\000\002\001\001" +
"\000\002\001\001\000\002\001\001\000\002\001\001\000" +
"\002\001\001\000\002\001\001\000\002\001\001\000\002" +
"\001\001\000\006\014\120\041\162\001\001\000\002\001" +
"\001\000\002\001\001\000\002\001\001\000\006\014\120" +
"\041\174\001\001\000\010\014\120\020\170\041\167\001" +
"\001\000\002\001\001\000\002\001\001\000\006\014\120" +
"\041\173\001\001\000\002\001\001\000\002\001\001\000" +
"\002\001\001\000\002\001\001\000\006\014\120\041\177" +
"\001\001\000\002\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\006\014\120\041\204\001\001" +
"\000\002\001\001\000\002\001\001\000\006\014\120\041" +
"\207\001\001\000\002\001\001\000\002\001\001\000\002" +
"\001\001\000\002\001\001\000\002\001\001\000\006\014" +
"\120\041\216\001\001\000\002\001\001\000\002\001\001" +
"\000\002\001\001\000\006\014\120\041\221\001\001\000" +
"\002\001\001\000\002\001\001\000\002\001\001\000\002" +
"\001\001\000\002\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\006\014\120\041\232\001\001" +
"\000\002\001\001\000\006\014\120\041\234\001\001\000" +
"\002\001\001\000\006\014\120\041\236\001\001\000\002" +
"\001\001\000\002\001\001\000\006\014\120\041\241\001" +
"\001\000\002\001\001\000\006\014\120\041\243\001\001" +
"\000\002\001\001\000\006\014\120\041\245\001\001\000" +
"\002\001\001\000\002\001\001\000\002\001\001\000\002" +
"\001\001\000\002\001\001\000\006\014\120\041\253\001" +
"\001\000\002\001\001\000\002\001\001\000\002\001\001" +
"\000\006\014\120\041\257\001\001\000\002\001\001\000" +
"\002\001\001\000\002\001\001\000\002\001\001\000\004" +
"\011\264\001\001\000\002\001\001\000\002\001\001\000" +

"\006\014\120\041\270\001\001\000\002\001\001\000\002" +
"\001\001\000\002\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\010\014\120\040\276\041\213" +
"\001\001\000\002\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\002\001\001\000\010\014\120" +
"\040\304\041\213\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\002\001\001\000\004\011\311" +
"\001\001\000\002\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\002\001\001\000\002\001\001" +
"\000\002\001\001\000\002\001\001\000\002\001\001\000" +
"\006\014\120\041\323\001\001\000\002\001\001\000\002" +
"\001\001\000\046\005\326\006\061\007\065\010\063\014" +
"\067\015\076\021\071\022\057\023\055\025\074\026\075" +
"\027\066\030\056\031\062\034\064\035\073\036\072\037" +
"\070\001\001\000\044\006\247\007\065\010\063\014\067" +
"\015\076\021\071\022\057\023\055\025\074\026\075\027" +
"\066\030\056\031\062\034\064\035\073\036\072\037\070" +
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"\001\000\002\001\001\000\002\001\001\000\002\001\001" +
"\000\010\011\336\013\340\017\337\001\001\000\002\001" +
"\001\000\002\001\001\000\002\001\001\000\006\011\336" +
"\013\346\001\001\000\002\001\001\000\046\005\344\006" +
"\061\007\065\010\063\014\067\015\076\021\071\022\057" +
"\023\055\025\074\026\075\027\066\030\056\031\062\034" +
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"\007\065\010\063\014\067\015\076\021\071\022\057\023" +
"\055\025\074\026\075\027\066\030\056\031\062\034\064" +
"\035\073\036\072\037\070\001\001\000\002\001\001\000" +
"\002\001\001\000\002\001\001\000\002\001\001\000\006" +
"\014\120\041\352\001\001\000\002\001\001\000\002\001" +
"\001\000\006\024\357\033\356\001\001\000\002\001\001" +
"\000\004\024\364\001\001\000\002\001\001\000\006\014" +
"\120\041\361\001\001\000\002\001\001\000\046\005\363" +
"\006\061\007\065\010\063\014\067\015\076\021\071\022" +
"\057\023\055\025\074\026\075\027\066\030\056\031\062" +
"\034\064\035\073\036\072\037\070\001\001\000\044\006" +
"\247\007\065\010\063\014\067\015\076\021\071\022\057" +
"\023\055\025\074\026\075\027\066\030\056\031\062\034" +
"\064\035\073\036\072\037\070\001\001\000\002\001\001" +
"\000\002\001\001\000\046\005\367\006\061\007\065\010" +
"\063\014\067\015\076\021\071\022\057\023\055\025\074" +
"\026\075\027\066\030\056\031\062\034\064\035\073\036" +
"\072\037\070\001\001\000\044\006\247\007\065\010\063" +
"\014\067\015\076\021\071\022\057\023\055\025\074\026" +
"\075\027\066\030\056\031\062\034\064\035\073\036\072" +
"\037\070\001\001\000\002\001\001\000\010\011\336\013" +
"\340\017\372\001\001\000\002\001\001\000\002\001\001" +
"\000\046\005\375\006\061\007\065\010\063\014\067\015" +
"\076\021\071\022\057\023\055\025\074\026\075\027\066" +
"\030\056\031\062\034\064\035\073\036\072\037\070\001" +
"\001\000\044\006\247\007\065\010\063\014\067\015\076" +
"\021\071\022\057\023\055\025\074\026\075\027\066\030" +
"\056\031\062\034\064\035\073\036\072\037\070\001\001" +
"\000\002\001\001\000\002\001\001\000\002\001\001\000" +
"\002\001\001\000\002\001\001\000\006\014\120\041\0107" +
"\001\001\000\006\014\120\041\0105\001\001\000\002\001" +
"\001\000\002\001\001\000\002\001\001\000\002\001\001" +

```

"\000\006\014\120\041\u010d\001\001\000\006\014\120\041" +
"\u010b\001\001\000\002\001\001\000\002\001\001\000\002" +
"\001\001\000\002\001\001\000\006\014\120\041\u0110\001" +
"\001\000\002\001\001\000\002\001\001\000\002\001\001" +
"\000\002\001\001\000\002\001\001\000\006\014\120\041" +
"\u0116\001\001\000\002\001\001\000\002\001\001\000\006" +
"\014\120\041\u0119\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\006\014\120\041\u011d\001\001" +
"\000\002\001\001\000\002\001\001\000\046\005\u0120\006" +
"\061\007\065\010\063\014\067\015\076\021\071\022\057" +
"\023\055\025\074\026\075\027\066\030\056\031\062\034" +
"\064\035\073\036\072\037\070\001\001\000\044\006\0247" +
"\007\065\010\063\014\067\015\076\021\071\022\057\023" +
"\055\025\074\026\075\027\066\030\056\031\062\034\064" +
"\035\073\036\072\037\070\001\001\000\002\001\001\000" +
"\004\022\u0123\001\001\000\002\001\001\000\046\005\u0125" +
"\006\061\007\065\010\063\014\067\015\076\021\071\022" +
"\057\023\055\025\074\026\075\027\066\030\056\031\062" +
"\034\064\035\073\036\072\037\070\001\001\000\044\006" +
"\0247\007\065\010\063\014\067\015\076\021\071\022\057" +
"\023\055\025\074\026\075\027\066\030\056\031\062\034" +
"\064\035\073\036\072\037\070\001\001\000\002\001\001" +
"\000\002\001\001\000\004\010\u012a\001\001\000\002\001" +
"\001\000\006\014\120\041\u012b\001\001\000\002\001\001" +
"\000\004\032\u012e\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001\000\046\005\u0131\006\061\007\065" +
"\010\063\014\067\015\076\021\071\022\057\023\055\025" +
"\074\026\075\027\066\030\056\031\062\034\064\035\073" +
"\036\072\037\070\001\001\000\044\006\0247\007\065\010" +
"\063\014\067\015\076\021\071\022\057\023\055\025\074" +
"\026\075\027\066\030\056\031\062\034\064\035\073\036" +
"\072\037\070\001\001\000\002\001\001\000\002\001\001" +
"\000\002\001\001\000\006\014\120\041\u0136\001\001\000" +
"\002\001\001\000\006\014\120\041\u0138\001\001\000\002" +
"\001\001\000\002\001\001\000\002\001\001\000\002\001" +
"\001\000\002\001\001" }};

```

```

/** Access to <code>reduce_goto</code> table. */
public short[][] reduce_table() {return _reduce_table;}

```

```

/** Instance of action encapsulation class. */
protected CUP$Parser$actions action_obj;

```

```

/** Action encapsulation object initializer. */
protected void init_actions()
{
    action_obj = new CUP$Parser$actions(this);
}

```

```

/** Invoke a user supplied parse action. */
public java_cup.runtime.Symbol do_action(
    int          act_num,
    java_cup.runtime.lr_parser parser,
    java.util.Stack stack,
    int          top)
    throws java.lang.Exception
{

```

```

/* call code in generated class */
return action_obj.CUP$Parser$do_action(act_num, parser, stack, top);
}

/** Indicates start state. */
public int start_state() {return 0;}
/** Indicates start production. */
public int start_production() {return 0;}

/** <code>EOF</code> Symbol index. */
public int EOF_sym() {return 0;}

/** <code>error</code> Symbol index. */
public int error_sym() {return 1;}

public LinkedList<Instruccion> AST;

public void syntax_error(Symbol s){
    System.err.println("Error Sintáctico en la Línea " + s.left + " Columna " + s.right + ". No se
esperaba este componente: " +s.value);
    Errores.agregar("Sintáctico", "No se esperaba: " + s.value, s.left, s.right);
}

public void unrecovered_syntax_error(Symbol s) throws java.lang.Exception{
    System.err.println("Error sintáctico irrecuperable en la Línea " + s.left + " Columna " + s.right + ".
Componente " + s.value + " no reconocido.");
    Errores.agregar("Sintáctico Irrecuperable", "Componente no reconocido: " + s.value, s.left,
s.right);
}

/** Cup generated class to encapsulate user supplied action code.*/
@SuppressWarnings({"rawtypes", "unchecked", "unused"})
class CUP$Parser$actions {
    private final Parser parser;

    /** Constructor */
    CUP$Parser$actions(Parser parser) {
        this.parser = parser;
    }

    /** Method 0 with the actual generated action code for actions 0 to 300. */
    public final java_cup.runtime.Symbol CUP$Parser$do_action_part000000000(
        int CUP$Parser$act_num,
        java_cup.runtime.lr_parser CUP$Parser$parser,
        java.util.Stack CUP$Parser$stack,
        int CUP$Parser$top)
        throws java.lang.Exception
    {
        /* Symbol object for return from actions */
        java_cup.runtime.Symbol CUP$Parser$result;

        /* select the action based on the action number */
        switch (CUP$Parser$act_num)
        {

```

```

/*.....*/
case 0: // $START ::= ini EOF
{
    Object RESULT =null;
    int start_valleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
    int start_valright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
    LinkedList<Instruccion> start_val =
(LinkedList<Instruccion>)((java_cup.runtime.Symbol) CUP$Parser$stack.elementAt(CUP$Parser$stop-
1)).value;
    RESULT = start_val;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("$START",0,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
/* ACCEPT */
CUP$Parser$parser.done_parsing();
return CUP$Parser$result;

/*.....*/
case 1: // ini ::= instrucciones_globales
{
    LinkedList<Instruccion> RESULT =null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    LinkedList<Instruccion> a = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    AST = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("ini",0,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 2: // instrucciones_globales ::= instrucciones_globales instruccion_global
{
    LinkedList<Instruccion> RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
    LinkedList<Instruccion> a = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    if(b!=null) a.add(b); RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instrucciones_globales",1,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/

```

```

case 3: // instrucciones_globales ::= instruccion_global
{
    LinkedList<Instruccion> RESULT = null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    LinkedList<Instruccion> l = new LinkedList<>(); if(a!=null) l.add(a); RESULT = l;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instrucciones_globales",1,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 4: // instruccion_global ::= declaracion
{
    Instruccion RESULT = null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 5: // instruccion_global ::= declaracion_vector
{
    Instruccion RESULT = null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 6: // instruccion_global ::= declaracion_lista
{
    Instruccion RESULT = null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
}

```

```

return CUP$Parser$result;

/*.....*/
case 7: // instruccion_global ::= funcion
{
    Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 8: // instruccion_global ::= start_with
{
    Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 9: // instruccion_global ::= asignacion
{
    Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 10: // instruccion_global ::= modificacion_vector
{
    Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;

```

```

        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 11: // instruccion_global ::= impresion
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 12: // instruccion_global ::= sentencia_if
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 13: // instruccion_global ::= sentencia_switch
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 14: // instruccion_global ::= sentencia_while
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;

```

```

        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 15: // instruccion_global ::= sentencia_do_while
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 16: // instruccion_global ::= sentencia_for
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 17: // instruccion_global ::= sentencia_break
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 18: // instruccion_global ::= sentencia_continue
    {

```

```

        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 19: // instruccion_global ::= llamada_funcion PTCOMA
    {
        Instruccion RESULT =null;
        int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 20: // instruccion_global ::= metodo_lista PTCOMA
    {
        Instruccion RESULT =null;
        int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion_global",2,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 21: // start_with ::= START_WITH ID PAR_A PAR_C PTCOMA
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-3)).value;
        RESULT = new StartWith(id, idleft, idright);
    }

```

```

        CUP$Parser$result = parser.getSymbolFactory().newSymbol("start_with",12,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 22: // funcion ::= tipo ID PAR_A lista_parametros PAR_C LLAVE_A instrucciones LLAVE_C
    {
        Instruccion RESULT =null;
        int tleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-7)).left;
        int tright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-7)).right;
        String t = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-7)).value;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-6)).value;
        int pleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).left;
        int pright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).right;
        LinkedList<Instruccion> p = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-4)).value;
        int bloqueleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int bloqueright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        LinkedList<Instruccion> bloque =
(LinkedList<Instruccion>)((java_cup.runtime.Symbol) CUP$Parser$stack.elementAt(CUP$Parser$top-
1)).value;
        RESULT = new Funcion(t, id, p, bloque, tleft, tright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("funcion",8,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-7)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 23: // funcion ::= VOID ID PAR_A lista_parametros PAR_C LLAVE_A instrucciones LLAVE_C
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-6)).value;
        int pleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).left;
        int pright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).right;

```

```

        LinkedList<Instruccion> p = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-4)).value;
        int bloqueleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int bloqueright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        LinkedList<Instruccion> bloque =
(LinkedList<Instruccion>)((java_cup.runtime.Symbol) CUP$Parser$stack.elementAt(CUP$Parser$top-
1)).value;
        RESULT = new Funcion("void", id, p, bloque, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("funcion",8,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-7)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 24: // lista_parametros ::= lista_parametros COMA parametro
    {
        LinkedList<Instruccion> RESULT =null;
        int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-
2)).left;
        int lright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
        LinkedList<Instruccion> l = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
        int pleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int pright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion p = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        l.add(p); RESULT = l;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_parametros",13,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 25: // lista_parametros ::= parametro
    {
        LinkedList<Instruccion> RESULT =null;
        int pleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int pright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion p = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        LinkedList<Instruccion> l = new LinkedList<>(); l.add(p); RESULT = l;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_parametros",13,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 26: // lista_parametros ::=
    {
        LinkedList<Instruccion> RESULT =null;
        RESULT = new LinkedList<Instruccion>();

```

```

        CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_parametros",13,
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 27: // parametro ::= tipo ID
    {
        Instruccion RESULT =null;
        int tleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int tright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        String t = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        int idleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).left;
        int idright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).right;
        String id = (String)((java_cup.runtime.Symbol) CUP$Parser$stack.peak()).value;
        RESULT = new Declaracion(id, t, null, tleft, tright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("parametro",9,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 28: // instrucciones ::= instrucciones instruccion
    {
        LinkedList<Instruccion> RESULT =null;
        int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        LinkedList<Instruccion> a = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).left;
        int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).right;
        Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peak()).value;
        if(b!=null) a.add(b); RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instrucciones",3,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 29: // instrucciones ::= instruccion
    {
        LinkedList<Instruccion> RESULT =null;
        int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).left;
        int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).right;
        Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peak()).value;
        LinkedList<Instruccion> l = new LinkedList<>(); if(b!=null) l.add(b); RESULT = l;

```

```

        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instrucciones",3,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 30: // instruccion ::= declaracion
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 31: // instruccion ::= declaracion_vector
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 32: // instruccion ::= declaracion_lista
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 33: // instruccion ::= asignacion
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;

```

```

        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
case 34: // instruccion ::= modificacion_vector
{
    Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
case 35: // instruccion ::= impresion
{
    Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
case 36: // instruccion ::= sentencia_if
{
    Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
case 37: // instruccion ::= sentencia_switch
{

```

```

        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 38: // instruccion ::= sentencia_while
{
    Instruccion RESULT =null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 39: // instruccion ::= sentencia_do_while
{
    Instruccion RESULT =null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 40: // instruccion ::= sentencia_for
{
    Instruccion RESULT =null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

```

```

/*.....*/
case 41: // instruccion ::= sentencia_break
{
    Instruccion RESULT =null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 42: // instruccion ::= sentencia_continue
{
    Instruccion RESULT =null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 43: // instruccion ::= sentencia_return
{
    Instruccion RESULT =null;
    int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = a;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 44: // instruccion ::= llamada_funcion PTCOMA
{
    Instruccion RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
    RESULT = a;

```

```

        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 45: // instruccion ::= metodo_lista PTCOMA
    {
        Instruccion RESULT =null;
        int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = a;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("instruccion",4,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 46: // declaracion ::= VAR ID DOSPTOS tipo IGUAL expresion PTCOMA
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-5)).value;
        int tleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).left;
        int tright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).right;
        String t = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-3)).value;
        int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = new Declaracion(id, t, e, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("declaracion",5,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 47: // declaracion ::= VAR ID DOSPTOS tipo PTCOMA
    {
        Instruccion RESULT =null;

```

```

        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-3)).value;
        int tleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int tright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        String t = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = new Declaracion(id, t, null, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("declaracion",5,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 48: // tipo ::= INT
    {
        String RESULT =null;
        RESULT = "int";
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("tipo",7,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 49: // tipo ::= DOUBLE
    {
        String RESULT =null;
        RESULT = "double";
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("tipo",7,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 50: // tipo ::= BOOL
    {
        String RESULT =null;
        RESULT = "bool";
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("tipo",7,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 51: // tipo ::= CHAR
    {
        String RESULT =null;
        RESULT = "char";

```

```

        CUP$Parser$result = parser.getSymbolFactory().newSymbol("tipo",7,
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 52: // tipo ::= STRING
    {
        String RESULT =null;
        RESULT = "string";
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("tipo",7,
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 53: // asignacion ::= ID IGUAL expresion PTCOMA
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-3)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-3)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-3)).value;
        int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
        int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
        RESULT = new Asignacion(id, e, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("asignacion",6,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 54: // asignacion ::= ID MASMAS PTCOMA
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
        RESULT = new Asignacion(id, new Aritmetica(new AccesoVar(id, idleft, idright), new
Dato("1", "int", 0, 0), Operacion.Tipo_Operacion.SUMA, idleft, idright), idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("asignacion",6,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

```

```

/*.....*/
case 55: // asignacion ::= ID MENOSMENOS PTCOMA
{
    Instruccion RESULT =null;
    int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).left;
    int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
    String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
    RESULT = new Asignacion(id, new Aritmetica(new AccesoVar(id, idleft, idright), new
Dato("1", "int", 0, 0), Operacion.Tipo_Operacion.RESTA, idleft, idright), idleft, idright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("asignacion",6,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 56: // declaracion_vector ::= VAR ID DOSPTOS tipo COR_IZQ COR_DER IGUAL COR_IZQ
lista_valores COR_DER PTCOMA
{
    Instruccion RESULT =null;
    int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-9)).left;
    int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-9)).right;
    String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-9)).value;
    int tleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-7)).left;
    int tright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-7)).right;
    String t = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-7)).value;
    int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-
2)).left;
    int lright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
    LinkedList<Instruccion> l = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
    RESULT = new DeclaracionVector(id, t, 1, l, idleft, idright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("declaracion_vector",26,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-10)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 57: // declaracion_vector ::= VAR ID DOSPTOS tipo COR_IZQ COR_DER COR_IZQ COR_DER
IGUAL COR_IZQ lista_valores COR_DER PTCOMA
{
    Instruccion RESULT =null;
    int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-11)).left;

```

```

        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-11)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-11)).value;
        int tleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-9)).left;
        int tright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-9)).right;
        String t = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-9)).value;
        int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-
2)).left;
        int lright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
        LinkedList<Instruccion> l = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
        RESULT = new DeclaracionVector(id, t, 2, l, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("declaracion_vector",26,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-12)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 58: // lista_valores ::= lista_valores COMA expresion
    {
        LinkedList<Instruccion> RESULT =null;
        int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-
2)).left;
        int lright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
        LinkedList<Instruccion> l = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
        int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        l.add(e); RESULT = l;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_valores",30,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 59: // lista_valores ::= expresion
    {
        LinkedList<Instruccion> RESULT =null;
        int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        LinkedList<Instruccion> l = new LinkedList<>(); l.add(e); RESULT = l;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_valores",30,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }

```

```

return CUP$Parser$result;

/*.....*/
case 60: // modificacion_vector ::= ID COR_IZQ expresion COR_DER IGUAL expresion PTCOMA
{
    Instruccion RESULT =null;
    int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).left;
    int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).right;
    String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-6)).value;
    int indleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).left;
    int indright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).right;
    Instruccion ind = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-4)).value;
    int valleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
    int valright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
    Instruccion val = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
    RESULT = new ModificacionVector(id, ind, null, val, idleft, idright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("modificacion_vector",27,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 61: // modificacion_vector ::= ID COR_IZQ expresion COR_DER COR_IZQ expresion
COR_DER IGUAL expresion PTCOMA
{
    Instruccion RESULT =null;
    int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-9)).left;
    int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-9)).right;
    String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-9)).value;
    int ileft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-
7)).left;
    int iright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-7)).right;
    Instruccion i = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-7)).value;
    int jleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-
4)).left;
    int jright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).right;
    Instruccion j = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-4)).value;
    int valleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;

```

```

        int valright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion val = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = new ModificacionVector(id, i, j, val, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("modificacion_vector",27,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-9)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 62: // declaracion_lista ::= LIST MENOR tipo MAYOR ID IGUAL NEW LIST PAR_A PAR_C
PTCOMA
    {
        Instruccion RESULT =null;
        int tleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-8)).left;
        int tright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-8)).right;
        String t = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-8)).value;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-6)).value;
        RESULT = new DeclaracionLista(id, t, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("declaracion_lista",28,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-10)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 63: // metodo_lista ::= ID PUNTO APPEND PAR_A expresion PAR_C
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-5)).value;
        int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = new MetodoLista(id, "append", e, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("metodo_lista",29,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

```

```

/*.....*/
case 64: // metodo_lista ::= ID PUNTO REMOVE PAR_A expresion PAR_C
{
    Instruccion RESULT =null;
    int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).left;
    int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).right;
    String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-5)).value;
    int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
    int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
    RESULT = new MetodoLista(id, "remove", e, idleft, idright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("metodo_lista",29,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 65: // impresion ::= PRINT PAR_A expresion PAR_C PTCOMA
{
    Instruccion RESULT =null;
    int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    RESULT = new Print(e, false, eleft, eright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("impresion",15,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 66: // impresion ::= PRINTLN PAR_A expresion PAR_C PTCOMA
{
    Instruccion RESULT =null;
    int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    RESULT = new Print(e, true, eleft, eright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("impresion",15,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

```

```

/*.....*/
case 67: // sentencia_if ::= IF PAR_A expresion PAR_C LLAVE_A instrucciones LLAVE_C
{
    Instruccion RESULT =null;
    int condleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-4)).left;
    int condright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-4)).right;
    Instruccion cond = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-4)).value;
    int i1left =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
    int i1right =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
    LinkedList<Instruccion> i1 = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
    RESULT = new If(cond, i1, null, condleft, condright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_if",16,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-6)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 68: // sentencia_if ::= IF PAR_A expresion PAR_C LLAVE_A instrucciones LLAVE_C ELSE
LLAVE_A instrucciones LLAVE_C
{
    Instruccion RESULT =null;
    int condleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-8)).left;
    int condright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-8)).right;
    Instruccion cond = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-8)).value;
    int i1left =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-5)).left;
    int i1right =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-5)).right;
    LinkedList<Instruccion> i1 = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-5)).value;
    int i2left =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
    int i2right =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
    LinkedList<Instruccion> i2 = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
    RESULT = new If(cond, i1, i2, condleft, condright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_if",16,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-10)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 69: // sentencia_if ::= IF PAR_A expresion PAR_C LLAVE_A instrucciones LLAVE_C ELSE
sentencia_if

```

```

        {
            Instruccion RESULT =null;
            int condleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-6)).left;
            int condright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-6)).right;
            Instruccion cond = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-6)).value;
            int i1left =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-3)).left;
            int i1right =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-3)).right;
            LinkedList<Instruccion> i1 = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-3)).value;
            int i2left = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
            int i2right = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
            Instruccion i2 = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
            LinkedList<Instruccion> l = new LinkedList<>(); l.add(i2); RESULT = new If(cond, i1, l,
condleft, condright);
            CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_if",16,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-8)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
        }
        return CUP$Parser$result;

/*.....*/
case 70: // sentencia_switch ::= SWITCH PAR_A expresion PAR_C LLAVE_A lista_casos LLAVE_C
{
    Instruccion RESULT =null;
    int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-4)).left;
    int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-4)).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-4)).value;
    int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-
1)).left;
    int lright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
    LinkedList<Instruccion> l = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
    RESULT = new Switch(e, l, eleft, eright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_switch",17,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-6)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 71: // lista_casos ::= lista_casos caso
{
    LinkedList<Instruccion> RESULT =null;
    int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-
1)).left;
    int lright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;

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```

        LinkedList<Instruccion> l = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
        int cleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int cright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion c = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        if(c!=null) l.add(c); RESULT = l;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_casos",25,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 72: // lista_casos ::= caso
{
    LinkedList<Instruccion> RESULT =null;
        int cleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int cright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion c = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        LinkedList<Instruccion> l = new LinkedList<>(); if(c!=null) l.add(c); RESULT = l;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_casos",25,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 73: // caso ::= CASE expresion DOSPTOS instrucciones
{
    Instruccion RESULT =null;
        int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).left;
        int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
        int ileft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int iright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        LinkedList<Instruccion> i = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = new Caso(e, i, eleft, eright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("caso",18,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 74: // caso ::= DEFAULT DOSPTOS instrucciones
{
    Instruccion RESULT =null;
        int ileft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int iright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        LinkedList<Instruccion> i = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;

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        RESULT = new Caso(null, i, ileft,  iright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("caso",18,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 75: // sentencia_while ::= WHILE PAR_A expresion PAR_C LLAVE_A instrucciones LLAVE_C
    {
        Instruccion RESULT =null;
        int condleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-4)).left;
        int condright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-4)).right;
        Instruccion cond = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-4)).value;
        int ileft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-
1)).left;
        int  iright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
        LinkedList<Instruccion> i = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
        RESULT = new While(cond, i, condleft, condright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_while",19,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-6)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 76: // sentencia_do_while ::= DO LLAVE_A instrucciones LLAVE_C WHILE PAR_A expresion
PAR_C PTCOMA
    {
        Instruccion RESULT =null;
        int ileft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-
6)).left;
        int  iright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-6)).right;
        LinkedList<Instruccion> i = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-6)).value;
        int condleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).left;
        int condright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
        Instruccion cond = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
        RESULT = new DoWhile(cond, i, condleft, condright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_do_while",20,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-8)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 77: // actualizacion_for ::= ID IGUAL expresion
    {

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```

        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
        int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = new Asignacion(id, e, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("actualizacion_for",24,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 78: // actualizacion_for ::= ID MASMAS
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
        RESULT = new Asignacion(id, new Aritmetica(new AccesoVar(id,0,0), new
Dato("1","int",0,0), Operacion.Tipo_Operacion.SUMA, 0,0), idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("actualizacion_for",24,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 79: // actualizacion_for ::= ID MENOSMENOS
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
        RESULT = new Asignacion(id, new Aritmetica(new AccesoVar(id,0,0), new
Dato("1","int",0,0), Operacion.Tipo_Operacion.RESTA, 0,0), idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("actualizacion_for",24,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 80: // sentencia_for ::= FOR PAR_A asignacion expresion PTCOMA actualizacion_for PAR_C
LLAVE_A instrucciones LLAVE_C

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```

        {
            Instruccion RESULT =null;
            int inileft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-7)).left;
            int iniright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-7)).right;
            Instruccion ini = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-7)).value;
            int condleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).left;
            int condright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).right;
            Instruccion cond = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-6)).value;
            int incleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).left;
            int incright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).right;
            Instruccion inc = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-4)).value;
            int ileft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-
1)).left;
            int ibrigh =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
            LinkedList<Instruccion> i = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
            RESULT = new For(ini, cond, inc, i, inileft, iniright);
            CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_for",21,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-9)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
        }
        return CUP$Parser$result;

/*.....*/
case 81: // sentencia_break ::= BREAK PTCOMA
{
    Instruccion RESULT =null;
    int bleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
    int bright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
    Object b = (Object)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
    RESULT = new Break(bleft, bright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_break",22,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 82: // sentencia_continue ::= CONTINUE PTCOMA
{
    Instruccion RESULT =null;
    int cleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;

```

```

        int cright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Object c = (Object)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = new Continue(cleft, cright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_continue",23,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 83: // sentencia_return ::= RETURN expresion PTCOMA
{
    Instruccion RESULT =null;
        int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = new Return(e, eleft, eright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_return",11,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 84: // sentencia_return ::= RETURN PTCOMA
{
    Instruccion RESULT =null;
        RESULT = new Return(null, 0, 0);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("sentencia_return",11,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 85: // expresion ::= MENOS expresion
{
    Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = new Aritmetica(a, Operacion.Tipo_Operacion.NEGACION, aleft, aright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 86: // expresion ::= PAR_A INT PAR_C expresion
{

```

```

        Instruccion RESULT =null;
        int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = new Casteo("int", e, eleft, eright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 87: // expresion ::= PAR_A DOUBLE PAR_C expresion
{
    Instruccion RESULT =null;
    int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Casteo("double", e, eleft, eright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 88: // expresion ::= PAR_A CHAR PAR_C expresion
{
    Instruccion RESULT =null;
    int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Casteo("char", e, eleft, eright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 89: // expresion ::= PAR_A STRING PAR_C expresion
{
    Instruccion RESULT =null;
    int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Casteo("string", e, eleft, eright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

```

```

/*.....*/
case 90: // expresion ::= PAR_A BOOL PAR_C expresion
{
    Instruccion RESULT = null;
    int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Casteo("bool", e, eleft, eright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 91: // expresion ::= expresion MAS expresion
{
    Instruccion RESULT = null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Aritmetica(a, b, Operacion.Tipo_Operacion.SUMA, aleft, aright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 92: // expresion ::= expresion MENOS expresion
{
    Instruccion RESULT = null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Aritmetica(a, b, Operacion.Tipo_Operacion.RESTA, aleft, aright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

```

```

/*.....*/
case 93: // expresion ::= expresion POR expresion
{
    Instruccion RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Aritmetica(a, b, Operacion.Tipo_Operacion.MULTIPLICACION, aleft,
aright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 94: // expresion ::= expresion DIV expresion
{
    Instruccion RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Aritmetica(a, b, Operacion.Tipo_Operacion.DIVISION, aleft, aright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 95: // expresion ::= expresion POTENCIA expresion
{
    Instruccion RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;

```

```

        RESULT = new Aritmetica(a, b, Operacion.Tipo_Operacion.POTENCIA, aleft, aright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 96: // expresion ::= expresion MOD expresion
    {
        Instruccion RESULT =null;
        int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
        int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
        int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).left;
        int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).right;
        Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peak()).value;
        RESULT = new Aritmetica(a, b, Operacion.Tipo_Operacion.MODULO, aleft, aright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 97: // expresion ::= expresion IGUALIGUAL expresion
    {
        Instruccion RESULT =null;
        int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
        int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
        int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).left;
        int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).right;
        Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peak()).value;
        RESULT = new Logica(a, b, Operacion.Tipo_Operacion.IGUALIGUAL, aleft, aright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 98: // expresion ::= expresion DIFERENTE expresion
    {
        Instruccion RESULT =null;
        int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
        int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;

```

```

        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
        int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = new Logica(a, b, Operacion.Tipo_Operacion.DIFERENTE, aleft, aright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 99: // expresion ::= expresion MENOR expresion
{
    Instruccion RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Logica(a, b, Operacion.Tipo_Operacion.MENOR, aleft, aright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
    return CUP$Parser$result;

/*.....*/
case 100: // expresion ::= expresion MAYOR expresion
{
    Instruccion RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Logica(a, b, Operacion.Tipo_Operacion.MAYOR, aleft, aright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
    return CUP$Parser$result;

/*.....*/
case 101: // expresion ::= expresion MENORIGUAL expresion

```

```

{
    Instruccion RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Logica(a, b, Operacion.Tipo_Operacion.MENORIGUAL, aleft, aright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 102: // expresion ::= expresion MAYORIGUAL expresion
{
    Instruccion RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Logica(a, b, Operacion.Tipo_Operacion.MAYORIGUAL, aleft, aright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 103: // expresion ::= expresion AND expresion
{
    Instruccion RESULT =null;
    int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
    int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
    Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
    int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    RESULT = new Logica(a, b, Operacion.Tipo_Operacion.AND, aleft, aright);

```

```

        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 104: // expresion ::= expresion OR expresion
    {
        Instruccion RESULT =null;
        int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
        int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
        int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = new Logica(a, b, Operacion.Tipo_Operacion.OR, aleft, aright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 105: // expresion ::= expresion XOR expresion
    {
        Instruccion RESULT =null;
        int aleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).left;
        int aright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
        int bleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int bright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion b = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = new Logica(a, b, Operacion.Tipo_Operacion.XOR, aleft, aright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 106: // expresion ::= NOT expresion
    {
        Instruccion RESULT =null;
        int aleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int aright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion a = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
        RESULT = new Logica(a, Operacion.Tipo_Operacion.NOT, aleft, aright);
    }

```

```

        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 107: // expresion ::= PAR_A expresion PAR_C
    {
        Instruccion RESULT =null;
        int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = e;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 108: // expresion ::= ID
    {
        Instruccion RESULT =null;
        int idleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int idright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        String id = (String)((java_cup.runtime.Symbol) CUP$Parser$stack.peek()).value;
        RESULT = new AccesoVar(id, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 109: // expresion ::= ENTERO
    {
        Instruccion RESULT =null;
        int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        String e = (String)((java_cup.runtime.Symbol) CUP$Parser$stack.peek()).value;
        RESULT = new Dato(e, "int", eleft, eright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 110: // expresion ::= DECIMAL
    {
        Instruccion RESULT =null;
        int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;

```

```

        String e = (String)((java_cup.runtime.Symbol) CUP$Parser$stack.peak()).value;
        RESULT = new Dato(e, "double", eleft, eright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 111: // expresion ::= LIT_STRING
    {
        Instruccion RESULT =null;
        int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).left;
        int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).right;
        String e = (String)((java_cup.runtime.Symbol) CUP$Parser$stack.peak()).value;
        RESULT = new Dato(e, "string", eleft, eright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 112: // expresion ::= LIT_CHAR
    {
        Instruccion RESULT =null;
        int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).left;
        int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peak()).right;
        String e = (String)((java_cup.runtime.Symbol) CUP$Parser$stack.peak()).value;
        RESULT = new Dato(e, "char", eleft, eright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 113: // expresion ::= TRUE
    {
        Instruccion RESULT =null;
        RESULT = new Dato("true", "bool", 0, 0);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 114: // expresion ::= FALSE
    {
        Instruccion RESULT =null;
        RESULT = new Dato("false", "bool", 0, 0);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peak()), RESULT);
    }
    return CUP$Parser$result;

```

```

/*.....*/
case 115: // expresion ::= COR_IZQ lista_valores COR_DER
{
    Instruccion RESULT =null;
    int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-
1)).left;
    int lright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
    LinkedList<Instruccion> l = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
    RESULT = new VectorLiteral(l, lleft, lright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 116: // expresion ::= ID COR_IZQ expresion COR_DER
{
    Instruccion RESULT =null;
    int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).left;
    int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).right;
    String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-3)).value;
    int ileft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-
1)).left;
    int iright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
    Instruccion i = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
    RESULT = new AccesoVector(id, i, null, idleft, idright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 117: // expresion ::= ID COR_IZQ expresion COR_DER COR_IZQ expresion COR_DER
{
    Instruccion RESULT =null;
    int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).left;
    int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-6)).right;
    String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-6)).value;
    int ileft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-
4)).left;
    int iright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-4)).right;
    Instruccion i = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-4)).value;

```

```

        int jleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-
1)).left;
        int jright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
        Instruccion j = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
        RESULT = new AccesoVector(id, i, j, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-6)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

/*.....*/
case 118: // expresion ::= ROUND PAR_A expresion PAR_C
{
    Instruccion RESULT =null;
    int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
    int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
    RESULT = new Nativa(e, "round", eleft, eright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
    return CUP$Parser$result;

/*.....*/
case 119: // expresion ::= LENGTH PAR_A expresion PAR_C
{
    Instruccion RESULT =null;
    int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
    int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;
    RESULT = new Nativa(e, "length", eleft, eright);
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
    return CUP$Parser$result;

/*.....*/
case 120: // expresion ::= TOSTRING PAR_A expresion PAR_C
{
    Instruccion RESULT =null;
    int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).left;
    int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$stop-1)).value;

```

```

        RESULT = new Nativa(e, "toString", eleft, eright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 121: // expresion ::= ID PUNTO FIND PAR_A expresion PAR_C
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-5)).value;
        int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = new FindVector(id, e, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 122: // expresion ::= ID PUNTO REMOVE PAR_A expresion PAR_C
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-5)).value;
        int eleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).left;
        int eright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = new MetodoLista(id, "remove", e, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-5)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 123: // expresion ::= llamada_funcion
    {
        Instruccion RESULT =null;

```

```

        int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int lright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion l = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        RESULT = l;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("expresion",31,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 124: // llamada_funcion ::= ID PAR_A lista_argumentos PAR_C
    {
        Instruccion RESULT =null;
        int idleft =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).left;
        int idright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)).right;
        String id = (String)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-3)).value;
        int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-
1)).left;
        int lright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-1)).right;
        LinkedList<Instruccion> l = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-1)).value;
        RESULT = new LlamadaFuncion(id, l, idleft, idright);
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("llamada_funcion",10,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-3)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 125: // lista_argumentos ::= lista_argumentos COMA expresion
    {
        LinkedList<Instruccion> RESULT =null;
        int lleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-
2)).left;
        int lright =
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)).right;
        LinkedList<Instruccion> l = (LinkedList<Instruccion>)((java_cup.runtime.Symbol)
CUP$Parser$stack.elementAt(CUP$Parser$top-2)).value;
        int leleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
        int leright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
        Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
        l.add(e); RESULT = l;
        CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_argumentos",14,
((java_cup.runtime.Symbol)CUP$Parser$stack.elementAt(CUP$Parser$top-2)),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
    }
    return CUP$Parser$result;

    /*.....*/
    case 126: // lista_argumentos ::= expresion

```

```

{
    LinkedList<Instruccion> RESULT = null;
    int eleft = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).left;
    int eright = ((java_cup.runtime.Symbol)CUP$Parser$stack.peek()).right;
    Instruccion e = (Instruccion)((java_cup.runtime.Symbol)
CUP$Parser$stack.peek()).value;
    LinkedList<Instruccion> l = new LinkedList<>(); l.add(e); RESULT = l;
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_argumentos",14,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()),
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
case 127: // lista_argumentos ::=
{
    LinkedList<Instruccion> RESULT = null;
    RESULT = new LinkedList<Instruccion>();
    CUP$Parser$result = parser.getSymbolFactory().newSymbol("lista_argumentos",14,
((java_cup.runtime.Symbol)CUP$Parser$stack.peek()), RESULT);
}
return CUP$Parser$result;

/*.....*/
default:
    throw new Exception(
        "Invalid action number "+CUP$Parser$act_num+"found in internal parse table");
}
} /* end of method */

/** Method splitting the generated action code into several parts. */
public final java_cup.runtime.Symbol CUP$Parser$do_action(
    int CUP$Parser$act_num,
    java_cup.runtime.lr_parser CUP$Parser$parser,
    java.util.Stack CUP$Parser$stack,
    int CUP$Parser$stop)
    throws java.lang.Exception
{
    return CUP$Parser$do_action_part00000000(
        CUP$Parser$act_num,
        CUP$Parser$parser,
        CUP$Parser$stack,
        CUP$Parser$stop);
}
}
}

```