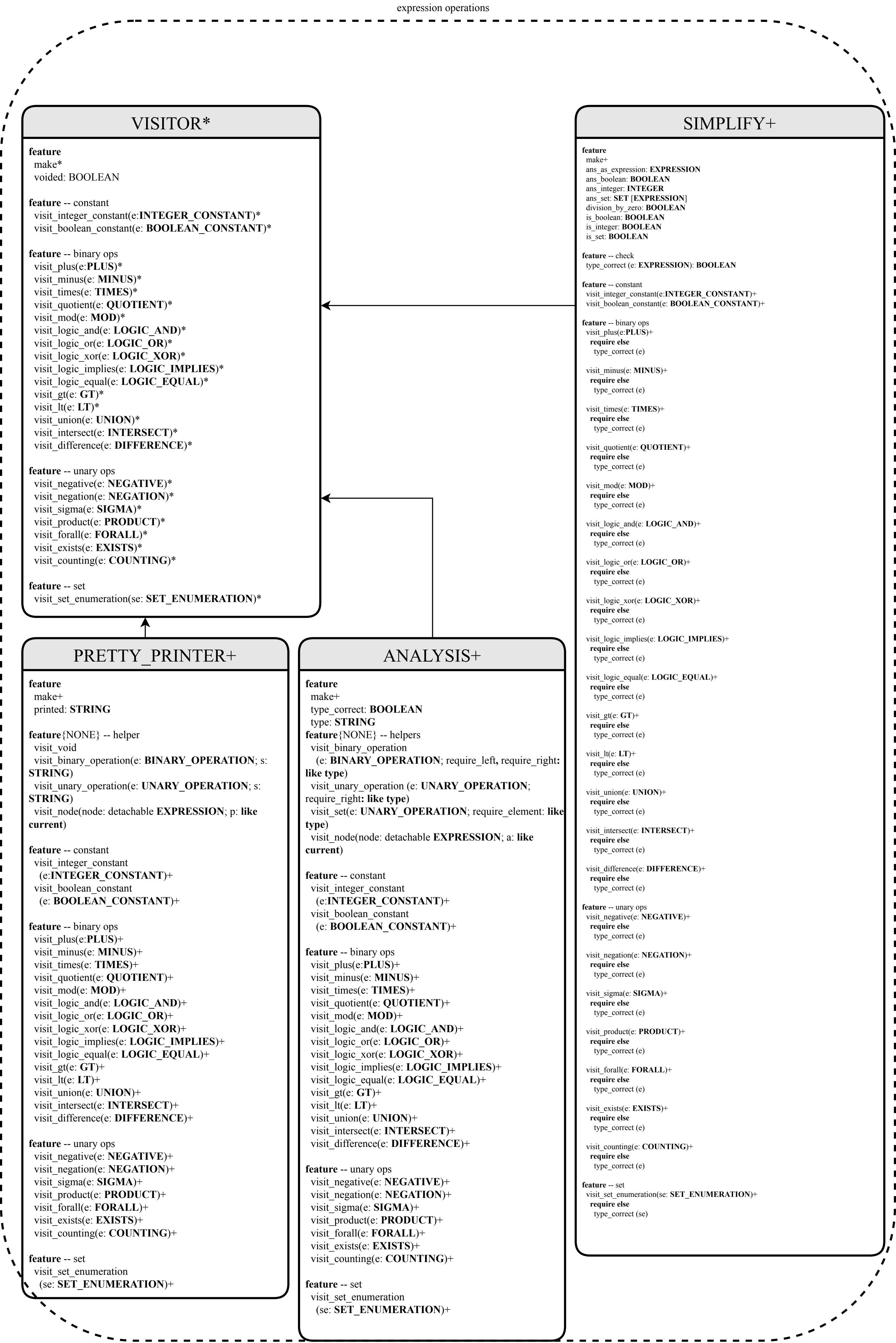

VISITOR*

```
feature
  make*
  voided: BOOLEAN

feature -- constant
  visit_integer_constant(e:INTEGER_CONSTANT)*
  visit_boolean_constant(e: BOOLEAN_CONSTANT)*

feature -- binary ops
  visit_plus(e:PLUS)*
  visit_minus(e: MINUS)*
  visit_times(e: TIMES)*
  visit_quotient(e: QUOTIENT)*
  visit_mod(e: MOD)*
  visit_logic_and(e: LOGIC_AND)*
  visit_logic_or(e: LOGIC_OR)*
  visit_logic_xor(e: LOGIC_XOR)*
  visit_logic_implies(e: LOGIC_IMPLIES)*
  visit_logic_equal(e: LOGIC_EQUAL)*
  visit_gt(e: GT)*
  visit_lt(e: LT)*
  visit_union(e: UNION)*
  visit_intersect(e: INTERSECT)*
  visit_difference(e: DIFFERENCE)*

feature -- unary ops
  visit_negative(e: NEGATIVE)*
  visit_negation(e: NEGATION)*
  visit_sigma(e: SIGMA)*
  visit_product(e: PRODUCT)*
  visit_forall(e: FORALL)*
  visit_exists(e: EXISTS)*
  visit_counting(e: COUNTING)*

feature -- set
  visit_set_enumeration(se: SET_ENUMERATION)*
```

SIMPLIFY+

```
feature
  make+
  ans_as_expression: EXPRESSION
  ans_boolean: BOOLEAN
  ans_integer: INTEGER
  ans_set: SET [EXPRESSION]
  division_by_zero: BOOLEAN
  is_boolean: BOOLEAN
  is_integer: BOOLEAN
  is_set: BOOLEAN

feature -- check
  type_correct (e: EXPRESSION): BOOLEAN

feature -- constant
  visit_integer_constant(e:INTEGER_CONSTANT)+
  visit_boolean_constant(e: BOOLEAN_CONSTANT)+

feature -- binary ops
  visit_plus(e:PLUS)+
    require else
      type_correct (e)

  visit_minus(e: MINUS)+
    require else
      type_correct (e)

  visit_times(e: TIMES)+
    require else
      type_correct (e)

  visit_quotient(e: QUOTIENT)+
    require else
      type_correct (e)

  visit_mod(e: MOD)+
    require else
      type_correct (e)

  visit_logic_and(e: LOGIC_AND)+
    require else
      type_correct (e)

  visit_logic_or(e: LOGIC_OR)+
    require else
      type_correct (e)

  visit_logic_xor(e: LOGIC_XOR)+
    require else
      type_correct (e)

  visit_logic_implies(e: LOGIC_IMPLIES)+
    require else
      type_correct (e)

  visit_logic_equal(e: LOGIC_EQUAL)+
    require else
      type_correct (e)

  visit_gt(e: GT)+
    require else
      type_correct (e)

  visit_lt(e: LT)+
    require else
      type_correct (e)

  visit_union(e: UNION)+
    require else
      type_correct (e)

  visit_intersect(e: INTERSECT)+
    require else
      type_correct (e)

  visit_difference(e: DIFFERENCE)+
    require else
      type_correct (e)

feature -- unary ops
  visit_negative(e: NEGATIVE)+
    require else
      type_correct (e)

  visit_negation(e: NEGATION)+
    require else
      type_correct (e)

  visit_sigma(e: SIGMA)+
    require else
      type_correct (e)

  visit_product(e: PRODUCT)+
    require else
      type_correct (e)

  visit_forall(e: FORALL)+
    require else
      type_correct (e)

  visit_exists(e: EXISTS)+
    require else
      type_correct (e)

  visit_counting(e: COUNTING)+
    require else
      type_correct (e)

feature -- set
  visit_set_enumeration(se: SET_ENUMERATION)+
    require else
      type_correct (se)
```

PRETTY_PRINTER+

```
feature
  make+
  printed: STRING

feature{NONE} -- helper
  visit_void
  visit_binary_operation(e: BINARY_OPERATION; s:
STRING)
  visit_unary_operation(e: UNARY_OPERATION; s:
STRING)
  visit_node(node: detachable EXPRESSION; p: like
current)

feature -- constant
  visit_integer_constant
    (e:INTEGER_CONSTANT)+
  visit_boolean_constant
    (e: BOOLEAN_CONSTANT)+

feature -- binary ops
  visit_plus(e:PLUS)+
  visit_minus(e: MINUS)+
  visit_times(e: TIMES)+
  visit_quotient(e: QUOTIENT)+
  visit_mod(e: MOD)+
  visit_logic_and(e: LOGIC_AND)+
  visit_logic_or(e: LOGIC_OR)+
  visit_logic_xor(e: LOGIC_XOR)+
  visit_logic_implies(e: LOGIC_IMPLIES)+
  visit_logic_equal(e: LOGIC_EQUAL)+
  visit_gt(e: GT)+
  visit_lt(e: LT)+
  visit_union(e: UNION)+
  visit_intersect(e: INTERSECT)+
  visit_difference(e: DIFFERENCE)+

feature -- unary ops
  visit_negative(e: NEGATIVE)+
  visit_negation(e: NEGATION)+
  visit_sigma(e: SIGMA)+
  visit_product(e: PRODUCT)+
  visit_forall(e: FORALL)+
  visit_exists(e: EXISTS)+
  visit_counting(e: COUNTING)+

feature -- set
  visit_set_enumeration
    (se: SET_ENUMERATION)+
```

ANALYSIS+

```
feature
  make+
  type_correct: BOOLEAN
  type: STRING
feature{NONE} -- helpers
  visit_binary_operation
    (e: BINARY_OPERATION; require_left, require_right:
like type)
  visit_unary_operation (e: UNARY_OPERATION;
require_right: like type)
  visit_set(e: UNARY_OPERATION; require_element: like
type)
  visit_node(node: detachable EXPRESSION; a: like
current)

feature -- constant
  visit_integer_constant
    (e:INTEGER_CONSTANT)+
  visit_boolean_constant
    (e: BOOLEAN_CONSTANT)+

feature -- binary ops
  visit_plus(e:PLUS)+
  visit_minus(e: MINUS)+
  visit_times(e: TIMES)+
  visit_quotient(e: QUOTIENT)+
  visit_mod(e: MOD)+
  visit_logic_and(e: LOGIC_AND)+
  visit_logic_or(e: LOGIC_OR)+
  visit_logic_xor(e: LOGIC_XOR)+
  visit_logic_implies(e: LOGIC_IMPLIES)+
  visit_logic_equal(e: LOGIC_EQUAL)+
  visit_gt(e: GT)+
  visit_lt(e: LT)+
  visit_union(e: UNION)+
  visit_intersect(e: INTERSECT)+
  visit_difference(e: DIFFERENCE)+

feature -- unary ops
  visit_negative(e: NEGATIVE)+
  visit_negation(e: NEGATION)+
  visit_sigma(e: SIGMA)+
  visit_product(e: PRODUCT)+
  visit_forall(e: FORALL)+
  visit_exists(e: EXISTS)+
  visit_counting(e: COUNTING)+

feature -- set
  visit_set_enumeration
    (se: SET_ENUMERATION)+
```