Syntax for A Simple Query Language

Hao Wu

Department of Computer Science
Maynooth University
haowu@cs.nuim.ie

Index Terms—**query, ocl, SMT**

$\langle Expr \rangle$ ::= $\langle QueryExpr \rangle$
                    | $\langle BinaryExpr \rangle$
                    | $(\langle QueryModule \rangle)^*$

$\langle BinaryExpr \rangle$ ::= $\langle QueryExpr \rangle$ **+** $\langle QueryExpr \rangle$
                    | $\langle QueryExpr \rangle$ **-** $\langle QueryExpr \rangle$
                    | $\langle QueryExpr \rangle$ **&** $\langle QueryExpr \rangle$

$\langle QueryExpr \rangle$ ::=   **select** $\langle FeatureExpr \rangle$**(,** $\langle FeatureExpr \rangle)^*$
                    $(\langle withExpr \rangle)?$ $(\langle butExpr \rangle)?$ $(\langle oclExpr \rangle)?$ **as** IDENT

$\langle FeatureExpr \rangle$ ::= $\langle ClassExpr \rangle$ | $\langle AttrExpr \rangle$ | $\langle AssocExpr \rangle$
$\langle ClassExpr \rangle$ ::= $(\langle Modifiers \rangle)?$ $\langle NameSpace \rangle$ $(\langle rankExpr \rangle)?$
$\langle AttrExpr \rangle$ ::= $\langle NameSpace \rangle$ **.**$\langle NameSpace \rangle(\langle rankExpr \rangle)?$
$\langle AssocExpr \rangle$ ::= $\langle NameSpace \rangle$ **:**$\langle NameSpace \rangle$**:**$\langle NameSpace \rangle(\langle rankExpr \rangle)?$

$\langle withExpr \rangle$ ::=   **with** $\langle InvExpr \rangle$**(,** $\langle InvExpr \rangle)^*$
$\langle InvExpr \rangle$ ::= $\langle NameSpace \rangle$**::**$\langle NameSpace \rangle(\langle rankExpr \rangle)?$

$\langle oclExpr \rangle$ ::=   **inject** { $\langle expression \rangle(\langle rankExpr \rangle)?$**(,** $\langle expression \rangle\langle rankExpr \rangle)^*$)}

$\langle rankExpr \rangle$ ::=   **@ INT**
$\langle Modifiers \rangle$ ::=   **only** | **no** | **all**
$\langle NameSpace \rangle$ ::=   IDENT | *****

$\langle QueryModule \rangle$ ::=   **module** IDENT
                    $(\langle QueryExpr \rangle | \langle BinaryExpr \rangle)^+$
                    end

Fig. 1: Syntax of our query language. Here, terminals are marked in bold font.