SIMONE IOZIA N.549108
PROGETTO IN OCAML DEL CORSO DI PROGRAMMAZIONE 2 (A.A 2019/20)

REGOLE OPERAZIONALI DEL TIPO DIZIONARIO

DICT

$$\frac{\forall (id, val) \in d \Rightarrow DictVal((id, (env \triangleright val \Rightarrow (v1))) \in I \;\&\&\; id != k \quad \forall k \in I)) \Rightarrow v}{env \triangleright Dict(d) \Rightarrow v}$$

INSERT

$$\frac{\begin{array}{cc} env \triangleright v1 \Rightarrow v1 & env \triangleright d \Rightarrow L \\ !(\exists k \in L.k == id) \Rightarrow (id, v1) \in L \Rightarrow v & \end{array}}{env \triangleright InsertDict(v1, id, d)}$$

DELETE

$$\frac{\begin{array}{cc} env \triangleright v1 \Rightarrow v1 & env \triangleright d \Rightarrow L \\ (\exists k \in L.k == id) \Rightarrow (id, v1) \in L \Rightarrow v & \end{array}}{env \triangleright DeleteDict(id, d)}$$

HAS-KEY

$$\frac{\begin{array}{c} env \triangleright d \Rightarrow L \\ (\exists k \in L.k == id) \Rightarrow true \Rightarrow v \qquad !(\exists k \in L.k == id) \Rightarrow false \Rightarrow v \end{array}}{env \triangleright HasKeyDict(id, d) \Rightarrow v}$$

ITERATE

$$\frac{\begin{array}{c} env \triangleright fun \Rightarrow FunVal(x, e) \qquad env \triangleright d \Rightarrow L \\ \forall (id1, v1)(id2, v2) \in L \;\; t.c. \;\; id1 != id2 \Rightarrow type(v1) == type(v2) \\ DictVal(\forall (id, val) \in L \Rightarrow env[val/x]) \Rightarrow v \end{array}}{env \triangleright IterateDict(fun, d) \Rightarrow v}$$

FOLD

$$\frac{\begin{array}{c} env \triangleright fun \Rightarrow FunBinVal(acc, x, e) \qquad env \triangleright d \Rightarrow L \\ \forall (id1, v1), (id2, v2) \in L \;\; t.c. \;\; id1 != id2 \Rightarrow type(v1) == type(v2) \\ DictVal(\forall (id, val) \in L \Rightarrow env[val/x] \;\&\&\; env[v/acc] \Rightarrow v \end{array}}{env \triangleright FoldDict(fun, d, dfv) \Rightarrow v}$$

FILTER

$$\frac{\begin{array}{c} env \triangleright d \Rightarrow L \\ \forall (id1, v1)(id2, v2) \in L \;\; t.c. \;\; id1 != id2 \Rightarrow type(v1) == type(v2) \\ DictVal(\forall (id, val) \in L \;\; t.c. \;\; id \in kl) \Rightarrow v \end{array}}{env \triangleright FilterDict(kl, d) \Rightarrow v}$$