# 1 Syntax

| | | | | |
|---|---|---|---|---|
| ground types | $S$ | ::= | Unit | |
| | | \| | Bool | |
| value types | $A$ | ::= | Bool | |
| | | \| | Case A | |
| | | \| | OSum | |
| | | \| | $A \times A$ | |
| | | \| | $A * A$ | |
| | | \| | $U\underline{B}$ | |
| computation types | $B$ | ::= | $A \to \underline{B}$ | |
| | | \| | $A \mathrel{-\!\!*} \underline{B}$ | |
| | | \| | $F\ A$ | |
| values | $V$ | ::= | tt | |
| | | \| | true | |
| | | \| | false | |
| | | \| | $x$ | variable |
| | | \| | $\mathrm{inj}_V V$ | injection into the open sum |
| | | \| | $(V, V)$ | |
| | | \| | $\pi_1 V$ | |
| | | \| | $\pi_2 V$ | |
| | | \| | $(V * V)$ | separating product |
| | | \| | $\rho_1 V$ | |
| | | \| | $\rho_2 V$ | |
| | | \| | thunk $M$ | |
| computations | $M$ | ::= | $\mho$ | need monad for this |
| | | \| | force $V$ | |
| | | \| | ret $V$ | |
| | | \| | $x \leftarrow M; N$ | |
| | | \| | $M\ N$ | |
| | | \| | $M@N$ | |
| | | \| | $\lambda x\colon A.M$ | |
| | | \| | $\alpha x\colon A.M$ | separating function |
| | | \| | $\mathrm{newcase}_A\ x; M$ | "allocate" a new case in the open sum |
| | | \| | match $V$ with $V$ $\{\mathrm{inj} x.M \vert N\}$ | match on open sum |
| | | \| | if $V$ then $M$ else $N$ | |
| value typing context | $\Gamma$ | ::= | $\emptyset$ | |
| | | \| | $x : A$ | |
| | | \| | $\Gamma; \Gamma'$ | cartesian product |
| | | \| | $\Gamma \fatsemi \Gamma'$ | monoidal product |
| stoup | $\Theta$ | ::= | $\cdot$ | |
| | | \| | $\bullet : B$ | |