# Relations (cont.)

- A relation $R$ between sets $S$ and $T$ can be represented as a set of pairs $(s, t)$ representing those elements of $S$ and $T$ that are related
- A pair is syntactically represented in Event-B as $(s \mapsto t)$ or (s,, t) in ascii
- Mathematically, a relation between sets $S$ and $T$ is a member of $\mathbb{P}(S \times T)$, i.e., a subset of $S \times T$
- Reminder: $S \times T$ – all possible pairs from $S$ and $T$
- Shorthand notation: $S \leftrightarrow T \equiv \mathbb{P}(S \times T)$
- In other words, $R \in S \leftrightarrow T$ is equivalent to $R \in \mathbb{P}(S \times T)$ or $R \subseteq S \times T$