

A *Binary Decision Diagram (BDD)* is a rooted, directed acyclic graph with

- one or two terminal nodes of out-degree zero labeled 0 or 1, and
- a set of variable nodes u of out-degree two. The two outgoing edges are given by two functions $low(u)$ and $high(u)$. (In pictures, these are shown as dotted and solid lines, respectively.) A variable $var(u)$ is associated with each variable node.

A BDD is *Ordered* (OBDD) if on all paths through the graph the variables respect a given linear order $x_1 < x_2 < \dots < x_n$. An (O)BDD is *Reduced* (R(O)BDD) if

- **(uniqueness)** no two distinct nodes u and v have the same variable name and low- and high-successor, i.e.,

$$var(u) = var(v), low(u) = low(v), high(u) = high(v) \text{ implies } u = v,$$

and

- **(non-redundant tests)** no variable node u has identical low- and high-successor, i.e.,

$$low(u) \neq high(u) .$$