Consider the following declarations

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type date = int*int*int
type name = string
type bday = name*date
type bdayset = bday set
val s :  bdayset
```

from a ”system” that stores names and birthdays.

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from a ”system” that stores names and birthdays.

- *Each person can only have one birthday*

$$\forall(a,b) : \texttt{bday}.\forall(c,d) : \texttt{bday}.(a,b) \in s \wedge (c,d) \in s \wedge (a = c \rightarrow b = d)$$

- *There is no one with name "n" in s* We can define a predicate P : `string*bdayset` $\rightarrow$ `bool` which expresses this:

$$\texttt{fun}\ P(n, s) = \forall (a, b) : bday.(a, b) \in s \wedge a \neq n$$

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- *The set of names of people born on date "d"* Define a function LN : `date*bdayset` $\rightarrow$ `name set`,

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- *There is a person born on date "d"*

$$\exists n : \texttt{name}.(n, d) \in s$$