

## Verification condition

```
(defthm my-theorem1
  (implies
    (and
      (integerp n)
      (integerp key)
      (integerp entr)
      (integer-listp a)
    )
    (implies
      (and
        (< 0 n)
        (<= n (length a))
        (< 0 entr)
      )
      (and
        (implies
          (<= entr (cnt 0 (- n 1) key a))
          (= (rep2 n key entr a) 1)
        )
        (implies
          (> entr (cnt 0 (- n 1) key a))
          (= (rep2 n key entr a) 0)
        )
      )
    )
  )
  :hints (("Goal"
    :induct (nat-induction n)))
)
```

```
(defun nat-induction (n)
  (if
    (zp n)
    n
    (nat-induction (- n 1))
  )
)
```