Mmn 12

Characterization:

Constructors:

Create : () --> BinaryNum

Add-bit: BinaruNym X Bit --> BinaryNum

Change-bit: BinaryNum X index X Bit --> BinaryNum

Rotate-right: BinaryNum --> BinaryNum

Rotate-left: BinaryNum --> BinaryNum

Observers:

To-base-10: BinaryNum --> int

BinaryNum $= \left(B_0 \ldots B_{n-1} \right)$

(Create) = (BinaryNum)

      -where $n=1, B_0=0$

(Add-bit BinaryNum Bit) = ((BinaryNum) Bit)

(To-base-10 BinaryNum) $= \left(2^{n-1} * B_{n-1} + \ldots + 2^0 * B_0 \right)$

(Rotate-right BinaryNum) $= \left(B_0 B_{n-1} \ldots B_1 \right)$

(Rotate-left BinaryNum) $= \left(B_{n-2} \ldots B_0 B_{n-1} \right)$