

# Hybrid Hash Join

Memory (M) = **M** pages

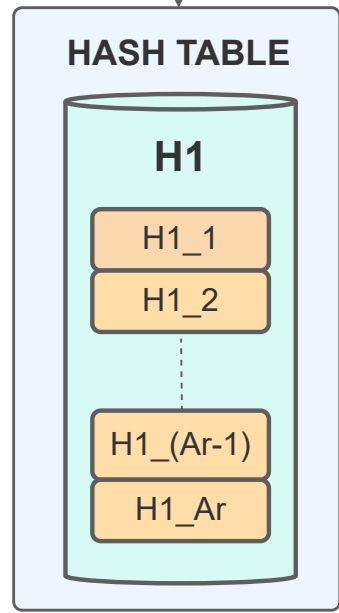
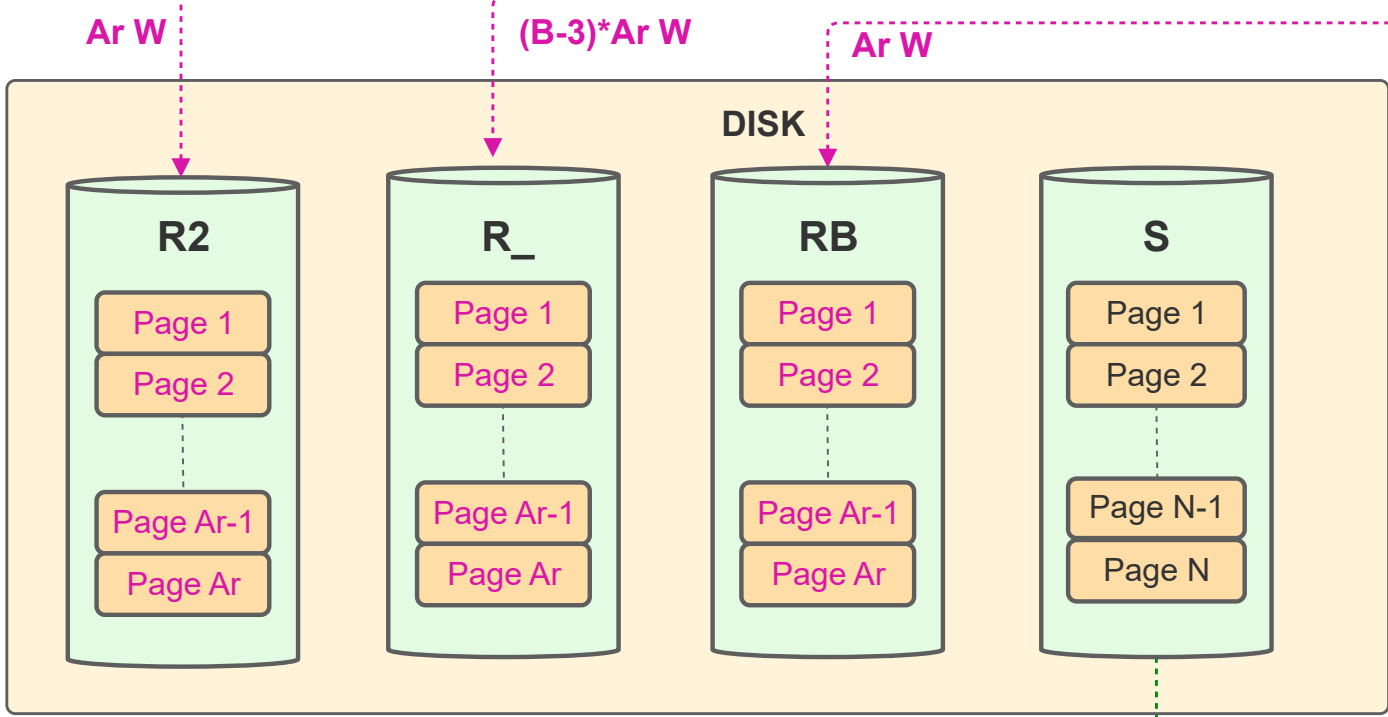
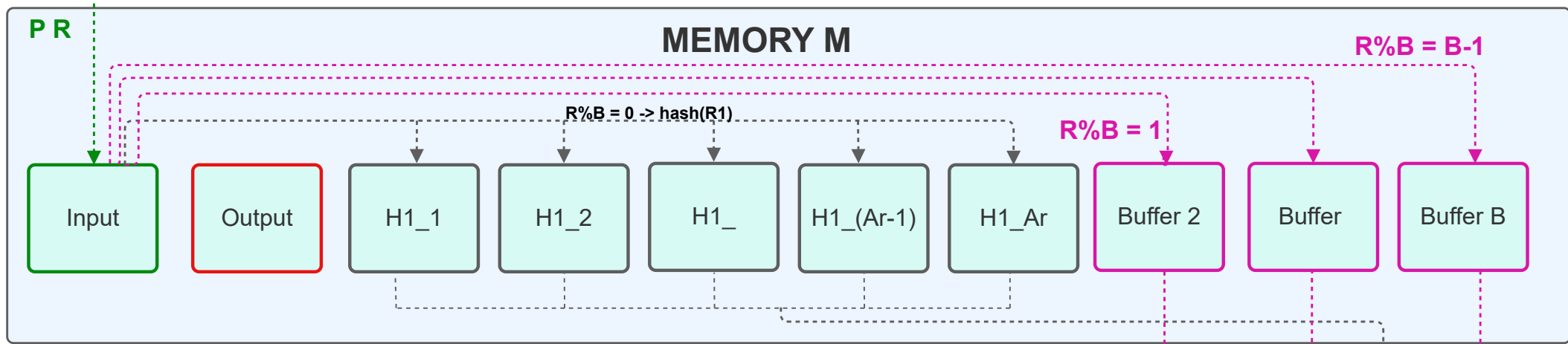
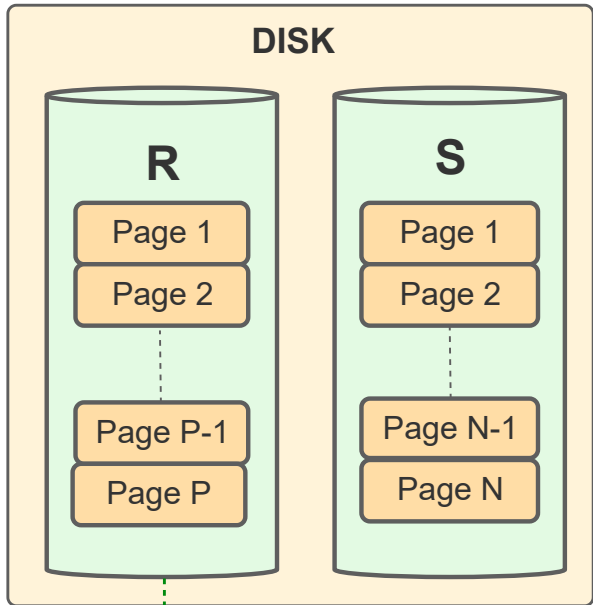
Numbers of partitions (B) = **B**

Partition size  $R = \lceil \text{PageR}(P) / B \rceil = \mathbf{Ar}$

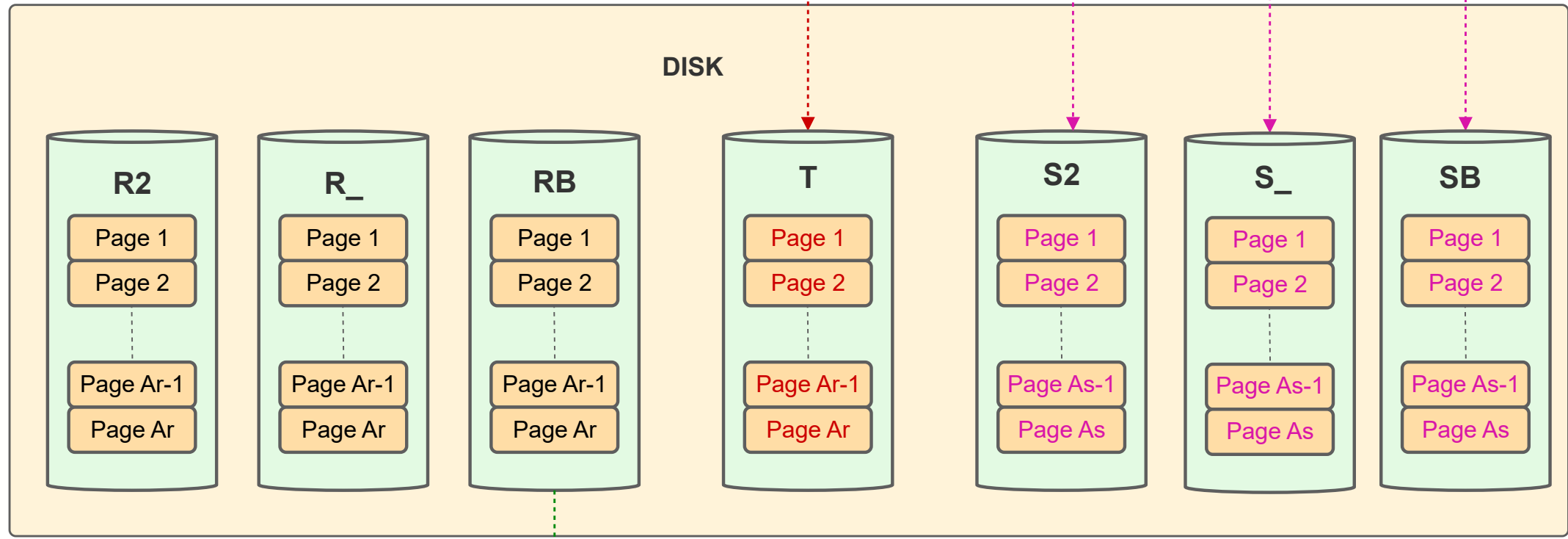
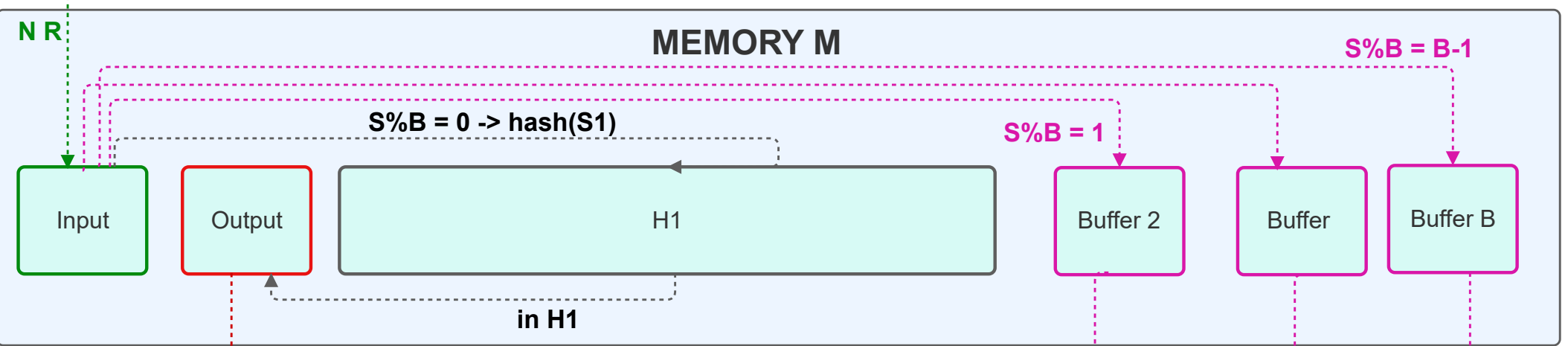
Partition size  $S = \lceil \text{PageS}(N) / B \rceil = \mathbf{As}$

Condition :  $(M-2) - B-1 \geq Ar \iff B \leq (M-1 - Ar)$

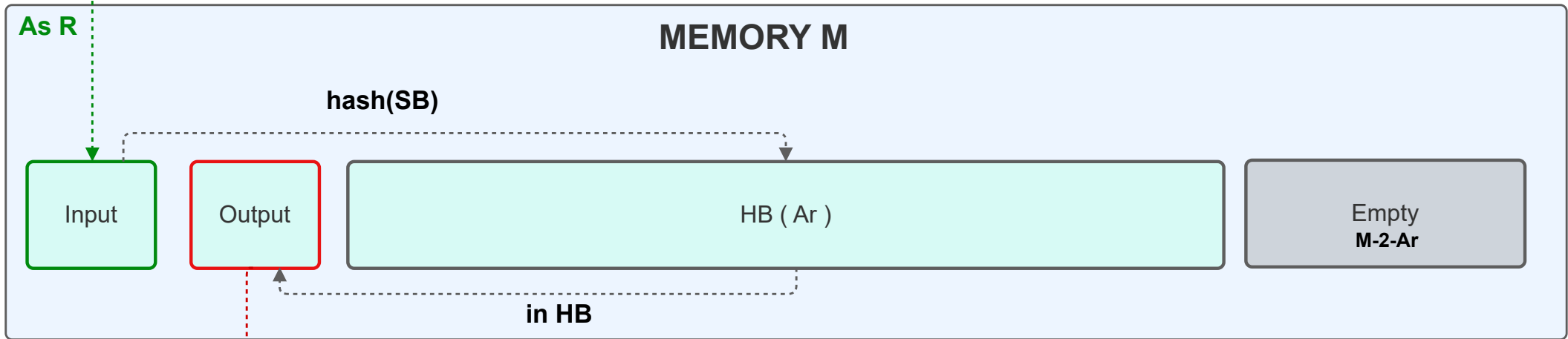
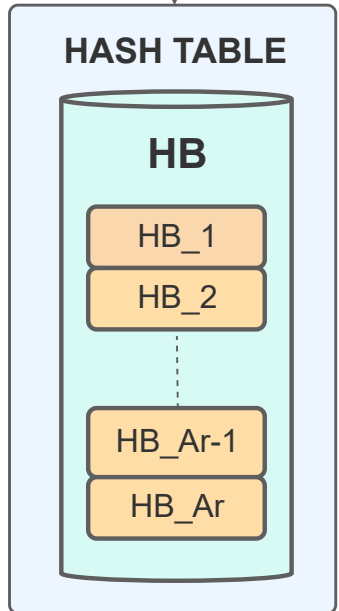
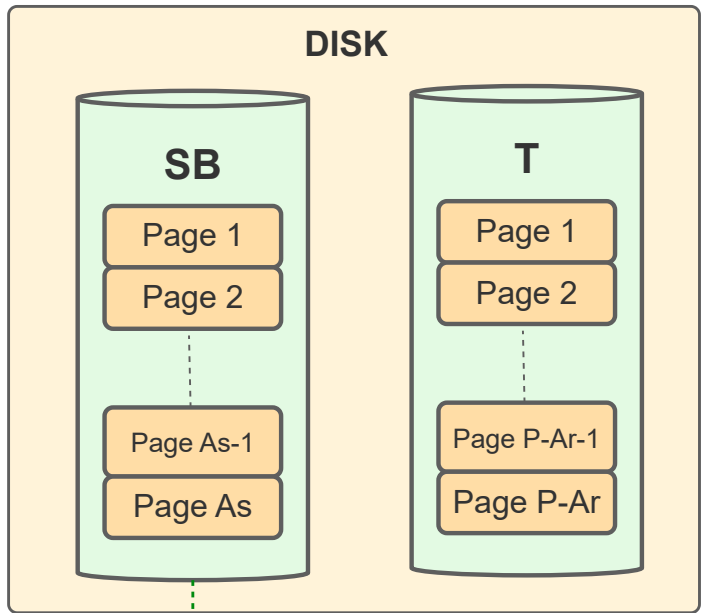
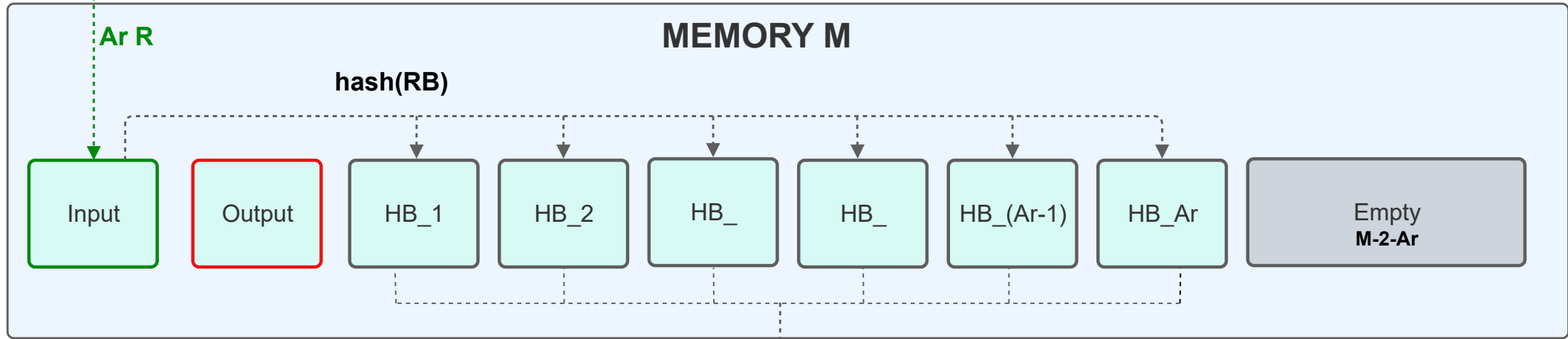
We assume selectivity=1 and hash functions equally distribute data.



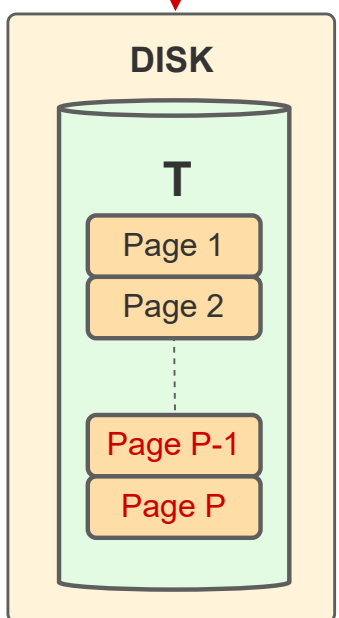
PASS 1



PROBE 2-(B-1)  $(B-2) \times (Ar+As) R$  |  $(B-2) \times Ar W$



PASS B



Reading =  $(P+N) + (Ar+As) + \dots + (Ar+As) = \mathbf{P} + \mathbf{N} + (B-1) \times (As+Ar)$   
Writing =  $(Ar + (B-1)(As+Ar)) + (Ar + (Ar+As)) + \dots + (Ar + (Ar+As))$   
=  $(B-1) \times [Ar+As] + \mathbf{P}$