

# Simple Hash Join

Memory (M) = **M** pages

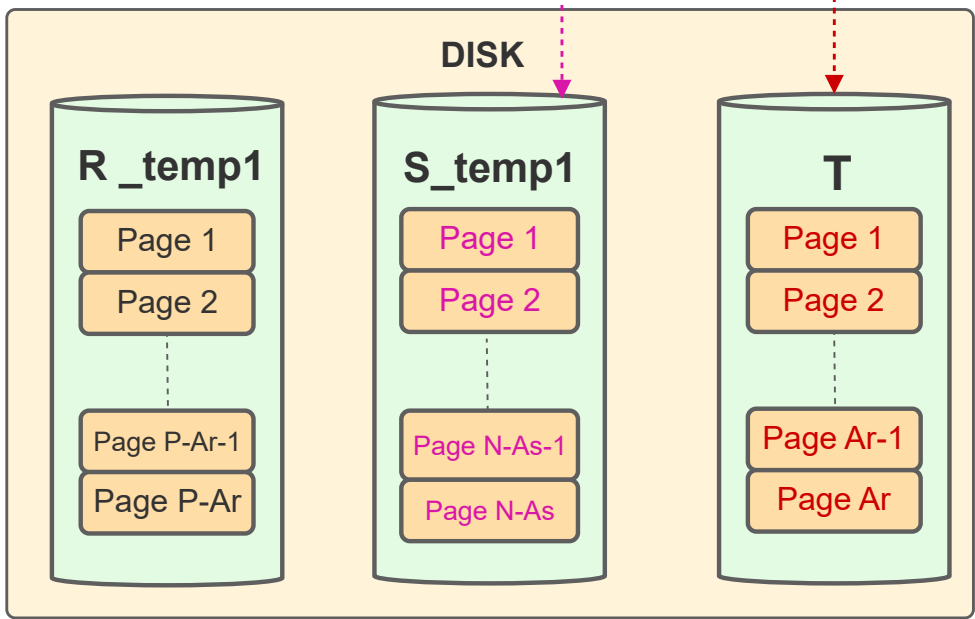
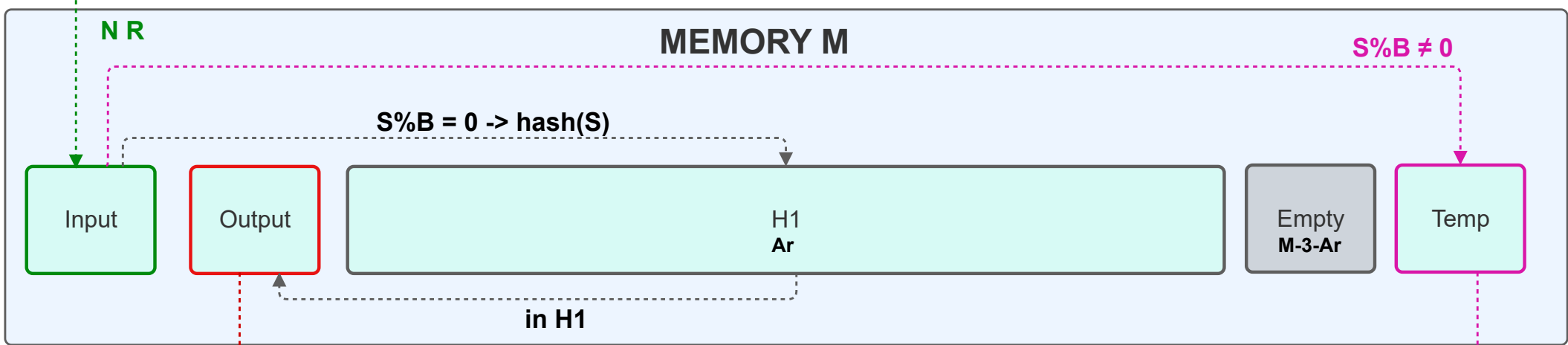
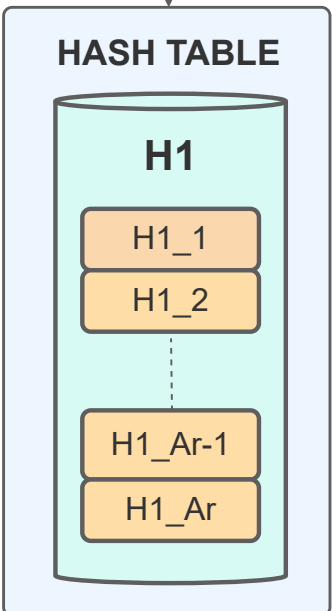
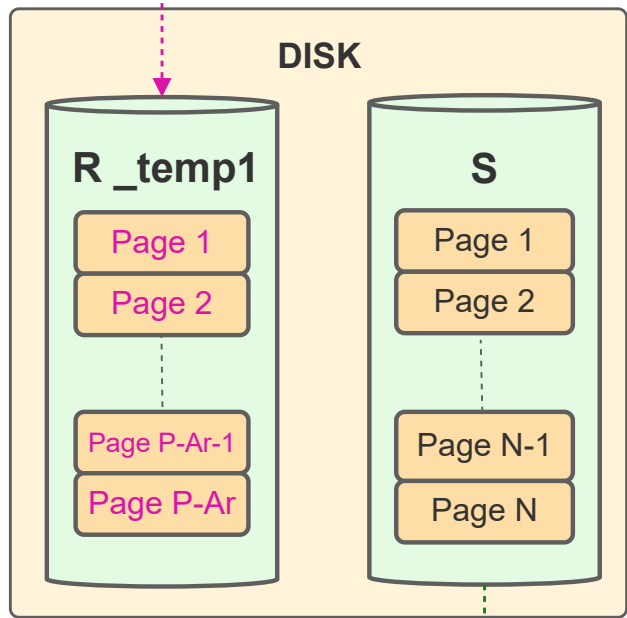
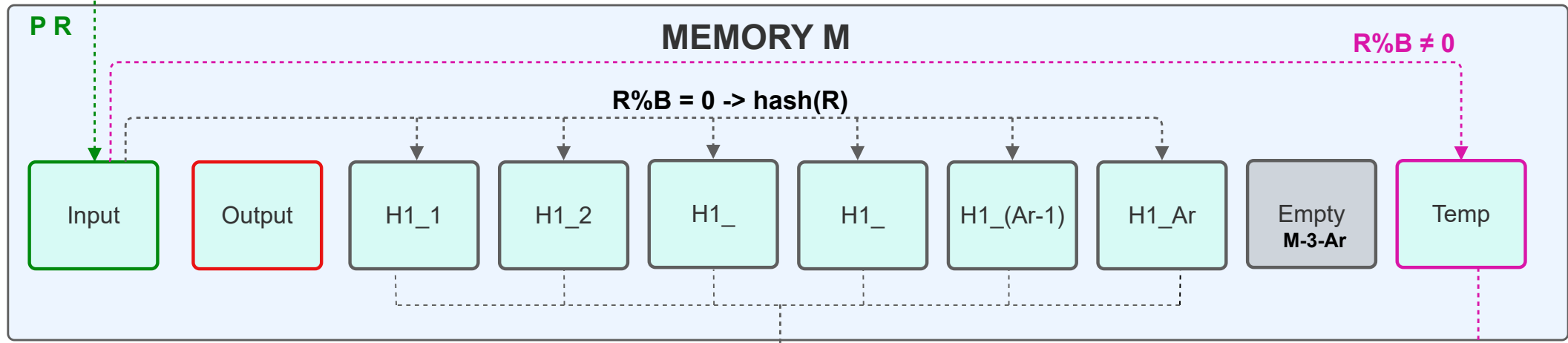
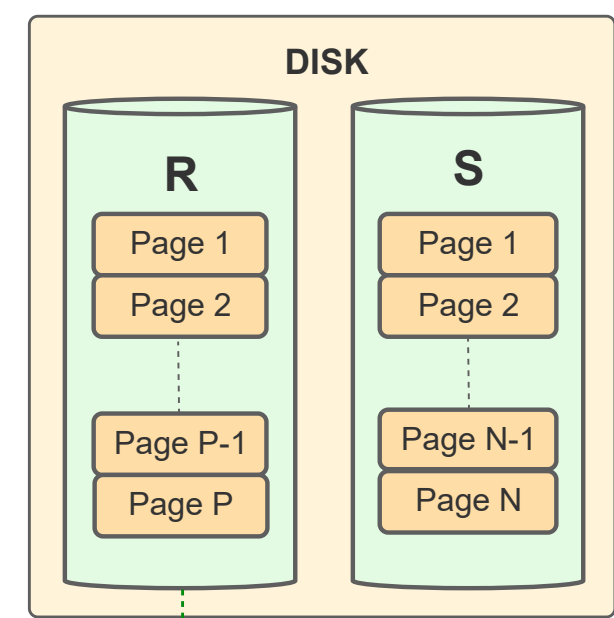
Table size max = M-(input, output, temp) = **M-3**

Numbers of partitions (B) =  $\lceil \text{PageR (P)} / (\text{M}-3) \rceil = \mathbf{B}$

Partition size R(A) =  $\lceil \text{PageR (P)} / \mathbf{B} \rceil \leq \text{M}-3 = \mathbf{Ar}$

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

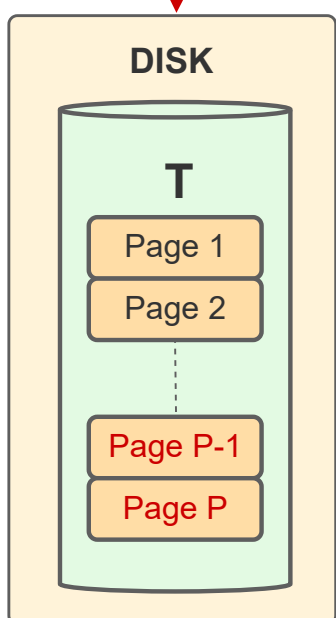
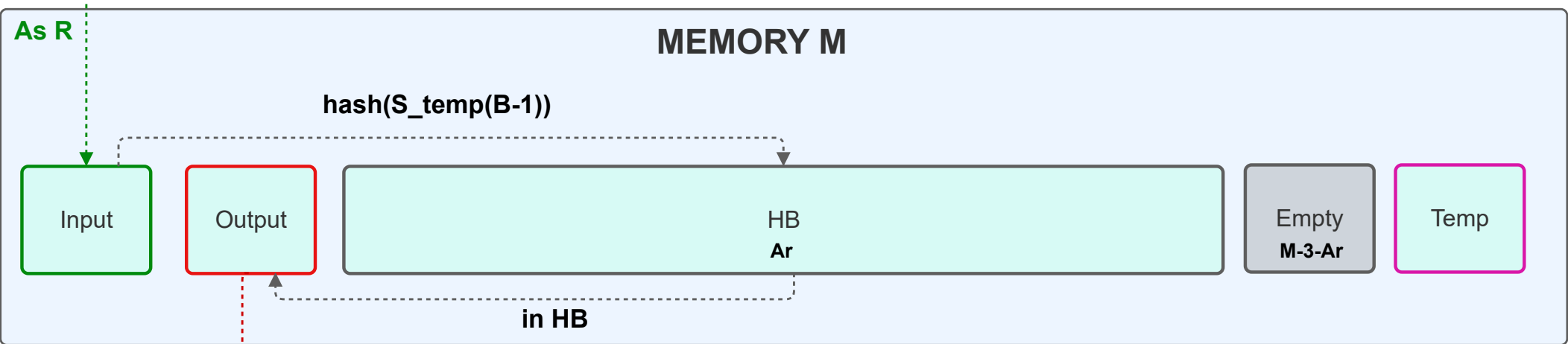
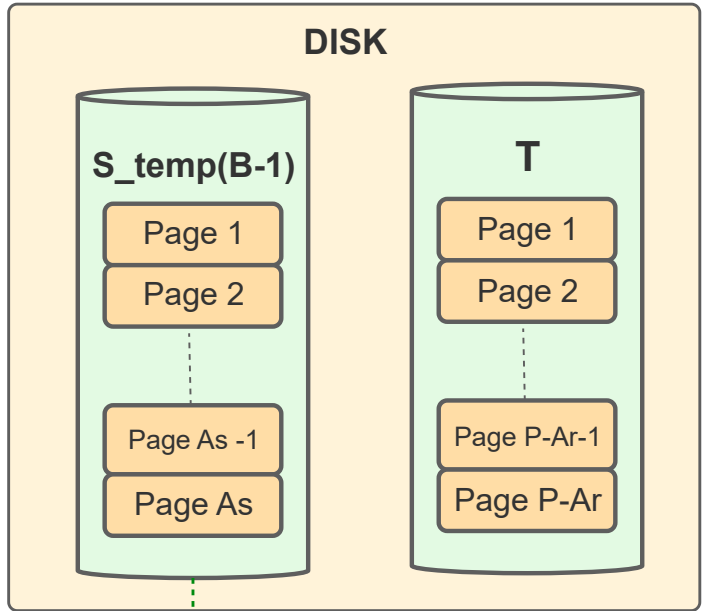
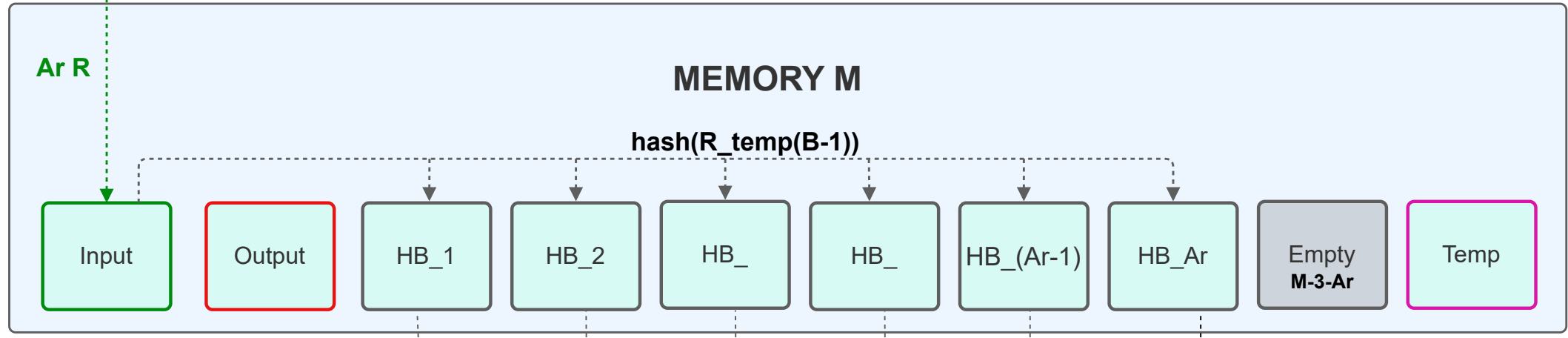
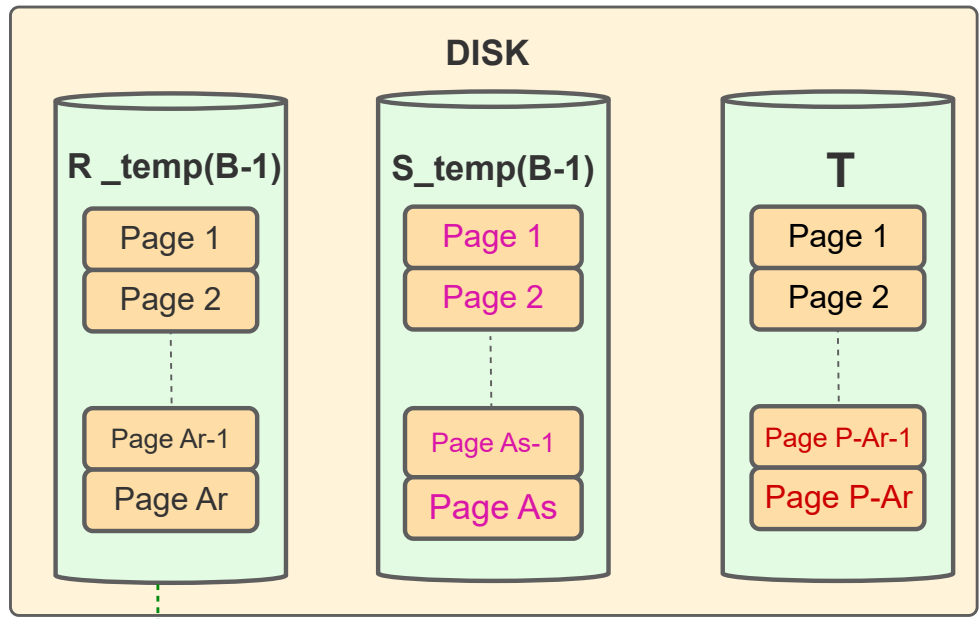
*We assume selectivity=1 and hash functions equally distribute data.*



PASSE 1

## PASSE 2 - (B-1)

(B-2)\*Ar W  
1+2+3+...+(B-2)\*[Ar + As] W  
2+...+(B-1)\*[Ar + As] R



Reading = (P+N) + (P-Ar + N-As) + ... + (Ar+As) = (B)\*(B-1)/2 \* [Ar+As] + P + N  
Writing = (Ar+ N-As +P-Ar) + (Ar+ N-2As +P-2Ar) + ...+ (Ar+ As + Ar)  
= B\*(B-1)/2 [Ar+As] + P

PASSE B