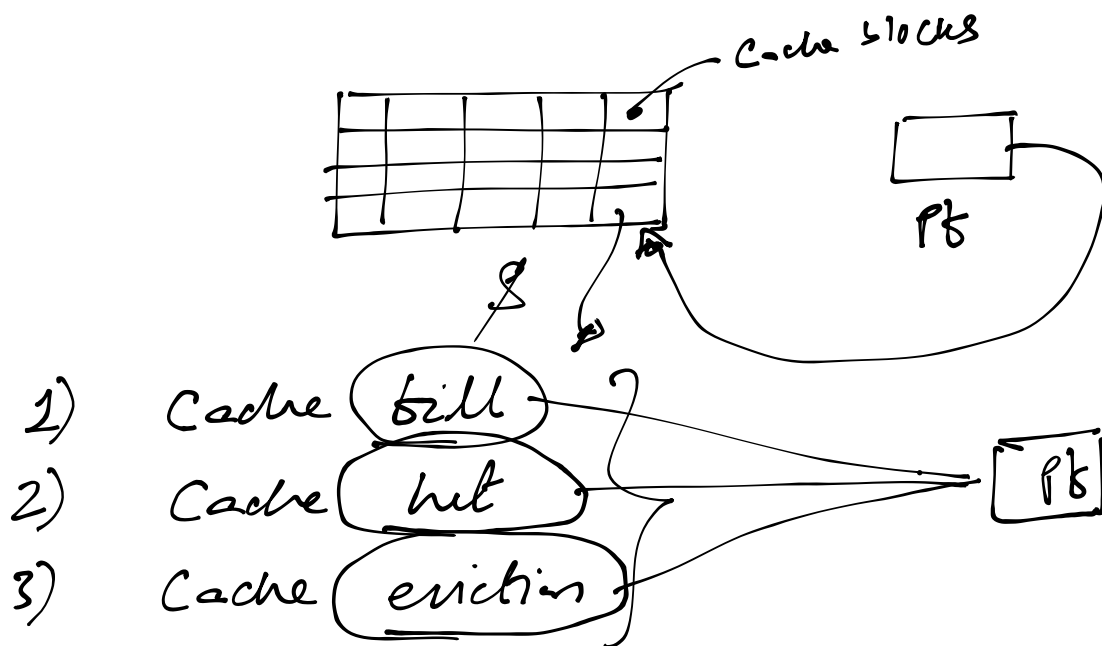


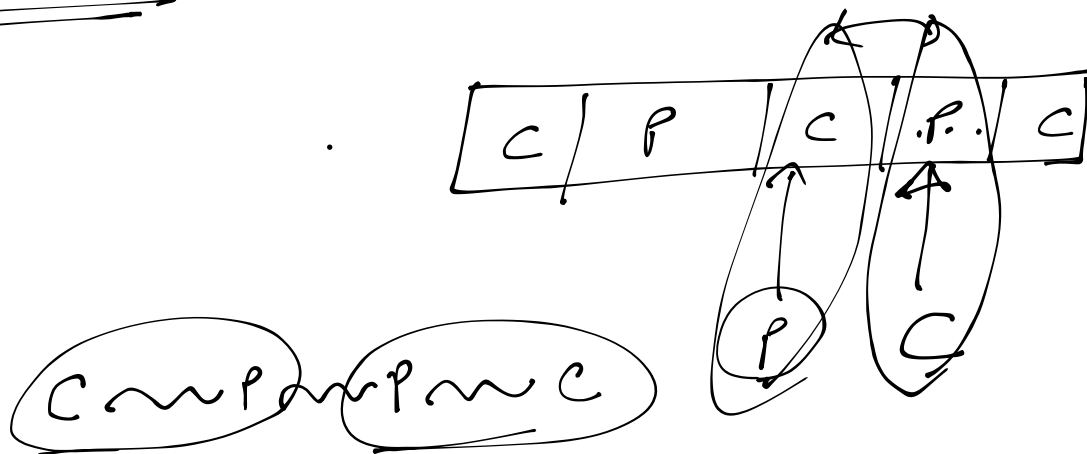
1) Interactions

Cache
management

Prefetching



eviction



Cache \rightarrow C
 Prefetch \rightarrow P
 C evicts P
 P evicts P
 \neg P evicts C

Subtle issues:-

① P hit \rightarrow C \leftarrow ~bit

C evicts C

② 2.1 P evicts C \leftarrow dead
 2.2 hit
 3.1 P evicts C \leftarrow nm-dead
 3.2 hit

Prefetcher is not harmful \rightarrow useful for Cache management

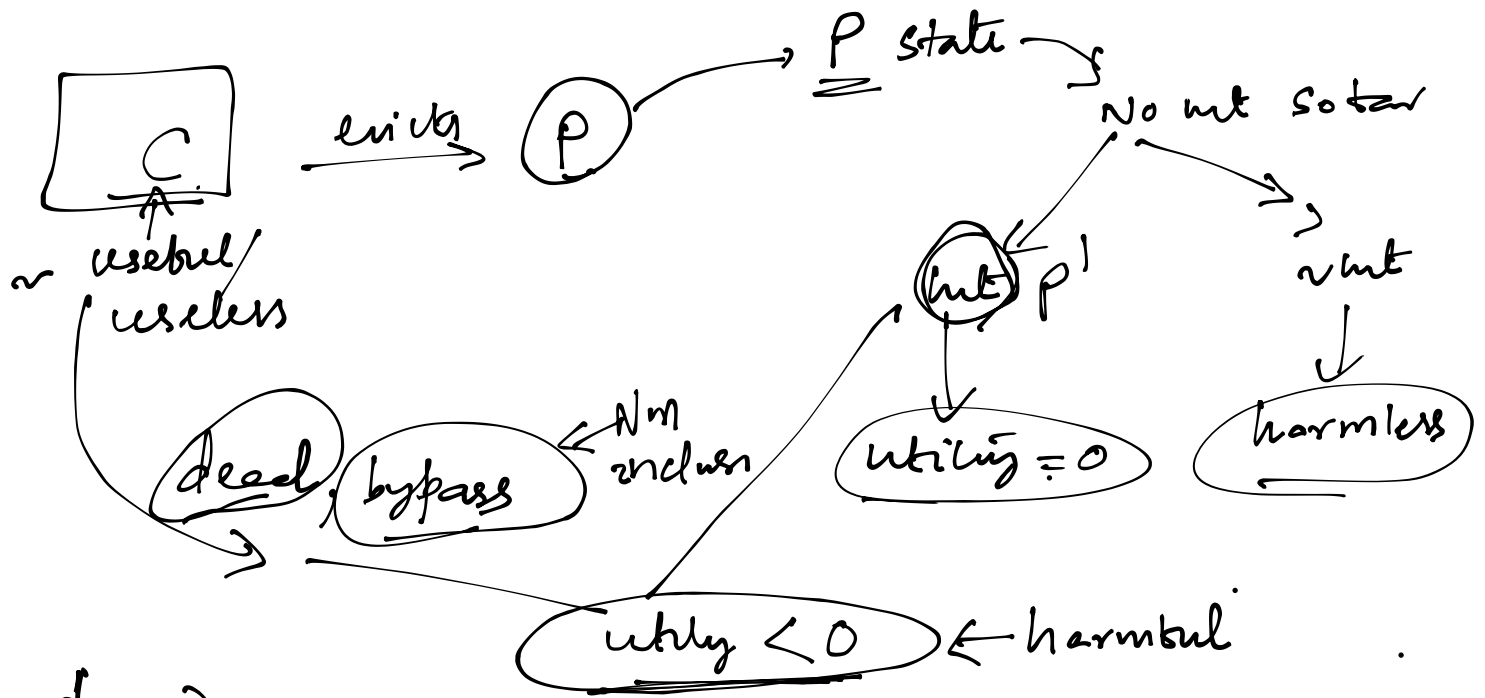
Prefetcher is actually harmful

Utility = 0 \leftarrow harmful/harmless

4.1 P evicts C \leftarrow nm-dead

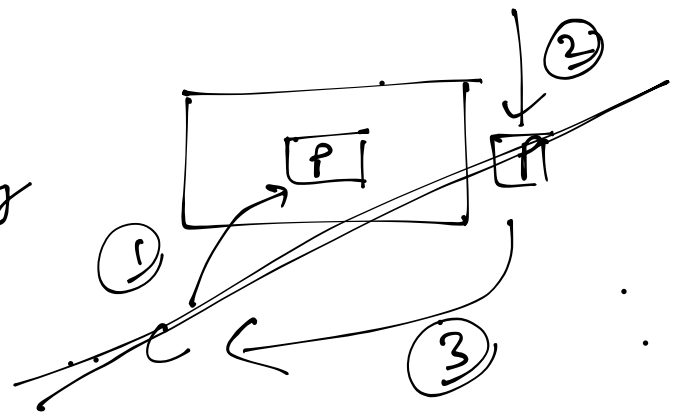
4.2 no hit Utility < 0 \leftarrow harmful \rightarrow ve

$C \rightarrow P$



$(C \rightarrow P \text{ \& \& } P \rightarrow X)$

$P' \leftarrow$ evicted P requested by C
 \hookrightarrow harmful



$P \rightarrow P$

