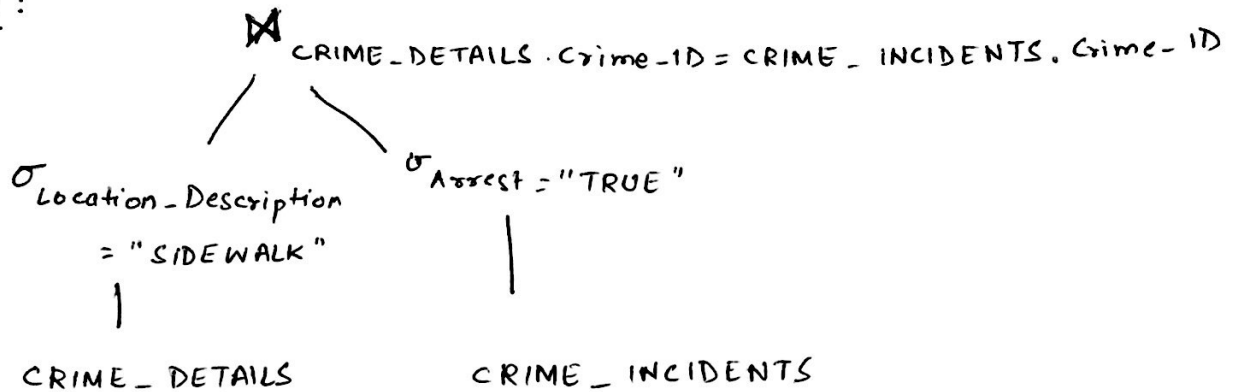


EXPRESSION:

2. $\pi \left(\sigma_{\text{Location-Description} = \text{"SIDEWALK"}} \left(\text{CRIME_DETAILS} \right) \bowtie \sigma_{\text{Arrests} = \text{"TRUE"}} \left(\text{CRIME_INCIDENTS} \right) \bowtie \text{CRIME_TYPE} \right)$
 $[C = \text{CRIME_DETAILS.Crime_ID} = \text{CRIME_INCIDENTS.Crime_ID}]$

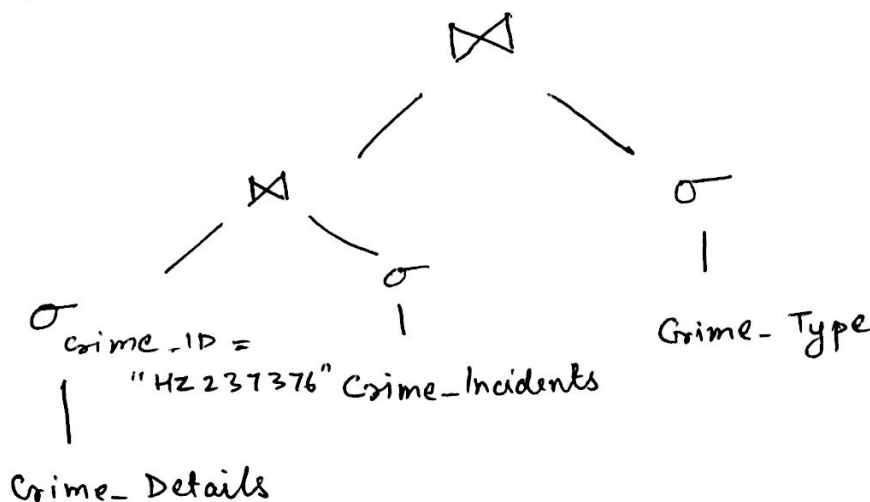
TREE:



4. Expression:

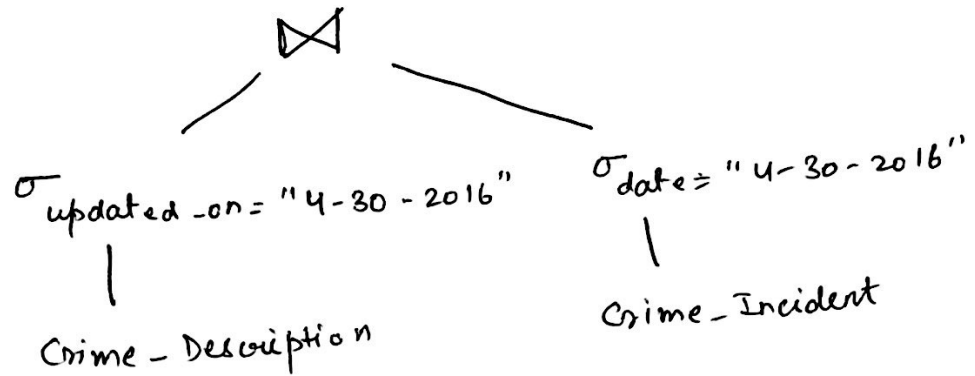
$\sigma_{\text{Crime_ID} = \text{"HZ237376"}} \left(\text{CRIME_DETAILS} \right) \bowtie \sigma_{\text{Crime_ID} = \text{"HZ237376"}} \left(\text{CRIME_INCIDENTS} \right) \bowtie \sigma_{\text{Crime_Type} = \text{"Homicide"}} \left(\text{CRIME_TYPE} \right)$

Tree -



8. $\sigma_{\text{updated-on} = "4-30-2016"} \bowtie \sigma_{\text{date} = "4-30-2016"} \quad (\text{Crime-Description}) \bowtie (\text{Crime-Incidents})$

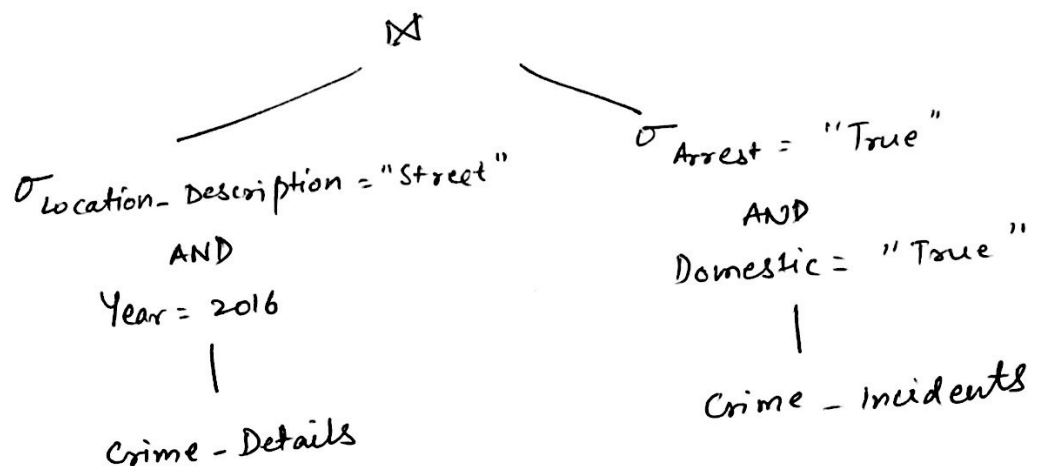
Tree:



9. Expression:

$\sigma_{\text{Location-Description} = "Street" \text{ AND } \text{Year} = 2016} \quad (\text{Crime-Details}) \bowtie \sigma_{\text{Arrest} = "True" \text{ AND } \text{Domestic} = "True"} \quad (\text{Crime-Incidents})$

Tree:



Q.10

EXPRESSION:

$\sigma_{\text{Description} = \text{"Telephone Threat"}} (\text{Crime_Details}) \bowtie \sigma_{\substack{\text{District} = 10 \\ \text{AND} \\ \text{FBI_Code} = '30'}} (\text{Crime_Incident})$

TREE:

