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#6 Case Study

1. CREATE SEQUENCE criminals\_criminalid\_seq

INCREMENT BY 1

START WITH 1017

NOCYCLE;

CREATE SEQUENCE crimes\_crimeid\_seq

INCREMENT BY 1

START WITH 1

NOCYCLE;

INSERT INTO Criminals (criminal\_id, last, first, street, city, state, zip, phone, V\_status, P\_status, mail\_flag)

VALUES (criminals\_criminalid\_seq.NEXTVAL, 'Norris', 'Scott', '157 Ash St', 'Richmond', 'VA', '23226', '8046661827', 'Y', 'N', 'N');

INSERT INTO Crimes (crime\_id, criminal\_id, classification, date\_charged, status, hearing\_date, appeal\_cut\_date, date\_recorded)

VALUES (crimes\_crimeid\_seq.NEXTVAL, criminals\_criminalid\_seq.CURRVAL, 'F', '25-FEB-2018', 'CA', '12-MAR-2018', '25-APR-2018', '03-MAR-2018');

2. CREATE INDEX criminals\_nameaddressinfo\_idx

ON criminals (last, street, phone);

3. Yes, a bitmap index would be useful in the city jail database. Columns with low cardinality benefit from the use of a bitmap index. For example, the ‘Classification’ column has only (4) available values that can be returned: 'F', 'M', 'O', 'U'. Other columns to which this would apply:

Criminals.V\_Status

Criminals.P\_Status

Criminals.Mail\_flag

Crimes.Status

Sentences.Type

Prob\_officers.Status

Officers.Status

Appeals.Status

Crime\_charges.charge\_status

The above columns benefit from a bitmap index because of the low number of distinct values.

4. The creation of synonyms would make adding new records easier. Instead of typing criminals\_criminalid\_seq.NEXTVAL, you could use something like CRIMINALID.NEXTVAL. From a database security perspective, the city jail database would benefit as well, as multiple users would possibly add data to the database at any given time. By using synonyms, users can be limited in what they can see, and users can also be limited in what they see as far as the actual database parameters and structure.