CS & IT



ENGINERING

Database

Key Concepts & Finding Number of Candidate keys Part 2 **DPP 03** Discussion Notes



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TOPICS TO BE COVERED

01 Question

02 Discussion



Consider the relation R (P, Q, R, S, T) and the set of function dependencies $F = \{P \rightarrow Q, QR \rightarrow T, TS \rightarrow P\}$. Which of the following is not the candidate key of R?



RIPORST) [P-18, QR-)T. TS-)P]

Prime = (S. R.P. T.Q)



PRS PS (PR) - (PART

RS (PRS) - (PARST)

RS (QRS) = [ARSTP]

(QS)= (QS)



QRS

PRS 15 Candidadeky - (1)

Ib XAHriber -> (Prime Attribut)

QRS is Candidately (3)



 $\frac{\{ts\}^{\frac{1}{\epsilon}}[TSPQ]}{\{RS\}^{\frac{1}{\epsilon}}[RS]} \xrightarrow{RS} \frac{TS \rightarrow P}{\{TRS\}^{\frac{1}{\epsilon}}[TRSPQ]}$

TRS is condidate

Q.2

Assume a relation R (P, Q, R, S, T) with the set of functional dependencies $\{P\rightarrow Q,\ Q\rightarrow R,\ R\rightarrow Q\ and\ Q\rightarrow T\}$. How many candidate keys are possible in R?

Ib XAHoibute -> [Prime Attoibute]

No Multiple Condidate key

Ang (1)

Consider the following statements:



 S_1 : A key in DBMS is an attribute (or) a set of attributes that help to uniquely identify a tuple (or row) in a relation (or table).

 S_2 : There should be only one candidate key in relation, which is chosen as the primary key.



Only S₁ is true.

R(ABCD) [A+B, B+C, C+D, D-SA]

Only S₂ is true.

Canalitate key = [A, B, C, D]

Both S_1 and S_2 are true.

Neither S_1 nor S_2 is true.



Choose the correct statements from the following:





Then minimal set of attributes that can uniquely identify tuple is known as a candidate key.



A super key is a group of single or multiple keys that identifies

rows in a table. It supports NULL values.



Primary key is not a unique key.



None of the above.

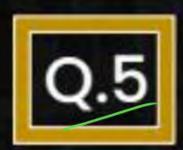
Ang (a) & (b)

AR is Candidate key

ARS is Suberkey

Any Suber Set of ARS is

also Suberkey



Consider a schema with attributes A, B, C, D & E following set of functional dependencies are given,

[MCQ]



$$A \rightarrow B$$

$$A \rightarrow C$$

$$B \rightarrow D$$

$$E \rightarrow A$$

Which of the following functional dependencies is implied by the above set?







X > y logically implied

(X3+ determines y

(X3+-(....y)

Assume the relation R that has eight attributes ABCDEFGH.



Let $A = \{CH \rightarrow G, A \rightarrow BC, B \rightarrow CFH, E \rightarrow A, F \rightarrow EG\}$ is a set of functional depends:

functional dependencies (FD). How many candidates key does the

relation R have? ____.





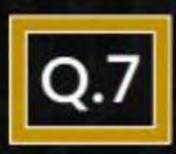


(AD) - (ABCDEFGH) F>EG (FD) = (AB(DEFGM)



BJCFH (BDJ-[ABCDEFGN)





Assume the relation schema R(P, Q, R, S, T, U, V, W, X, Y) and the set of functional dependencies on R:

 $F = \{PQ \rightarrow R, Q \rightarrow UV, PT \rightarrow WX, W \rightarrow Y, X \rightarrow Z\}.$

Which of the following can be candidate key for R?

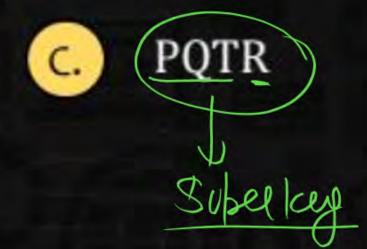
[MCQ]



PQU



(PQU) [PQURY]



D. PQTWX
Suberkey



Consider the following statements:

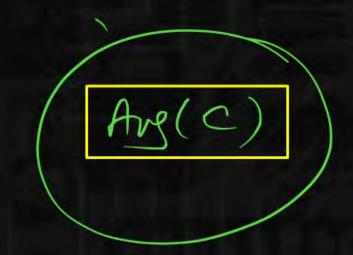


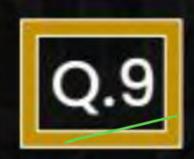
S₁: Primary key has no duplicate values it has only unique values.

S₂: Primary key may consist of a <u>single column</u> or multiple columns according to data sets.

[MCQ]

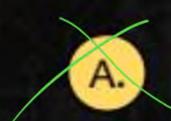
- A. Only S_1 is true.
- B. Only S₂ is true.
- Both S_1 and S_2 are true.
- D. Neither S₁ nor S₂ are true.





Choose the correct statements about candidate key.





Candidate key is a super key with maximum attributes.



It must contain unique values.



A table can have multiple CK's but at most one primary key.



It is a minimal Super key with no repeated data.





