# **DBMS Exam Questions**

### 1. Explain database and its components in detail.

- <a href="https://corporatefinanceinstitute.com/resources/data-science/database/">https://corporatefinanceinstitute.com/resources/data-science/database/</a>
- <a href="https://www.edureka.co/blog/what-is-a-database/">https://www.edureka.co/blog/what-is-a-database/</a>
- <a href="https://www.tutorialspoint.com/what-are-the-components-of-dbms">https://www.tutorialspoint.com/what-are-the-components-of-dbms</a>
- https://www.interviewbit.com/blog/components-of-dbms/
- <a href="https://www.dataentryoutsourced.com/blog/components-of-a-database-management-system/">https://www.dataentryoutsourced.com/blog/components-of-a-database-management-system/</a>
- <a href="https://www.guru99.com/introduction-to-database-sql.html">https://www.guru99.com/introduction-to-database-sql.html</a>
- <a href="https://www.bmc.com/blogs/dbms-database-management-systems/">https://www.bmc.com/blogs/dbms-database-management-systems/</a>
- <a href="https://www.studytonight.com/dbms/components-of-dbms.php">https://www.studytonight.com/dbms/components-of-dbms.php</a>
- <a href="https://byjus.com/govt-exams/database-management-system-dbms/">https://byjus.com/govt-exams/database-management-system-dbms/</a>
- <a href="https://www.oracle.com/in/database/what-is-database/">https://www.oracle.com/in/database/what-is-database/</a>

### 1. Explain transaction state by giving an example.

- <a href="https://www.tutorialspoint.com/what-are-the-states-of-transaction-in-dbms">https://www.tutorialspoint.com/what-are-the-states-of-transaction-in-dbms</a>
- https://www.geeksforgeeks.org/transaction-states-in-dbms/
- <a href="https://www.javatpoint.com/dbms-states-of-transaction">https://www.javatpoint.com/dbms-states-of-transaction</a>
- <a href="https://www.gatevidyalay.com/transaction-states-in-dbms/">https://www.gatevidyalay.com/transaction-states-in-dbms/</a>
- <a href="https://www.ques10.com/p/29145/define-transaction-explain-transaction-state-dia-2/">https://www.ques10.com/p/29145/define-transaction-explain-transaction-state-dia-2/</a>
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- <a href="https://ecomputernotes.com/database-system/rdbms/transaction">https://ecomputernotes.com/database-system/rdbms/transaction</a>
- <a href="https://byjus.com/gate/transaction-in-dbms-notes/">https://byjus.com/gate/transaction-in-dbms-notes/</a>
- https://www.tutorialandexample.com/states-of-transaction
- <a href="https://beginnersbook.com/2018/12/dbms-transaction-states/">https://beginnersbook.com/2018/12/dbms-transaction-states/</a>

#### 1. What is PLSQL. Explain its advantages and disadvantages

- https://www.tutorialspoint.com/plsql/plsql\_overview.htm
- <a href="https://www.guru99.com/introduction-pl-sql.html">https://www.guru99.com/introduction-pl-sql.html</a>
- <a href="https://smarttechways.com/tag/disadvantages-of-using-pl-sql/">https://smarttechways.com/tag/disadvantages-of-using-pl-sql/</a>
- https://docs.oracle.com/cd/E11882 01/appdev.112/e25519/overview.htm
- http://www.dhsgsu.edu.in/images/Reading-Material/7-gaurav-pl\_sql\_basics\_intro.pdf
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- https://www.mygreatlearning.com/plsql/tutorials/advantages-of-pl-sql
- https://www.geeksforgeeks.org/difference-between-sql-and-plsql/
- <a href="https://www.educba.com/what-is-pl-sql/">https://www.educba.com/what-is-pl-sql/</a>

### 1. What is data model? Explain basic types of data model.

- https://afteracademy.com/images/what-is-data-model-in-dbms-and-what-are-its-types-hierarchical-model-48add64778fd4b8f.jpg?
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- https://afteracademy.com/blog/what-is-data-model-in-dbms-and-what-are-its-types
- <a href="https://www.javatpoint.com/data-models">https://www.javatpoint.com/data-models</a>
- https://www.guru99.com/data-modelling-conceptual-logical.html
- https://www.sap.com/insights/what-is-data-modeling.html
- https://byjus.com/gate/data-models-in-dbms-notes/
- https://www.simplilearn.com/what-is-data-modeling-article
- <a href="https://www.tutorialspoint.com/dbms/dbms">https://www.tutorialspoint.com/dbms/dbms</a> data models.htm
- https://www.scaler.com/topics/dbms/data-models-in-dbms/
- <a href="https://ecomputernotes.com/fundamental/what-is-a-database/type-of-data-models">https://ecomputernotes.com/fundamental/what-is-a-database/type-of-data-models</a>

### 1. What is relationship? Explain types of relationship.

- <a href="https://www.ibm.com/docs/SSWSR9\_11.6.0/com.ibm.mdshs.wbuser.doc/topics/c\_wbuser\_relations-">https://www.ibm.com/docs/SSWSR9\_11.6.0/com.ibm.mdshs.wbuser.doc/topics/c\_wbuser\_relations-</a>
  <a href="https://www.ibm.com/docs/SSWSR9\_11.6.0/com.ibm.mdshs.wbuser.doc/topics/c\_wbuser\_relations-bip\_types.html">https://www.ibm.com/docs/SSWSR9\_11.6.0/com.ibm.mdshs.wbuser.doc/topics/c\_wbuser\_relations-bip\_types.html</a>
- <a href="https://afteracademy.com/blog/what-are-the-different-types-of-relationships-in-dbms">https://afteracademy.com/blog/what-are-the-different-types-of-relationships-in-dbms</a>
- <a href="https://www.javatpoint.com/types-of-relationship-in-database-table">https://www.javatpoint.com/types-of-relationship-in-database-table</a>
- https://www.scaler.com/topics/types-of-relationship-in-dbms/
- <a href="https://www.mindbodygreen.com/articles/types-of-relationships">https://www.mindbodygreen.com/articles/types-of-relationships</a>
- <a href="https://www.mindbodygreen.com/articles/types-of-relationships#mbg-sggC\_gwJEg">https://www.mindbodygreen.com/articles/types-of-relationships#mbg-sggC\_gwJEg</a>
- <a href="https://www.mindbodygreen.com/articles/types-of-relationships#mbg-3wBOqESJ-l">https://www.mindbodygreen.com/articles/types-of-relationships#mbg-3wBOqESJ-l</a>
- https://www.cseworldonline.com/dbms-tutorial/what-is-relationship-in-dbms.php
- <a href="https://in.indeed.com/career-advice/career-development/what-is-relationship-in-database">https://in.indeed.com/career-advice/career-development/what-is-relationship-in-database</a>
- <a href="https://www.careerride.com/DB-types-of-relationships.aspx">https://www.careerride.com/DB-types-of-relationships.aspx</a>

#### 1. Write any 4 differences between DBMS and RDBMS

- <a href="https://www.javatpoint.com/difference-between-dbms-and-rdbms">https://www.javatpoint.com/difference-between-dbms-and-rdbms</a>
- <a href="https://byjus.com/gate/difference-between-dbms-and-rdbms/">https://byjus.com/gate/difference-between-dbms-and-rdbms/</a>
- <a href="https://www.geeksforgeeks.org/difference-between-rdbms-and-dbms/">https://www.geeksforgeeks.org/difference-between-rdbms-and-dbms/</a>
- <a href="https://www.interviewbit.com/blog/difference-between-dbms-and-rdbms/">https://www.interviewbit.com/blog/difference-between-dbms-and-rdbms/</a>

- <a href="https://www.guru99.com/difference-dbms-vs-rdbms.html">https://www.guru99.com/difference-dbms-vs-rdbms.html</a>
- <a href="https://www.naukri.com/learning/articles/difference-between-dbms-and-rdbms/">https://www.naukri.com/learning/articles/difference-between-dbms-and-rdbms/</a>
- https://www.tutorialspoint.com/difference-between-dbms-and-rdbms
- <a href="https://www.upgrad.com/blog/dbms-vs-rdbms/">https://www.upgrad.com/blog/dbms-vs-rdbms/</a>
- <a href="https://intellipaat.com/blog/dbms-vs-rdbms-difference/">https://intellipaat.com/blog/dbms-vs-rdbms-difference/</a>
- https://brainly.in/question/4259962

### 1.Explain any five datatypes in SQL.

- <a href="https://www.digitalocean.com/community/tutorials/sql-data-types">https://www.digitalocean.com/community/tutorials/sql-data-types</a>
- <a href="https://www.w3schools.com/sql/sql">https://www.w3schools.com/sql/sql</a> datatypes.asp
- https://www.javatpoint.com/sql-data-types
- <a href="https://www.guru99.com/sql-server-datatype.html">https://www.guru99.com/sql-server-datatype.html</a>
- <a href="https://www.geeksforgeeks.org/sql-data-types/">https://www.geeksforgeeks.org/sql-data-types/</a>
- <a href="https://www.programiz.com/sql/data-types">https://www.programiz.com/sql/data-types</a>
- <a href="https://www.tutorialspoint.com/sql/sql-data-types.htm">https://www.tutorialspoint.com/sql/sql-data-types.htm</a>
- <a href="http://www.cs.toronto.edu/~nn/csc309/guide/pointbase/docs/html/htmlfiles/dev\_datatypesandconver\_sionsFIN.html">http://www.cs.toronto.edu/~nn/csc309/guide/pointbase/docs/html/htmlfiles/dev\_datatypesandconver\_sionsFIN.html</a>
- <a href="https://www.simplilearn.com/tutorials/sql-tutorial/sql-data-types">https://www.simplilearn.com/tutorials/sql-tutorial/sql-data-types</a>
- https://www.w3resource.com/sql/data-type.php

### 1. What is normalization? Why we need normalization?

- https://towardsdatascience.com/database-normalization-explained-53e60a494495
- https://www.geeksforgeeks.org/what-is-data-normalization-and-why-is-it-important/
- <a href="https://www.javatpoint.com/dbms-purpose-of-normalization">https://www.javatpoint.com/dbms-purpose-of-normalization</a>
- <a href="https://www.quora.com/Why-the-need-for-normalization">https://www.quora.com/Why-the-need-for-normalization</a>
- <a href="https://www.quora.com/What-is-normalization-and-its-need">https://www.quora.com/What-is-normalization-and-its-need</a>
- <a href="https://www.quora.com/Why-do-we-need-normalization-in-DBMS">https://www.quora.com/Why-do-we-need-normalization-in-DBMS</a>
- <a href="https://www.quora.com/What-is-database-normalization-and-why-is-it-important">https://www.quora.com/What-is-database-normalization-and-why-is-it-important</a>
- https://www.quora.com/What-is-the-purpose-of-normalization-in-database
- <a href="https://blog.saleslayer.com/why-is-database-normalization-so-important">https://blog.saleslayer.com/why-is-database-normalization-so-important</a>
- <a href="https://www.simplilearn.com/automated-recruiting-in-companies-article">https://www.simplilearn.com/automated-recruiting-in-companies-article</a>

#### 2 What is metadata?

- <a href="https://www.techtarget.com/whatis/definition/metadata">https://www.techtarget.com/whatis/definition/metadata</a>
- <a href="https://en.wikipedia.org/wiki/Metadata">https://en.wikipedia.org/wiki/Metadata</a>
- https://en.wikipedia.org/wiki/Metadata\_repository

- <a href="https://en.wikipedia.org/wiki/Metadata">https://en.wikipedia.org/wiki/Metadata</a> standard
- <a href="https://en.wikipedia.org/wiki/Geospatial">https://en.wikipedia.org/wiki/Geospatial</a> metadata
- <a href="https://en.wikipedia.org/wiki/Metadata\_discovery">https://en.wikipedia.org/wiki/Metadata\_discovery</a>
- <a href="https://www.opendatasoft.com/en/blog/what-is-metadata-and-why-is-it-important-data">https://www.opendatasoft.com/en/blog/what-is-metadata-and-why-is-it-important-data</a>
- <a href="https://www.opendatasoft.com/en/blog/what-is-metadata-and-why-is-it-important-data#sub-title-639879a58e5ee">https://www.opendatasoft.com/en/blog/what-is-metadata-and-why-is-it-important-data#sub-title-639879a58e5ee</a>
- <a href="https://www.opendatasoft.com/en/blog/what-is-metadata-and-why-is-it-important-data#sub-title-639879a58f451">https://www.opendatasoft.com/en/blog/what-is-metadata-and-why-is-it-important-data#sub-title-639879a58f451</a>
- <a href="https://www.javatpoint.com/what-is-meta-data">https://www.javatpoint.com/what-is-meta-data</a>

#### 2. Explain ACID properties in detail.

- <a href="https://www.ibm.com/docs/SSGMCP">https://www.ibm.com/docs/SSGMCP</a> 5.4.0/product-overview/acid.html
- <a href="https://www.geeksforgeeks.org/acid-properties-in-dbms/">https://www.geeksforgeeks.org/acid-properties-in-dbms/</a>
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- https://www.gatevidyalay.com/acid-properties/
- https://www.educative.io/answers/what-are-acid-properties-in-a-database
- <a href="https://www.mongodb.com/basics/acid-transactions">https://www.mongodb.com/basics/acid-transactions</a>
- https://www.guru99.com/dbms-transaction-management.html
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#### 2. Explain file and its types.

- <a href="https://en.wikibooks.org/wiki/The\_Computer\_Revolution/Databases/Types\_of\_Files">https://en.wikibooks.org/wiki/The\_Computer\_Revolution/Databases/Types\_of\_Files</a>
- <a href="https://ecomputernotes.com/fundamental/disk-operating-system/what-is-files-types-of-files
- <a href="https://www.ibm.com/docs/en/aix/7.2?topic=files-types">https://www.ibm.com/docs/en/aix/7.2?topic=files-types</a>
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- <a href="https://www.guru99.com/file-systems-operating-system.html">https://www.guru99.com/file-systems-operating-system.html</a>
- <a href="https://www.geeksforgeeks.org/file-systems-in-operating-system/">https://www.geeksforgeeks.org/file-systems-in-operating-system/</a>
- <a href="https://www.indeed.com/career-advice/career-development/types-of-files">https://www.indeed.com/career-advice/career-development/types-of-files</a>

#### 2. Explain the difference between SQL and PLSQL

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- https://www.geeksforgeeks.org/difference-between-sql-and-plsql/
- https://www.interviewbit.com/blog/difference-between-sgl-and-plsql/
- https://www.tutorialspoint.com/difference-between-sql-and-pl-sql
- <a href="https://byjus.com/gate/difference-between-sql-and-plsql/">https://byjus.com/gate/difference-between-sql-and-plsql/</a>
- https://techdifferences.com/difference-between-sql-and-pl-sql.html
- <a href="https://www.javatpoint.com/sql-vs-pl-sql-vs-t-sql">https://www.javatpoint.com/sql-vs-pl-sql-vs-t-sql</a>
- https://www.guru99.com/sql-vs-pl-sql.html
- https://www.quora.com/What-is-the-main-difference-between-SQL-and-PL-SQL
- <a href="https://www.quora.com/What-is-the-difference-between-plsql-and-sql">https://www.quora.com/What-is-the-difference-between-plsql-and-sql</a>

### 2. Explain with example weak and strong entity.

- <a href="https://stackoverflow.com/questions/4741967/example-of-a-strong-and-weak-entity-types">https://stackoverflow.com/questions/4741967/example-of-a-strong-and-weak-entity-types</a>
- <a href="https://www.geeksforgeeks.org/difference-between-strong-and-weak-entity/">https://www.geeksforgeeks.org/difference-between-strong-and-weak-entity/</a>
- <a href="https://prepinsta.com/dbms/weak-entity-and-strong-entity/">https://prepinsta.com/dbms/weak-entity-and-strong-entity/</a>
- https://www.tutorialspoint.com/Types-of-DBMS-Entities-and-their-examples
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- <a href="https://afteracademy.com/blog/difference-between-weak-and-strong-entity">https://afteracademy.com/blog/difference-between-weak-and-strong-entity</a>
- <a href="https://byjus.com/gate/difference-between-strong-and-weak-entity/">https://byjus.com/gate/difference-between-strong-and-weak-entity/</a>
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- <a href="https://www.techantena.com/4829/weak-entity-set-and-strong-entity-set-in-dbms/">https://www.techantena.com/4829/weak-entity-set-and-strong-entity-set-in-dbms/</a>

# 2. What is functional dependency and its types? Explain with example.

- <a href="https://www.geeksforgeeks.org/types-of-functional-dependencies-in-dbms/">https://www.geeksforgeeks.org/types-of-functional-dependencies-in-dbms/</a>
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- <a href="https://opentextbc.ca/dbdesign01/chapter/chapter-11-functional-dependencies/">https://opentextbc.ca/dbdesign01/chapter/chapter-11-functional-dependencies/</a>
- https://gfgc.kar.nic.in/pandavapura/FileHandler/106-e1f713a7-dcfc-4a4d-9ba3-67a2928d2715.pdf
- <a href="https://easyexamnotes.com/functional-dependency-with-examples/">https://easyexamnotes.com/functional-dependency-with-examples/</a>
- <a href="https://www.knowledgehut.com/blog/database/functional-dependency-in-dbms">https://www.knowledgehut.com/blog/database/functional-dependency-in-dbms</a>

#### 2. What is set operator? Explain set operations with example.

- https://docs.oracle.com/cd/B19306\_01/server.102/b14200/operators005.htm
- https://byjus.com/maths/set-operations/
- <a href="https://www.cuemath.com/algebra/operations-on-sets/">https://www.cuemath.com/algebra/operations-on-sets/</a>
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- <a href="https://www.tutorialspoint.com/set-operations">https://www.tutorialspoint.com/set-operations</a>
- <a href="https://www.tutorialspoint.com/sql">https://www.tutorialspoint.com/sql</a> certificate/using the set operators.htm
- https://www.educba.com/sql-set-operators/
- <a href="https://www.studytonight.com/dbms/set-operation-in-sql.php">https://www.studytonight.com/dbms/set-operation-in-sql.php</a>
- https://www.cs.odu.edu/~toida/nerzic/level-a/set/set\_operations.html
- <a href="https://www.britannica.com/science/set-theory/Operations-on-sets">https://www.britannica.com/science/set-theory/Operations-on-sets</a>

### 2. Write a short note on primary key with an example.

- <a href="https://www.ibm.com/docs/SSMLNW\_11.3.0/com.ibm.nex.optimd.common.doc/08pkey/opcommon-c-primary\_keys.html">https://www.ibm.com/docs/SSMLNW\_11.3.0/com.ibm.nex.optimd.common.doc/08pkey/opcommon-c-primary\_keys.html</a>
- <a href="https://www.ques10.com/p/9627/explain-primary-key-with-suitable-example-1/">https://www.ques10.com/p/9627/explain-primary-key-with-suitable-example-1/</a>
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- <a href="https://www.tutorialspoint.com/sql/sql-primary-key.htm">https://www.tutorialspoint.com/sql/sql-primary-key.htm</a>
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- <a href="https://www.programiz.com/sql/primary-key">https://www.programiz.com/sql/primary-key</a>
- https://en.wikipedia.org/wiki/Primary\_key
- https://www.geeksforgeeks.org/difference-between-primary-key-and-foreign-key/

#### 3. Explain datatypes used in PLSQL with example.

- <a href="https://www.tutorialspoint.com/plsql/plsql\_data\_types.htm">https://www.tutorialspoint.com/plsql/plsql\_data\_types.htm</a>
- https://docs.oracle.com/cd/E11882\_01/appdev.112/e25519/datatypes.htm
- <a href="https://docs.oracle.com/database/121/TTPLS/dtypesfunc.htm">https://docs.oracle.com/database/121/TTPLS/dtypesfunc.htm</a>
- <a href="https://www.guru99.com/pl-sql-data-types.html">https://www.guru99.com/pl-sql-data-types.html</a>
- <a href="https://www.ibm.com/docs/en/db2oc?topic=plsql-data-types">https://www.ibm.com/docs/en/db2oc?topic=plsql-data-types</a>
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- <a href="https://www.techonthenet.com/oracle/datatypes.php">https://www.techonthenet.com/oracle/datatypes.php</a>
- https://way2tutorial.com/plsql/plsql-data-types.php

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#### 3. Explain operations on a file.

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- https://prepinsta.com/dbms/recoverability-of-schedules/
- <a href="https://www.w3schools.blog/recoverability-of-schedules-dbms">https://www.w3schools.blog/recoverability-of-schedules-dbms</a>
- <a href="https://docs.oracle.com/cd/E17276">https://docs.oracle.com/cd/E17276</a> 01/html/gsg txn/C/recovery-intro.html

### 7. Explain types of normalization with example.

- <a href="https://static.javatpoint.com/dbms/images/dbms-normalization.png?">https://static.javatpoint.com/dbms/images/dbms-normalization.png?</a>
  <a href="mailto:sazatatic.javatpoint.com/dbms/images/dbms-normalization.png?">sazatatic.javatpoint.com/dbms/images/dbms-normalization.png?</a>
  <a href="mailto:sazatatic.javatpoint.com/dbms/images/dbms-normalization.png?">sazatatic.javatpoint.com/dbms/images/dbms-normalization.png?</a>
  <a href="mailto:sazatatic.javatpoint.com/dbms/images/dbms-normalization.png?">sazatatic.javatpoint.com/dbms/images/dbms-normalization.png?</a>
  <a href="mailto:sazatatic.javatpoint.com/dbms/images/dbms-normalization.png?">sazatatic.javatpoint.com/dbms/images/dbms-normalization.png?</a>
  <a href="mailto:sazatatic.javatpoint.com/dbms/images/dbms-normalization.png">sazatatic.javatpoint.com/dbms/images/dbms-normalization.png</a>
  <a href="mailto:sa
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- <a href="https://www.c-sharpcorner.com/uploadfile/nipuntomar/normalization-and-its-types/">https://www.c-sharpcorner.com/uploadfile/nipuntomar/normalization-and-its-types/</a>
- <a href="https://www.geeksforgeeks.org/normal-forms-in-dbms/">https://www.geeksforgeeks.org/normal-forms-in-dbms/</a>
- <a href="https://www.guru99.com/database-normalization.html">https://www.guru99.com/database-normalization.html</a>
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- https://beginnersbook.com/2015/05/normalization-in-dbms/

- https://www.simplilearn.com/tutorials/sql-tutorial/what-is-normalization-in-sql
- <a href="https://www.scaler.com/topics/dbms/normalization-in-dbms/">https://www.scaler.com/topics/dbms/normalization-in-dbms/</a>
- <a href="https://www.softwaretestinghelp.com/database-normalization-tutorial/">https://www.softwaretestinghelp.com/database-normalization-tutorial/</a>

# 7. What is string operations? Explain any 5 string operations with example.

- <a href="https://www.ibm.com/docs/ssw">https://www.ibm.com/docs/ssw</a> ibm i 72/rzasd/yystrng.htm
- <a href="https://www.l3harrisgeospatial.com/docs/string\_operations.html">https://www.l3harrisgeospatial.com/docs/string\_operations.html</a>
- https://beginnersbook.com/2014/01/c-strings-string-functions/
- <a href="https://algodaily.com/lessons/strings-and-string-operations">https://algodaily.com/lessons/strings-and-string-operations</a>
- <a href="https://www.scaler.com/topics/c/string-functions-in-c/">https://www.scaler.com/topics/c/string-functions-in-c/</a>
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- <a href="https://www.educba.com/string-operators-in-python/">https://www.educba.com/string-operators-in-python/</a>
- <a href="http://net-informations.com/python/basics/string.htm">http://net-informations.com/python/basics/string.htm</a>

### 7. Write a PL-SQL program to swap two numbers

- <a href="https://sp-uploads.s3.amazonaws.com/uploads/services/2143531/20210913095159">https://sp-uploads.s3.amazonaws.com/uploads/services/2143531/20210913095159</a> 613f1f3f31ed5 pl sql p rogram to swap two numberspage0.png?
  <a href="mailto:sa=X&ved=2ahUKEwjE-KPj1-v7AhXLBKYKHQ35CC8Q-B16BAgIEAI">sa=X&ved=2ahUKEwjE-KPj1-v7AhXLBKYKHQ35CC8Q-B16BAgIEAI</a>
- <a href="https://www.studypool.com/documents/4446548/pl-sql-program-to-swap-two-numbers">https://www.studypool.com/documents/4446548/pl-sql-program-to-swap-two-numbers</a>
- <a href="https://www.geeksforgeeks.org/swap-two-numbers-plsql/">https://www.geeksforgeeks.org/swap-two-numbers-plsql/</a>
- <a href="https://www.thecrazyprogrammer.com/2017/08/plsql-program-swap-two-numbers.html">https://www.thecrazyprogrammer.com/2017/08/plsql-program-swap-two-numbers.html</a>
- <a href="https://just4programmers.wordpress.com/2017/08/31/plsql-program-to-swap-two-numbers/">https://just4programmers.wordpress.com/2017/08/31/plsql-program-to-swap-two-numbers/</a>
- <a href="https://community.oracle.com/tech/developers/discussion/3941020/how-to-swap-two-values-in-sql-with-out-using-third-variable">https://community.oracle.com/tech/developers/discussion/3941020/how-to-swap-two-values-in-sql-with-out-using-third-variable</a>
- <a href="https://codingdiksha.com/pl-sql-program-to-swap-two-numbers/">https://codingdiksha.com/pl-sql-program-to-swap-two-numbers/</a>
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- <a href="https://stackoverflow.com/questions/46074525/pl-sql-functions">https://stackoverflow.com/questions/46074525/pl-sql-functions</a>
- <a href="https://stackoverflow.com/questions/67127478/i-am-creating-a-pl-sql-function-in-oracle-19c-to-find-largest-among-two-numbers">https://stackoverflow.com/questions/67127478/i-am-creating-a-pl-sql-function-in-oracle-19c-to-find-largest-among-two-numbers</a>

# Consider 'Courier Services System'. In which Administrator is person who handles

<a href="https://stormotion.io/blog/how-to-develop-courier-management-system/">https://stormotion.io/blog/how-to-develop-courier-management-system/</a>

- https://www.upperinc.com/guides/what-is-courier-management/
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- https://optimoroute.com/courier-management/
- <a href="https://www.freelancermap.com/blog/what-does-service-delivery-manager-do/">https://www.freelancermap.com/blog/what-does-service-delivery-manager-do/</a>
- <a href="https://www.simplilearn.com/service-delivery-manager-article">https://www.simplilearn.com/service-delivery-manager-article</a>
- <a href="https://www.indeed.com/hire/job-description/courier">https://www.indeed.com/hire/job-description/courier</a>
- <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8139509/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8139509/</a>
- https://www.researchgate.net/publication/319987325\_Critical\_Review\_Of\_Courier\_Service\_Management\_System\_With\_Empasis\_To\_Its\_Relevance\_If\_Adopted\_In\_Nigeria
- <a href="https://www.shiprocket.in/blog/courier-parcel-package-tracking-system-working/">https://www.shiprocket.in/blog/courier-parcel-package-tracking-system-working/</a>

### Determine functional dependency in Mark sheet table given below:

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- <a href="https://www.geeksforgeeks.org/functional-dependency-and-attribute-closure/">https://www.geeksforgeeks.org/functional-dependency-and-attribute-closure/</a>
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- https://gfgc.kar.nic.in/pandavapura/FileHandler/106-e1f713a7-dcfc-4a4d-9ba3-67a2928d2715.pdf
- <a href="https://www.guru99.com/dbms-functional-dependency.html">https://www.guru99.com/dbms-functional-dependency.html</a>
- <a href="https://www.chegg.com/homework-help/questions-and-answers/consider-relational-schemas-given-respective-sets-functional-dependencies-valid-schemas-r--q103291622">https://www.chegg.com/homework-help/questions-and-answers/consider-relational-schemas-given-respective-sets-functional-dependencies-valid-schemas-r--q103291622</a>
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- http://www.cectl.ac.in/images/pdf\_docs/studymaterial/cse/S4/pdd4.pdf
- <a href="https://www.javatpoint.com/dbms-questions-on-normalization">https://www.javatpoint.com/dbms-questions-on-normalization</a>

#### Discuss different applications Of DBMS.

- <a href="https://www.geeksforgeeks.org/application-of-dbms/">https://www.geeksforgeeks.org/application-of-dbms/</a>
- <a href="https://www.tutorialspoint.com/what-are-the-applications-of-dbms">https://www.tutorialspoint.com/what-are-the-applications-of-dbms</a>
- https://www.tutorialsmate.com/2022/01/applications-of-dbms.html
- <a href="https://www.guru99.com/what-is-dbms.html">https://www.guru99.com/what-is-dbms.html</a>
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- <a href="https://www.interviewbit.com/blog/applications-of-dbms/">https://www.interviewbit.com/blog/applications-of-dbms/</a>
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- <a href="https://beginnersbook.com/2015/04/database-applications/">https://beginnersbook.com/2015/04/database-applications/</a>
- <a href="https://www.mongodb.com/basics/database-application">https://www.mongodb.com/basics/database-application</a>

• <a href="https://whatisdbms.com/application-and-uses-of-database-management-system-dbms/">https://whatisdbms.com/application-and-uses-of-database-management-system-dbms/</a>

#### Draw ER diagram for Courier Service System.

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- <a href="https://www.inettutor.com/diagrams/shipping-management-system-er-diagram/">https://www.inettutor.com/diagrams/shipping-management-system-er-diagram/</a>
- <a href="https://www.scribd.com/presentation/430721253/Er-Diagram-Final">https://www.scribd.com/presentation/430721253/Er-Diagram-Final</a>
- https://circle.visual-paradigm.com/ups-system/
- <a href="https://www.jiscollege.ac.in/pdf/projectcasestudy.pdf">https://www.jiscollege.ac.in/pdf/projectcasestudy.pdf</a>
- <a href="https://www.studocu.com/in/document/university-of-kerala/computer-science/courier-management-system-srs-case-study/5876612">https://www.studocu.com/in/document/university-of-kerala/computer-science/courier-management-system-srs-case-study/5876612</a>

#### Explain ACID properties with the example

- <a href="https://www.geeksforgeeks.org/acid-properties-in-dbms/">https://www.geeksforgeeks.org/acid-properties-in-dbms/</a>
- https://www.ibm.com/docs/SSGMCP 5.4.0/product-overview/acid.html
- https://www.javatpoint.com/acid-properties-in-dbms
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- https://beginnersbook.com/2015/04/acid-properties-in-dbms/
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# Explain different services provided by DBMS Over conventional file system.

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- <a href="https://byjus.com/gate/difference-between-file-system-and-dbms/">https://byjus.com/gate/difference-between-file-system-and-dbms/</a>
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- <a href="https://specialties.bayt.com/en/specialties/q/47871/advantages-and-disadvantages-of-dbms-over-traditional-file-processing-system/">https://specialties.bayt.com/en/specialties/q/47871/advantages-and-disadvantages-of-dbms-over-traditional-file-processing-system/</a>

#### Explain structure of DBMS.

- <a href="https://www.geeksforgeeks.org/structure-of-database-management-system/">https://www.geeksforgeeks.org/structure-of-database-management-system/</a>
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- http://dbms-tutorials.blogspot.com/2008/02/structure-of-dbms.html
- https://www.tutorialspoint.com/explain-the-architecture-of-dbms
- <a href="https://www.thecrazyprogrammer.com/2022/03/structure-of-dbms.html">https://www.thecrazyprogrammer.com/2022/03/structure-of-dbms.html</a>
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- <a href="https://www.ques10.com/p/9453/describe-overall-architecture-of-dbms-with-diagram/">https://www.ques10.com/p/9453/describe-overall-architecture-of-dbms-with-diagram/</a>
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# Explain the concept of Super Key, Candidate Key and Primary Key with examples.

- https://www.guru99.com/images/1/100518\_0517\_DBMSKeysPri1.png?
  sa=X&ved=2ahUKEwin\_6bz1\_v7AhWNCKYKHelcAicQ\_B16BAgHEAI
- https://www.guru99.com/dbms-keys.html
- https://www.javatpoint.com/dbms-keys
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- <a href="https://www.ques10.com/p/9473/explain-the-term-super-key-primary-key-candidate-1/">https://www.ques10.com/p/9473/explain-the-term-super-key-primary-key-candidate-1/</a>
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- <a href="https://www.analyticsvidhya.com/blog/2020/07/difference-between-sql-keys-primary-key-super-key-candidate-key-foreign-key/">https://www.analyticsvidhya.com/blog/2020/07/difference-between-sql-keys-primary-key-super-key-candidate-key-foreign-key/</a>
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- <a href="https://www.youtube.com/watch?v=p3yJZH8\_bsc">https://www.youtube.com/watch?v=p3yJZH8\_bsc</a>
- https://www.scaler.com/topics/candidate-key-in-dbms/

### Explain transaction states by giving an example.

- <a href="https://www.tutorialspoint.com/what-are-the-states-of-transaction-in-dbms">https://www.tutorialspoint.com/what-are-the-states-of-transaction-in-dbms</a>
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- <a href="https://beginnersbook.com/2018/12/dbms-transaction-states/">https://beginnersbook.com/2018/12/dbms-transaction-states/</a>
- https://www.guru99.com/dbms-transaction-management.html
- <a href="https://ecomputernotes.com/database-system/rdbms/transaction">https://ecomputernotes.com/database-system/rdbms/transaction</a>
- <a href="https://www.educba.com/states-of-transaction-in-dbms/">https://www.educba.com/states-of-transaction-in-dbms/</a>
- <a href="https://byjus.com/gate/transaction-in-dbms-notes/">https://byjus.com/gate/transaction-in-dbms-notes/</a>

### Explain two phase locking protocol?

- <a href="https://www.tutorialspoint.com/explain-about-two-phase-locking-2pl-protocol-dbms">https://www.tutorialspoint.com/explain-about-two-phase-locking-2pl-protocol-dbms</a>
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- <a href="https://www.codingninjas.com/codestudio/library/two-phase-locking-protocol">https://www.codingninjas.com/codestudio/library/two-phase-locking-protocol</a>
- <a href="https://www.guru99.com/dbms-concurrency-control.html">https://www.guru99.com/dbms-concurrency-control.html</a>
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- <a href="https://edurev.in/studytube/Two-Phase-Locking-Protocol/83dc1aed-7257-4fb1-9964-c307e401abab\_t">https://edurev.in/studytube/Two-Phase-Locking-Protocol/83dc1aed-7257-4fb1-9964-c307e401abab\_t</a>

#### Explain what is data and information with example?

- https://bloomfire.com/blog/data-vs-information/
- <a href="https://byjus.com/biology/difference-between-data-and-information/">https://byjus.com/biology/difference-between-data-and-information/</a>
- <a href="https://www.diffen.com/difference/Data\_vs\_Information">https://www.diffen.com/difference/Data\_vs\_Information</a>
- <a href="https://examples.yourdictionary.com/difference-between-data-and-information-explained.html">https://examples.yourdictionary.com/difference-between-data-and-information-explained.html</a>
- <a href="https://www.geeksforgeeks.org/difference-between-information-and-data/">https://www.geeksforgeeks.org/difference-between-information-and-data/</a>
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# What are different types of user that play different roles in a database environment?

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