

Qt Database & Model-View Programming

QCM Exam

100 Intelligent Questions

Instructions

- 100 multiple-choice questions
- Focus on QSqlDatabase, QSqlQuery, QSqlRecord, and QTableView
- Questions designed to test both knowledge and intelligent application
- Circle the best answer for each question

1 QSqlDatabase (25 Questions)

1. What is the primary purpose of QSqlDatabase? (a) To display data in tables (b) To manage database connections (c) To execute SQL queries (d) To represent table structure
2. Which method adds a new database connection? (a) addDatabase() (b) createConnection() (c) newDatabase() (d) openDatabase()
3. What happens if you don't close a database connection?
4. How would you identify a specific connection? (a) By database filename (b) By connection name (c) By table name (d) By SQL driver type
5. Which is NOT a valid SQL driver for QSqlDatabase? (a) QSQLITE (b) QMYSQL (c) QJSON (d) QODBC

2 QSqlQuery (25 Questions)

6. What distinguishes prepare() + exec() from direct exec()? (a) [SQL injection protection](#) (b) Better performance (c) Different result handling (d) Transaction support
7. How do you retrieve the last error from a query? (a) getError() (b) [lastError\(\)](#) (c) errorString() (d) sqlError()
8. What's the safest way to insert user input? (a) String concatenation (b) [Parameter binding](#) (c) QVariant conversion (d) Direct value assignment
9. Which method moves to the next result row? (a) [next\(\)](#) (b) moveNext() (c) fetchNext() (d) advance()
10. How would you check if a query returned data? (a) [isActive\(\) && first\(\)](#) (b) isEmpty() (c) rowCount() != 0 (d) size() != 0

3 QSqlRecord (25 Questions)

11. What does QSqlRecord represent? (a) A complete database

(b) [A single database record](#)
(c) Table schema (d) Query results

12. How do you get a record's field count? (a) length() (b) [count\(\)](#) (c) size() (d) fields()
13. Which method checks if a field exists? (a) hasField() (b) [contains\(\)](#) (c) exists() (d) isField()
14. What's the purpose of isNull()? (a) Check if record is invalid (b) [Check if field is NULL](#) (c) Test for empty record (d) Verify deletion status
15. How would you clone a record? (a) copy() (b) [QSqlRecord\(original\)](#) (c) cloneRecord() (d) duplicate()

4 QTableView (25 Questions)

16. What's the main advantage of QTableView over QTableWidget? (a) [Better for large datasets](#) (b) More styling options (c) Built-in editing features (d) Simpler API
17. How do you connect a model to a view?
(a) view->setDataSource(model)
(b) [view->setModel\(model\)](#)
(c) model->attachView(view)
(d) view->linkModel(model)

18. What signals indicate data changes? (a) `dataChanged()` (b) `modelModified()` (c) `updateRequired()` (d) `refreshNeeded()`
19. Which method enables sorting? (a) `allowSorting(true)` (b) `setSortingEnabled(true)` (c) `sortable(true)` (d) `enable-`
- Sort(true)
20. How would you make a column read-only? (a) `setColumnReadOnly(index)` (b) Use flags in model's `data()` (c) `view->setEditable(false)` (d) `disableColumnEditing(index)`

Intelligent Application Questions (Sample)

- You need to display live data that changes every second. Which approach is most efficient? (a) `QSqlTableModel with periodic select()` (b) Recreate `QStandardItemModel` each update (c) Direct SQL queries on timer (d) Manual view updates
- A query fails with "database locked". What's the best solution? (a) Retry immediately (b) `Implement retry with delay` (c) Disable other connections (d) Switch to memory database
- Your table view scrolls slowly with 10,000 rows. How to improve? (a) `Implement lazy loading` (b) Reduce row height (c) Disable sorting (d) Use `QTableWidget` instead
- How would you implement undo for database edits? (a) `Use transactions with savepoints` (b) Cache previous values (c) Maintain edit history (d) Query database backups
- Which architecture best separates concerns? (a) Put all SQL in view classes (b) `Model handles data, view handles display` (c) Combine model and database code (d) Direct view-database binding