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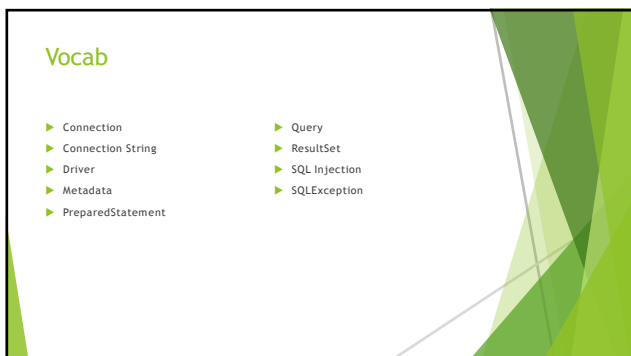
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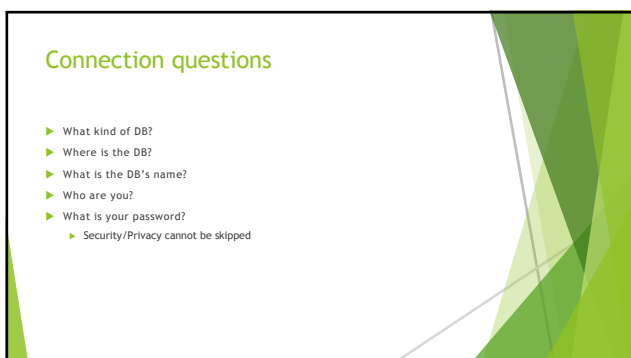
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### ConnectionString

- ▶ A URL to access the database
- ▶ Use the answers from the connection questions to build it
  - ▶ jdbc:driverType://path/to/nameOfDB?user=username&password=password
- ▶ URL interrupts
  - ▶ ?user=
  - ▶ &password=

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### Check String contents AKA validation

- ▶ Can't assume this program would not be used nefariously
- ▶ Create an array of unacceptable content strings
  - ▶ Data Security
    - ▶ DROP
    - ▶ TRUNCATE
    - ▶ OR 1=1
  - ▶ Structure security
    - ▶ GRANT
    - ▶ REVOKE

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### Query Types

- ▶ Modification based
  - ▶ INSERT, UPDATE, DELETE
  - ▶ Use the executeUpdate method
  - ▶ Returns an int
- ▶ Table based
  - ▶ SELECT
  - ▶ Use the executeQuery method
  - ▶ Returns a ResultSet

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### Modify the data

- ▶ Simple DML statements only return an integer based on the amount of rows impacted by the query
- ▶ Validate the query!
- ▶ Create the PreparedStatement with the query on the connection
- ▶ Parameters can be passed to PreparedStatement to make it more generic!
- ▶ Call executeUpdate()
- ▶ Check that the returned count matches the expected count
- ▶ Close the PreparedStatement

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### Retrieve data

- ▶ After query validation your query can be executed
- ▶ Create a PreparedStatement with the query on the connection
- ▶ Call executeQuery()
- ▶ Store the results in a ResultSet
  - ▶ It is **NOT FINISHED!!!**
- ▶ Set the PreparedStatement variable to close on completion
- ▶ Work with the results (while available)

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### Get the MetaData!!!

- ▶ Stored in the ResultSet
- ▶ The titles of the columns and the data types stored therein
- ▶ Indices are based on 1 not 0
- ▶ Only available if the ResultSet is open

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### Process the data

- ▶ SELECT query results are stored in a dynamic structure called a ResultSet
  - ▶ The column count is fixed
  - ▶ The row count is processed as needed to save resources
  - ▶ Use a next call in a loop to consume the results
  - ▶ Once all results are processed close the ResultSet

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### Review

- ▶ Ask questions about the database and who needs to use it
- ▶ Build the connection String
- ▶ Validate all queries before running
- ▶ Two types of Queries: update, table-based
  - ▶ Modify with `executeUpdate()`
  - ▶ Retrieve with `executeQuery()`
- ▶ Retrieve data
  - ▶ Metadata
  - ▶ ResultSet
  - ▶ Process and close

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