Short Notes

# 1. SQL Injection

Definition: A type of cyber attack where an attacker inserts malicious SQL code into input fields to manipulate the database.  
  
Goal: Steal, delete, or modify sensitive data.  
  
Example:  
SELECT \* FROM users WHERE username = 'admin' -- ' AND password = '123';  
The '--' comments out the rest of the query.  
  
Prevention:  
- Use prepared statements or parameterized queries.  
- Validate and sanitize user inputs.  
- Use ORM tools (like Entity Framework, Hibernate).

# 2. Built-in Stored Procedure

Definition: Predefined SQL procedures provided by the database system to perform common tasks.  
  
Examples in SQL Server:  
- sp\_help → Gives details about a table.  
- sp\_rename → Renames a database object.  
- sp\_databases → Lists all databases.  
  
Use Cases:  
- Manage metadata.  
- Automate admin tasks.  
- Simplify repetitive operations.

# 3. Class Diagram (UML)

Definition: A type of UML (Unified Modeling Language) diagram used to represent the structure of a system.  
  
Includes:  
- Classes (represented as boxes).  
- Attributes (variables).  
- Methods (functions).  
- Relationships (inheritance, association, aggregation).  
  
Purpose:  
- Visualize and design object-oriented systems.  
- Communicate class structure among developers.