

CSE – 302

Database Management System Sessional

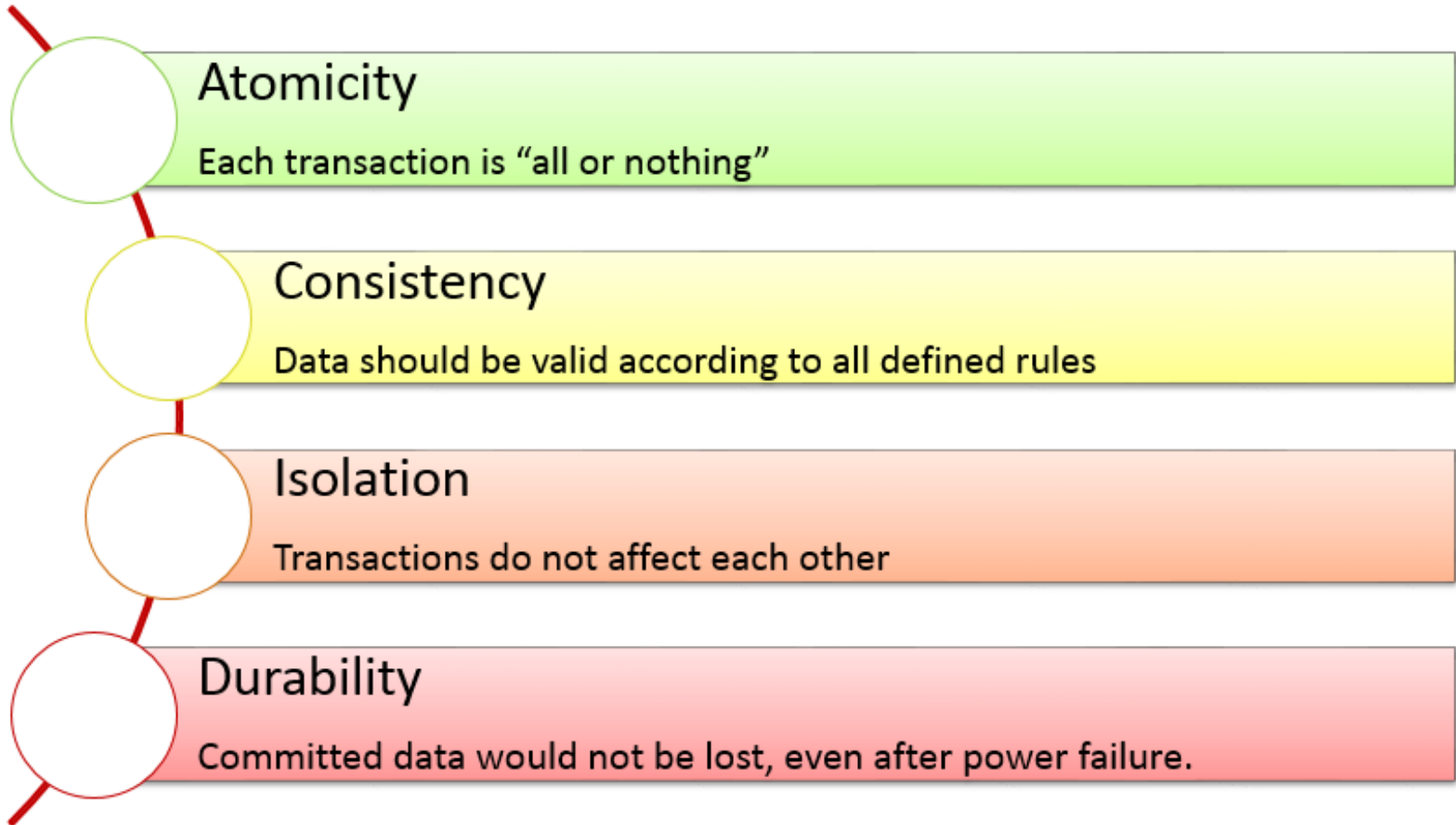
TRANSACTION

Database Transactions

- A transaction means one or more SQL statements which together make a unit of work.
- All SQL statements should successfully execute or fail together.
- In Oracle database, a transaction is automatically started with the first DML statement use executes.

ACID Properties

ACID Properties



Ending Conditions of Database Transactions

The already-started transactions will end whenever one of the following events occurs:

- A COMMIT or ROLLBACK statement is issued.
- A DDL or DCL statement is issued (automatic COMMIT)
- The user exits SQL*DEVELOPER or SQL*PLUS (automatic COMMIT)
- The system crashes (automatic ROLLBACK) or SQL*PLUS stopped unexpectedly (automatic ROLLBACK).

After one transaction ends,
another transaction will start with the execution
of next DML statement.

Command to Control the Transaction

- COMMIT
- ROLLBACK
- SAVEPOINT
- SET TRANSACTION

COMMIT

- The COMMIT statement is used to make changes permanent to a database during the current transaction and to make visible to other users.
- This statement ends any existing transaction in the session.

Commit Syntax :

COMMIT;

COMMIT

```
BEGIN
    UPDATE employee SET salary = 10000
    WHERE EMPLOYEE_NAME='E_C';
    COMMIT;
END;
/
```


ROLLBACK

- To roll back the changes
- It undoes the results of all DML operations executed in the current transaction.
- It also ends the current transaction. The state of the tables will be restored in the previous values before the current transaction started.

ROLLBACK

Rollback Syntax :

ROLLBACK;

ROLLBACK [To **SAVEPOINT_NAME**];

SAVEPOINT

- Savepoint names marks the current point in the processing of a transaction.
- Savepoints let you rollback part of a transaction instead of the whole transaction.

Syntax:

`SAVEPOINT savepoint_name;`

SAVEPOINT

```
BEGIN
    SAVEPOINT dup_found;

    UPDATE employee SET e_no=1
    WHERE empname = 'Forbs ross'

EXCEPTION
    WHEN DUP_VAL_ON_INDEX THEN
        ROLLBACK TO dup_found;
END;
/
```

AUTO COMMIT

- Set AUTOCOMMIT ON to execute COMMIT Statement automatically.
- No need to execute COMMIT statement every time.

Syntax:

```
SET AUTOCOMMIT OFF;
```



INTERMISSION

