

FACULTY OF ENGINEERING & TECHNOLOGY

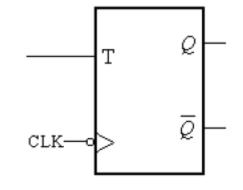
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FLIP-FLOP

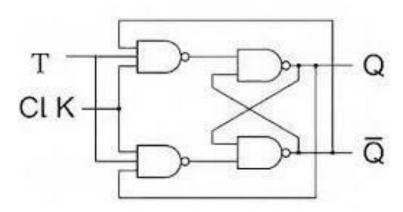
T Flip Flop - Symbol & Truth Table

- The T flip flop has only the Toggle and Hold Operation.
- If Toggle mode operation. The output will toggle from 1 to 0 or vice versa.





| Т | Flip | Flop | -Logic | Circuit |
|---|------|------|--------|---------|
|---|------|------|--------|---------|



| Input | Previous | Next Output | Mode of |
|-------|----------|-------------|------------|
| T | output Q | Q | Operation |
| 0 | 0 1 | 0 1 | Store |
| 1 | 0 | 1 | Complement |
| 1 | 1 | 0 | |

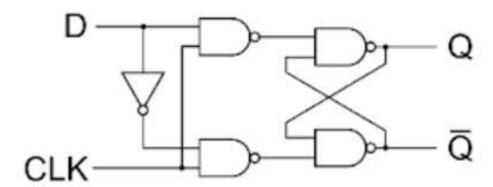
FLIP-FLOP

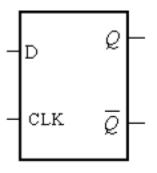
D Flip Flop - Symbol & Truth Table

- Also Known as Data Flip flop
- Can be constructed from RS Flip Flop or JK Flip flop by addition of an inverter.
- Inverter is connected so that the R input is always the inverse of S (or J input is always complementary of K).
- The D flip flop will act as a storage element for a single binary digit (Bit).

U

D Flip Flop –Logic Circuit





| D_n | $Q_{\mathbf{n}}$ | Q _{n+1} |
|-------|------------------|------------------|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |