Course 1 : Electronics for Beginners

Chapter3 : Components

1/ Passive Components

- **Resistors**:
- Function: Reduce current, divide voltage.
- Color codes to determine resistance value.
- **Capacitors**:
- How they store energy and their role in filtering noise.
- Charging and discharging behavior.
- **Inductors**:
- Basics of inductance, applications in filters, and energy storage.

2/ Active Components

1. **Diodes**:
   1. Types: Standard, Zener, Schottky.
   2. Applications: Rectifiers, voltage regulation.
2. **Transistors**:
   1. Bipolar Junction Transistors (BJTs): NPN and PNP.
   2. Field Effect Transistors (FETs): MOSFET basics.
   3. Applications: Amplifiers, switches.
3. **Integrated Circuits (ICs)**:
   1. Types: Logic gates, operational amplifiers (op-amps).
   2. Introduction to the 555 timer IC.