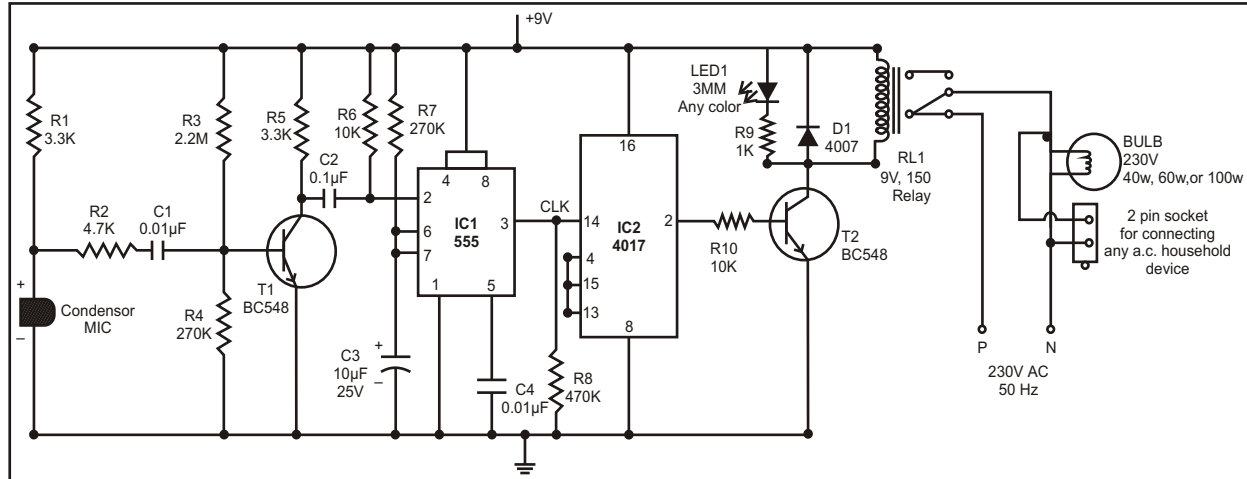# CLAP SWITCH

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Here is a clap switch which is used to turn ON/OFF any appliance connected to it. The circuit changes its output state when you clap near the condensor mic.

Working:

The Clap sound sensed by condenser microphone is amplified by transistor T1. The amplified signal provides a pulse to pin 2 of IC1, triggering IC1. IC1, commonly used as a timer, is wired here as a monostable multi vibrator. Triggering of IC1 causes pin 3 to go high it remains high for a certain time period depending on the selected values of R7 & C3. This 'ON' time (T) of IC1 can be calculated using the following relationship T=1.1R7 C3 seconds. Where R7 is in Ohms & c3 in microfarads. On giving a clap, output pin 3of IC1 goes high & remains in this standby position for the preset time. This provides a pulse at clock pin 14 of decade counter IC 4017 (IC2). Decade counter IC2 is wired here as a bistable.

Each pulse applied at clock pin 14 changes the output state at pin2 of IC2 because Q2 is connected to reset pin 15. The high output at pin 2 drives transistor T2 & also energises relay RL1. LED1 indicates activation of relay RL1 & ON/OFF status of the appliance. A free-wheeling diode (D1) prevents damage of T2 when relay de-energises.