# USB Forensics and Pentesting

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Certifications:
http://www.securitytube-training.com

Pentester Academy:
http://www.PentesterAcademy.com

# Duplication: Blinking LEDs

# Microcontroller GPIO

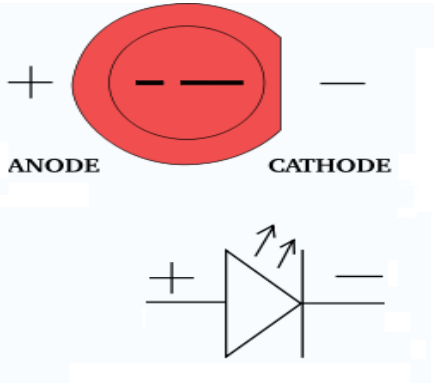
- Done by ports not pins
- Many pins can have more than one function
- Multiplexer must be programmed to provide non-default function
- Output may be 3.3V or 5.0 V
- Input may be 3.3V, 5.0V or 5V tolerant 3.3V

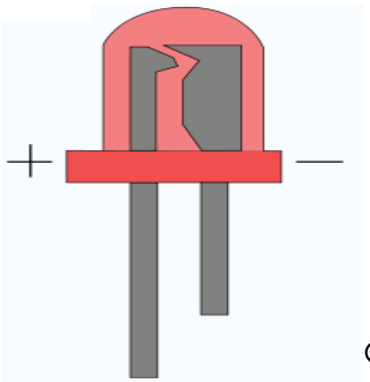
# VNC2 GPIO

- Ports A, B, C, D, and E
- Some ports have extra capabilities such as interrupt handling
- Each pin must be set to input or output with multiplexer
- Port mask must also be set before use
- Writing a value to the port sets (output) lines high or low

# The One Minute LED Tutorial

- Light emitting diodes are efficient lights
- Electricity flows in one direction (diode)
- Voltage drops a standard amount which depends on the color (2-4 V)
- Current determines brightness
  - Some microcontrollers require current limiting resistors
  - Several calculators online ledcalc.com



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