

## 1. VGA (Video Graphics Array)

Think of VGA as the "**Legacy**" connection. It was the standard from 1987 until the early 2000s.

- **Signal Type: Analog.** This means the signal is sent as a wave, which can be affected by interference (noise) from other electronics nearby.
  - **Video Only:** It does **not** carry sound. You need a separate cable for audio.
  - **Physical:** A blue, trapezoid-shaped plug with 15 pins. It usually has screws to lock it into place.
  - **Best Use:** Connecting to old projectors or "vintage" office monitors. It struggles with anything higher than 1080p resolution.
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## 2. HDMI (High-Definition Multimedia Interface)

HDMI is the "**Universal**" standard. It's what you find on almost every TV, game console, and laptop today.

- **Signal Type: Digital.** It sends data as 1s and 0s, resulting in a perfectly sharp image with no interference.
  - **Video + Audio:** It carries both high-definition video and multi-channel sound in one cable.
  - **Special Feature: ARC (Audio Return Channel).** This allows a TV to send audio *back* to a soundbar using the same cable.
  - **Best Use:** Home theater setups, TVs, and general everyday computing.
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## 3. DisplayPort (DP)

DisplayPort is the "**Pro/Gamer**" choice. It looks similar to HDMI but has one flat side and one sloped side.

- **Signal Type: Digital.** Similar to HDMI, but designed specifically for computer-to-monitor connections rather than TVs.
- **High Performance:** It supports the highest **refresh rates** (for smoother gaming) and highest resolutions (like 8K).
- **Special Feature: Daisy Chaining.** You can plug one monitor into your computer, then plug a *second* monitor into the first one using just one port on your PC.
- **Best Use:** High-end gaming PCs and professional workstations with multiple monitors.