

## 4. BOOTSTRAP FRAMEWORK

### What is Bootstrap?

Bootstrap is a pre-built CSS framework that gives you ready-made components.

It's like LEGO for websites - you use pre-made pieces instead of building everything from scratch.

### Why Use Bootstrap?

- Saves time - don't write CSS from scratch
- Responsive by default - works on all devices
- Professional look - built-in modern design
- Consistent styling - same look across components
- Easy to use - just add class names

### Bootstrap Grid System:

#### The container:

- Bootstrap divides screens into 12 columns
- You can make components take 1-12 columns
- On desktop: col-md-6 means "take 6 columns (half width)"
- On mobile: Full width automatically

#### Example:

```
<div class="col-md-6"> Box 1 </div>
```

```
<div class="col-md-6"> Box 2 </div>
```

On desktop: 2 boxes side by side (each 50% width)

On mobile: 2 boxes stacked vertically (each 100% width)

Our Example: Farm Management Dashboard

### **What We Built:**

- 4 stat boxes showing farm metrics
- Box 1: Total Yield (1,248 kg)
- Box 2: Fertilizer Used (342 L)
- Box 3: Water Usage (5,600 L)
- Box 4: Pest Issues (2)

### **Bootstrap Classes We Used:**

- col-md-6 - Makes boxes take half width on medium screens
- h-100 - Makes all boxes same height
- border-left - Colored left border on each box
- text-muted - Gray text for labels
- fw-bold - Bold font weight

### **Responsive Behavior:**

On Desktop: 2x2 grid (2 boxes per row)

On Tablet: 2x2 or 1x4 (depends on tablet size)

On Mobile: 4x1 stacked (1 box per row)

### **The Magic:**

Bootstrap automatically handles all this with just class names.

You don't write any CSS - it's already included.

Just add class="col-md-6" and it handles the responsive part.

**Why This Matters:**

Bootstrap lets developers build websites 10x faster.

It's industry standard - most companies use it.

Great for building MVPs (Minimum Viable Products) quickly.