

# Advance Programming Techniques (APT)

Lecture # 22

**Ehtisham Rasheed**

Department of Computer Science  
University of Gurjat, Gurjat

# Introduction to Container Controls

- In Windows Forms, **container controls** are special controls that can hold other controls inside them
- They help organize the user interface and make layout management easier
- Common container controls include:
  - Panel
  - GroupBox
  - TabControl
  - FlowLayoutPanel
  - TableLayoutPanel

In this lecture, we'll focus on **GroupBox** and **Panel**

# What is a GroupBox?

- A **GroupBox** is used to group related controls visually inside a bordered frame with a title (caption)
- All controls in a **GroupBox** move together when the **GroupBox** is moved
- **Key Features**
  - Has a **border** and **caption** (**Text** property)
  - Used for **logical grouping** of related controls, e.g. gender selection, address fields, etc
  - Commonly used with **RadioButtons**, **CheckBoxes**, or **TextBoxes** that belong to the same category
  - Does **not** support scrolling

# What is a Panel?

- A **Panel** is a rectangular container that can hold other controls, often used for layout organization or dynamic UI content
- All controls in a **Panel** move together when the **Panel** is moved
- **Key Features**
  - Does **not** have a caption
  - Can be **scrollable** (if AutoScroll = true)
  - Useful for **grouping controls** logically or visually — especially in dynamic interfaces
  - Often used for **sections that appear/disappear** (e.g., settings area, navigation menu)
  - Common for **dynamic content loading** and **runtime control management**

# GroupBox vs. Panel – Comparison Table

Feature	GroupBox	Panel
Caption	Has a caption (Text Property)	No caption
Border	Always visible	Optional (BorderStyle)
Purpose	Group related input controls logically	Layout organization or scrolling area
Scrolling	✗ Not supported	✓ Supported (AutoScroll = true)
Use Case	Gender selection, contact info grouping	Dashboard sections, scrollable areas