Table 3.1.1: Types of embedded systems

Category	Types of embedded system	Description	Examples
Based on performance and functional requirements	Real-time embedded system	A real-time system responds to externally generated inputs within a specific time. These systems react quickly to critical situations. Real-time systems use input and output interfaces and sensors to control the external environment. A well-structured architecture, software, and good hardware are required to avoid performance failure when developing a real-time embedded system.	• Microwave ovens • Digital cameras • MP3 players • Video game consoles • Temperature measurement systems
	Standalone embedded system	A standalone embedded system does not need any interconnected computer. The input data is processed, and the output data is displayed on the screen or transferred to any connected device.	• Robots • Computer games • Traffic control system including airlines, road, railway • Controlling heat, elevators, lights, and doors in buildings • Radio, satellite, and telephone communication • Patient monitoring system • Military usage like for tracking
	Network embedded system	Networked embedded systems are connected to the network to give an output to the attached resources. The devices in the networked embedded system are connected to the network with network interfaces. The network can be a local area network (LAN) or a wide area network (WAN), with either wireless or wired connections.	• Personal digital assistants (PDA) • Cellular phones • MP3 players • Digital cameras
	Mobile embedded system	Mobile embedded systems require limited resources, including memory. These embedded systems are small, portable, and easy to use.	An example of a networked embedded system is a smart home system, with different sensors (light, water, AC, smoke, or motion detectors) networked together through LAN and control over the

LIVEWORKSHEETS