**Document IVR functionalities (DTMF handling, voice prompts, call routing)**

**1. Introduction**

An Interactive Voice Response (IVR) system is a telephony technology that enables callers to interact with automated systems using keypad inputs (DTMF) or spoken commands. IVRs are widely used in telecom, banking, customer service, and other industries to automate routine queries such as balance checks, service requests, and call transfers.

The core functionalities of an IVR system are:

**DTMF Handling**

**Voice Prompts**

**Call Routing**

Each of these functions contributes to creating a seamless and efficient user experience.

**2. DTMF Handling**

**2.1 Definition**

DTMF (Dual-Tone Multi-Frequency) refers to the tones generated when a caller presses keys (0–9, \*, #) on a telephone keypad. Each key generates a unique pair of frequencies that the IVR system can detect.

**2.2 Functionality**

The IVR system listens for DTMF tones during a call.

Each tone is mapped to a specific menu option.

The detected tone triggers the system to perform the corresponding action.

**2.3 Example**

Prompt: “Press 1 for Balance Inquiry, Press 2 for Recharge, Press 3 to talk to a Customer Agent.”

Caller presses 1 → IVR retrieves account balance and plays: “Your current balance is ₹450.”

DTMF ensures even non-smartphone users can access automated services reliably.

**3. Voice Prompts**

**3.1 Definition**

Voice prompts are the pre-recorded or dynamically generated audio messages played by the IVR to guide the caller. They serve as the system’s voice and ensure that the caller knows what options are available.

**3.2 Functionality**

Provide clear instructions to the caller.

Can be static (fixed recordings) or dynamic (generated using Text-to-Speech).

Help reduce confusion and guide callers efficiently through the menu.

**3.3 Example**

**Static prompt:** “Welcome to XYZ Telecom. Press 1 for Billing, Press 2 for Technical Support.”

**Dynamic prompt:** “Hello Neha, your current balance is ₹450, valid until 30th August.”

**Well-designed voice prompts improve customer satisfaction and reduce repeat calls.**

**4. Call Routing**

**4.1 Definition**

Call routing refers to directing a caller to the appropriate system, department, or live agent based on their input (DTMF or speech).

**4.2 Functionality**

Interprets the caller’s input.

Applies business rules to determine the correct destination.

Transfers the call automatically to backend systems or customer agents.

**4.3 Example**

Caller presses 3 → IVR routes the call to a Customer Care Agent.

Caller says: “I want technical support.” → IVR detects intent and routes to Technical Support queue.

**Proper call routing minimizes waiting times and ensures that the caller reaches the right place quickly.**

**5. Importance of IVR Functionalities**

Together, these three functionalities form the backbone of an IVR system:

DTMF handling makes navigation simple for any caller.

Voice prompts provide guidance and clarity.

Call routing ensures efficient resolution by connecting callers to the right resource.

**This combination reduces the workload of human agents, improves customer satisfaction, and ensures efficient handling of high call volumes.**

**6. Conclusion**

IVR systems depend on three primary functions: DTMF handling, voice prompts, and call routing. These ensure smooth customer interactions, reduce service costs, and provide consistent and scalable support.