**Project Design Phase : Solution Architecture**

|  |  |
| --- | --- |
| **Date** | **25 june 2025** |
| **Team ID** | **LTVIP2025TMID37165** |
| **Project Name** | **Citizen AI – Intelligent Citizen Engagement Platform.** |
| **Maximum Marks** | **4 Marks** |

**Solution Architecture Overview:**

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

* Find the best tech solution to solve existing business problems.
* Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
* Define features, development phases, and solution requirements.

Provide specifications according to which the solution is defined, managed, and delivered

**Purpose of the Architecture:**

- To enable rural and urban citizens to easily access government services using voice/text in their own language.  
- To bridge the digital divide through AI-powered, accessible interfaces.  
- To scale intelligently while maintaining a personalized and human-like experience.

**Architecture Features:**

- Frontend Channels: Web, Mobile App, WhatsApp Chatbot, IVR  
- Middleware: Natural Language Understanding, Context Engine, Translation Layer  
- Backend: Knowledge base (schemes, documents), Profile Manager, Integration APIs (DigiLocker, MyGov)  
- Data Flow: User → Input Preprocessor → NLP Engine → Context Manager → Response Generator → User  
- Data Storage: Cloud database for sessions, profile data, and analytics  
- Security: Role-based access, data encryption, API authentication

**Phases of Development:**

1. Phase 1: Hindi + English support, government scheme guidance, basic FAQs  
   2. Phase 2: Add document verification, multilingual voice interface, user profile memory  
   3. Phase 3: Integration with DigiLocker, chatbot personalization, analytics dashboard  
   4. Phase 4: Voice-based IVR for low-internet zones, third-party platform integrations

**Example - Solution Architecture Diagram:**

