

Interview Scheduling Bot

Basis Vectors Hackathon 2025

Team:

Karan Sahota, Pratham Malviya, S Praneeth Nanabolu

Date: March 2025

Meet Our Team

Team Members:

1. **Karan Sahota**

- Role: Full Stack Developer & Project Lead
- Brief description: **Led the development of core functionality and architecture**

2. **Pratham Malviya**

- Role: Documentation & Testing
- Brief description: **Ensured comprehensive documentation and testing protocols**

3. **S Praneeth Nanabolu**

- Role: UI/UX Design Support
- Brief description: **Contributed to the user interface design and experience**

The Problem: Coordinating Interviews for High Volume hiring is inefficient & Time Consuming

Key Points:

- **Time Consuming Process**

- Recruiters spend upto 30% of their time coordinating schedules
- Multiple back-and-forth emails for each candidates

- **Error Prone**

- Scheduling conflicts & double bookings
- Miscommunications about time zones and availability

- **Administrative Burden**

- Manual tracking of multiple candidates
- No centralised system for interview management

Our Solution: WhatsApp Scheduling Bot

Key Value Propositions:

- An AI-powered WhatsApp bot that automates the entire interview scheduling process
- From Initial contact to calendar invitation - without recruiter intervention

Workflow

Before/After Comparison:

Before (Traditional Process):

- Multiple emails back and forth
- Days of waiting
- Manual calendar checking
- Manual Invitation sending

Recruiter → Email Candidate → Wait → Candidate Responds →
Recruiter Checks Calendar → Propose Times → Wait →
Candidate Responds → Conflicts → Propose New Times →
Wait → Agreement → Manual Calendar Invite

After (With Our Bot):

- One WhatsApp conversation
- Minutes instead of days
- Automated availability matching
- Instant calendar invitations

Candidate → WhatsApp Bot → Collects Info →
Shares Availability → Bot Matches Calendar →
Candidate Selects Slot → Automatic Calendar Invite

Key Benefits:

- Time Efficiency: 90% reduction in scheduling time
- 24/7 Availability: Candidates can schedule anytime
- Improved Experience: Natural conversation flow
- Reduced Workload: Frees recruiters for high-value tasks

Key Functionality

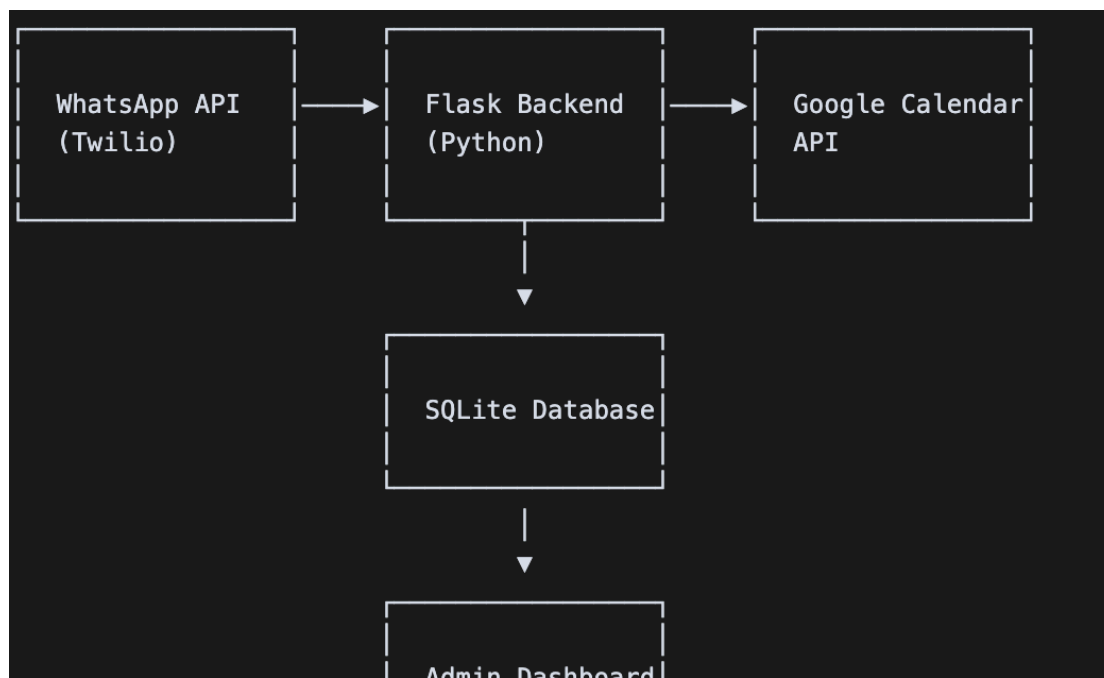
Main Features:

- Conversational AI interface
 - Natural language interaction via WhatsApp
 - Feels like texting a human recruiter
- Intelligent Availability Parsing
 - Understands statements like Monday afternoon between 2-4 pm
 - Converts natural language to structured time slots
- Google Calendar Integration
 - Automatically checks recruiter availability
 - Creates and sends calendar invitations
- Admin Dashboard For Recruiters
 - Complete overview of all scheduled interviews
 - Manage candidates and interview status
- Multi-User Support
 - Handles multiple candidates simultaneously
 - Works when candidate even share devices

High Level Architecture

Components Description

Architecture Design



- WhatsApp API (Twilio)
 - Handles messaging with candidates
- Flask (Backend)
 - Core application logic and NLP
- Google Calendar API
 - Manages scheduling and invitations
- SQLite Database
 - Stores candidate and interview data

•

Demo: See Our Solution In Action

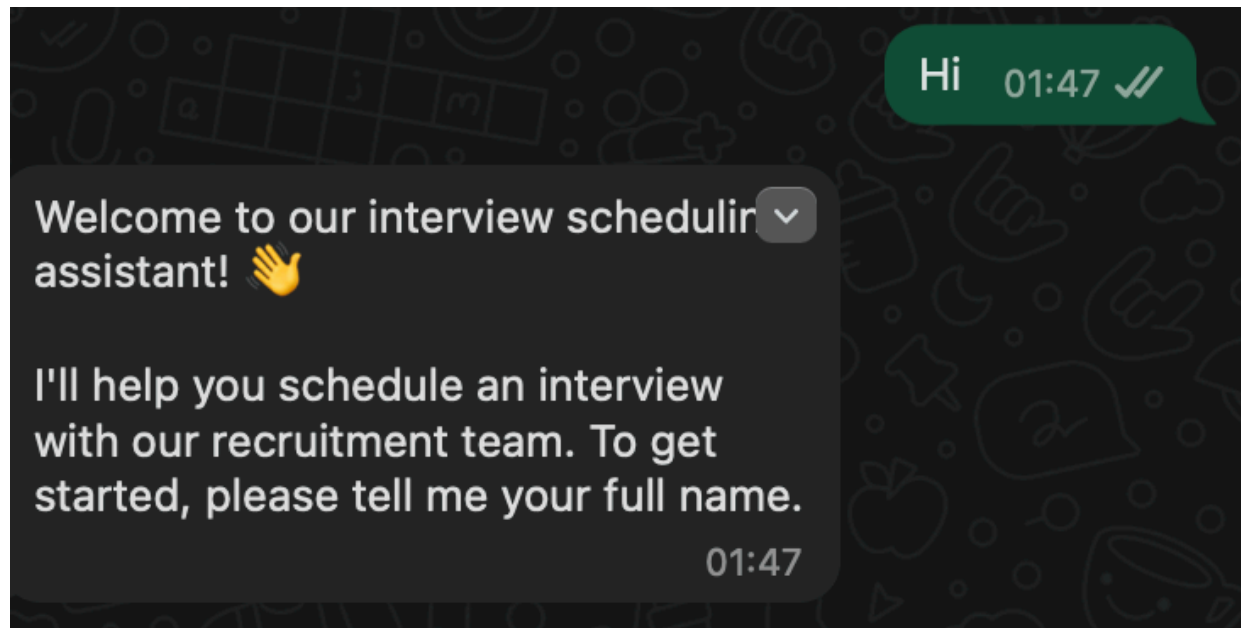
Demo Overview:

- We'll see both the candidates and recruiters perspectives

What you'll see:

- **Candidate experience via WhatsApp**
 - Initial contact and information collection
 - Availability sharing and slot selection
 - Confirmation and calendar invitation
- **Recruiter Experience via Dashboard**
 - Interview overview and management
 - Candidate information access
 - Calendar integration
- **Key Points To Watch For:**
 - Natural language understanding
 - Seamless calendar integration
 - User-friendly interfaces
 - Error handling capabilities

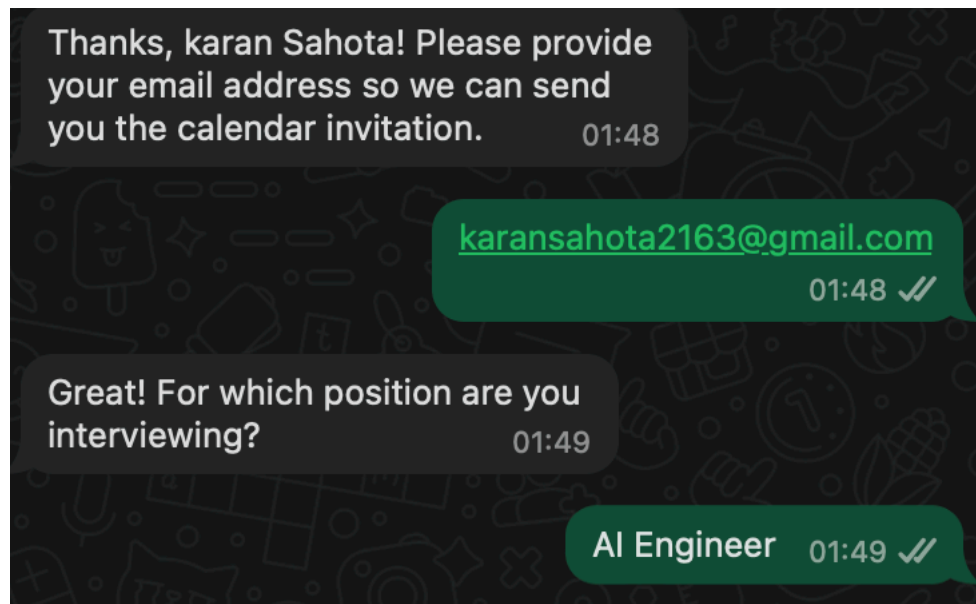
Demo: Candidate Experience - Initial Contact



Key Features Highlighted:

- User Friendly Interface
 - Familiar WhatsApp environment
- Conversational AI
 - Natural language interaction
- Guided Process
 - Clear instructions for the guidance

DEMO: CANDIDATE EXPERIENCE - INFORMATION COLLECTION



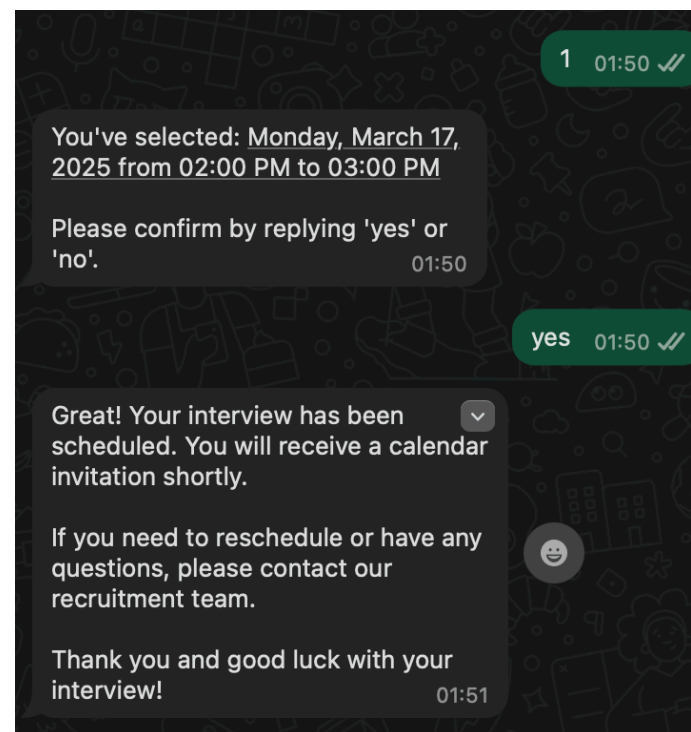
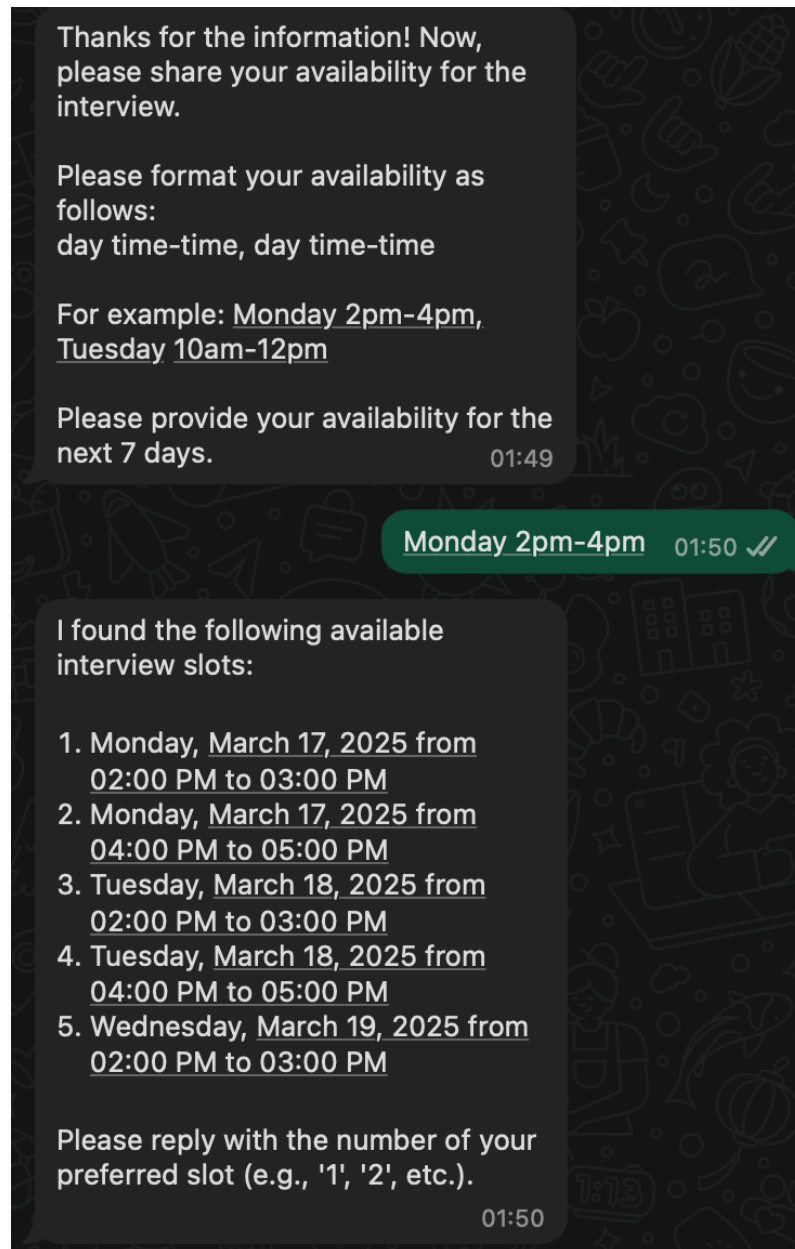
Key Features Highlighted:

- Contact Awareness:
 - Bot remembers candidate informations
- Flexible Input Handling:
 - Understands various response formats
- Confirmation Feedback:
 - Validates information with candidate

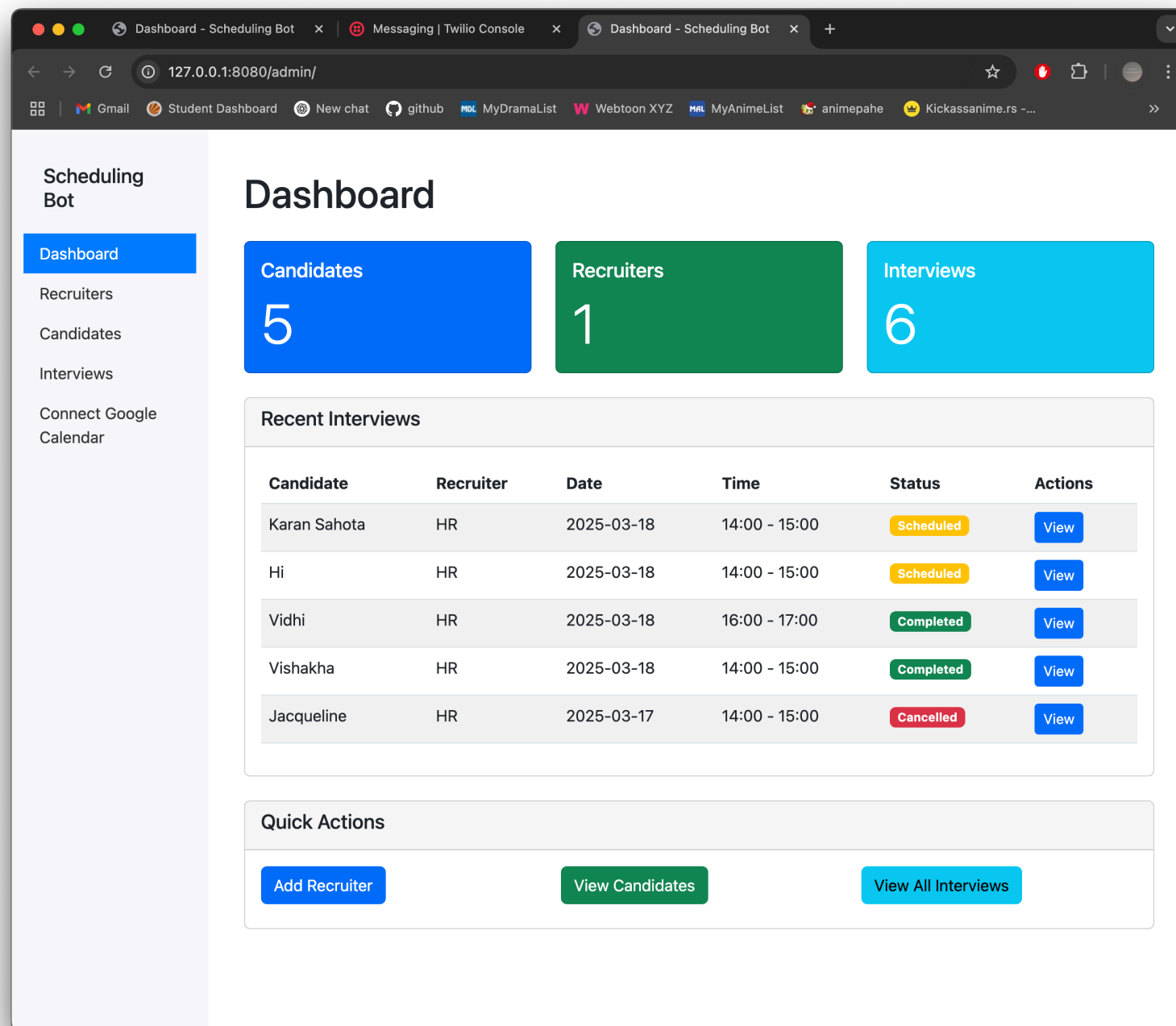
DEMO: CANDIDATE EXPERIENCE

Key Features Highlighted:

- Natural Language Understanding:
 - Bot remembers candidate slot
- Smart Slot Generation :
 - Matches candidate and recruiters availability
- Complete Interview Schedule;:
 - Sends a message to confirm that it is scheduled



DEMO: RECRUITER EXPERIENCE - ADMIN DASHBOARD SLIDE



Key Features Highlighted:

- Centralised Mangement:
 - All interviews in one place
- Status Tracking:
 - Monitor Interview Progress
- Quick Actions:
 - Manage interviews efficiently

DEMO: RECRUITER EXPERIENCE - INTERVIEW DETAILS SLIDE CONTENT

The screenshot displays a web application interface for managing interview details. The browser's address bar shows the URL `127.0.0.1:8080/admin/interviews/6`. The sidebar on the left contains the following navigation items: **Scheduling Bot**, **Dashboard**, **Recruiters**, **Candidates**, **Interviews**, **Connect Google Calendar**, and **Calendar**. The main content area is titled **Interview Details** and includes a **Back to Interviews** button. It is divided into three panels:

- Interview Information:**
 - ID:** 6
 - Date:** Tuesday, March 18, 2025
 - Time:** 02:00 PM - 03:00 PM
 - Status:** Scheduled
 - Calendar Event:** No calendar event
 - Created:** 2025-03-16 20:59
- Candidate Information:**
 - Name:** Karan Sahota
 - Email:** karansahota2163@gmail.com
 - Phone:** +919073018073
 - Position:** AI engineer
 - Status:** Pending
- Recruiter Information:**
 - Name:** HR
 - Email:** karanwhat3691@gmail.com
 - Calendar ID:** primary

At the bottom, the **Actions** section contains four buttons: **Mark as Completed** (green), **Cancel Interview** (red), **Create Calendar Event** (blue), and **Email Candidate** (blue).

Key Features Highlighted:

- Add Calendar Event:
 - Automatically creates a calendar event and sends to both
- Overview Of Interview:
 - Understand the details of the candidate
- Confirmation Interview:
 - Marks as completed when the interview is done

CORE COMPONENTS

1. Conversation Management System

Manages the entire conversation flow using a state machine approach. Tracks where each user is in the process and maintains context across multiple messages.

2. Availability Parser

Custom natural language processing engine that converts casual time expressions into structured datetime objects. Handles various formats and ambiguities intelligently.

3. Calendar Integration

Securely connects with Google Calendar to check availability, create events, and send invitations. Handles authentication and permission management.

4. Database Architecture

Stores all candidate information, conversation states, and interview details in a relational database. Ensures data integrity and persistence throughout the process

5. Admin Interface

Provides recruiters with a comprehensive dashboard to view and manage all interviews. Offers intuitive controls for calendar management and candidate tracking.

TECHNICAL IMPLEMENTATION

Technology Stack:

Programming Languages:

1. Python (Backend)
2. HTML/CSS/JavaScript (Frontend)
3. SQL (Database queries)

Infrastructure:

1. SQLite Database
2. Ngrok for webhook tunneling
3. Environment variable configuration

Frameworks & Libraries:

4. Flask (Web framework)
5. SQLAlchemy (ORM)
6. Twilio API (WhatsApp)
7. Google Calendar API
8. Jinja2 (Templates)

AI Components:

9. Custom NLP for availability parsing
10. State machine for conversation flow
11. Context management techniques
12. Pattern recognition for entity extraction
13. Environment variable configuration

BENEFITS AND IMPACT

Key Metrics:

- Time Savings: "90% reduction in scheduling time"
- Efficiency: "One conversation vs. 5-10 emails"
- Availability: "24/7 scheduling capability"
- Scalability: "Handles multiple candidates simultaneously"
- User Experience: "Professional, friction-free process"

Business Impact:

- Recruiter Productivity: "Frees recruiters for high-value tasks"
- Candidate Experience: "Modern, responsive scheduling process"
- Hiring Efficiency: "Reduced time-to-hire"
- Cost Savings: "Reduced administrative overhead"

Visual Elements:

- Use charts or graphs to visualize the impact
- Before/after comparisons of key metrics
- Icons representing each benefit

THANK YOU

SUMMARY

The Interview Scheduling Bot automates the entire interview scheduling process, transforming days of back-and-forth emails into a single 5-minute conversation.

Key Benefits:

- Reduces scheduling time by 90%
- Improves candidate experience with natural conversation
- Frees recruiters from administrative tasks
- Provides 24/7 scheduling capability
- Centralizes interview management

Problem Solved:

We've eliminated the inefficient, time-consuming, and error-prone traditional interview scheduling process, replacing it with an intelligent, automated solution that benefits both candidates and recruiters.

Value Delivered:

Our solution delivers immediate ROI through time savings, improved candidate experience, and reduced administrative burden, ultimately contributing to a more efficient hiring process.

GitHub Link: <https://github.com/karan3691/scheduling-bot>