Dynamic AI Chatbot System for Multiple Businesses

An Agent Leveraging Voiceflow and Airtable **Simon Campa**

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1. Overview & Competition Criteria Alignment

1. **Innovation (Novelty)**
    - This system uses **one** AI agent setup (two Voiceflow projects) to power **multiple** business-specific chatbots, each with its own data. A unique ID ensures real-time, custom responses for any organization—demonstrating a novel, multi-tenant structure.
2. **Functionality (AI Agent Performance)**
    - **Component A** handles user authentication (login/signup), data collection, and updates in Airtable.
    - **Component B** uses the unique ID to retrieve business details for end-user interactions.
3. **Usability (Ease of Use & Implementation)**
    - Non-technical business owners can sign up, enter their details, and **instantly receive a shareable link.**
    - Updating any field (e.g., phone number) only requires a brief natural language interaction—no coding or re-deployment required.
4. **Impact (Real-World Problem Solving)**
    - Empowers small or non-technical businesses (e.g., dental clinics) to have a custom chatbot in minutes—solving the hurdle of expensive dev costs or rigid FAQ bots.
    - The approach scales to many business niches—transforming how multiple chatbots are deployed at once.
5. **Presentation (Comprehensive Documentation)**
    - The following sections detail **each workflow** (Component A: Registration Process, Login Process and Intent, Data Collection, Data Update. Component B: General flow), plus highlight real-world usage and future expansion potential.

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2. Core Agent Workflows

2.1 Component A (Data Collection & Management)

A. Welcome Message Flow

- **Function**: Greets the user (business owner). Offers two choices:
    1. **Sign Up** (Registration process)
    2. **Log In** (Login process)

B. Registration Process

1. **Prompt**: Asks for email + PIN.
2. **Airtable**: Creates a new record in “Users” table. Generates a **Business/Deployment ID** (UUID).
3. **Deployments**: Also creates a linked record in “Deployments,” tying that ID to the new user.

C. Data Collection Process

1. **Asks** the user for essential business info (e.g., name, phone, operating hours, services, address, etc.).
2. **AI Blocks** can refine or confirm each field.
3. **Airtable**: Patches each field in the “Deployments” table by referencing the unique Deployment ID.
4. **Deployment Link**: At the end, the system returns a URL with a parameter like `?id=<UUID>` pointing to Component B.

D. Login Process and Intent

1. **User** provides email/password.
2. **Voiceflow** checks the “Users” table for matching credentials.
3. **Retrieves** the associated Business/Deployment ID to confirm the user’s data.
4. **Offers** editing options.
5. **Intent** recognition.

E. Update Data Process (

1. **Message**: “What would you like to change about the services? Remember, only data related to names, duration, and pricing. ”
2. **User states**: “Change the price of Teeth Cleaning to $150”
3. **Voiceflow** calls Airtable (PATCH) with the new price.
4. **Confirmation**: “The business services have been successfully updated!”

*(All changes reflect **immediately** for the deployed chatbot after restarting the chat, ensuring dynamic updates.)*

2.2 Component B (Dynamic Deployed Chatbot)

1. **Initialization**
    - **Parses** the `?id=<UUID>` from the URL.
    - **API** call to Airtable “Deployments” table, retrieving fields for that specific business ID.
2. **User Queries**
    - Examples: “What are your hours?” / “Tell me more about your services.”
    - The bot uses stored fields (hours, services, etc.) to provide real-time answers.
    - If multiple fields are relevant, an AI block merges them into a cohesive response.
3. **Real-Time Reflection**
    - If the owner updates a detail in Component A, Component B fetches the updated data **instantly—no redeployment** required; just start a new chat..

*(The website is mobile-friendly, reinforcing the idea of **instant** usability and the ability to share the chatbot with customers just 5 minutes after setup.)*

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3. Why a Dental Clinic Example (But Not Limited to It)

- **Dental** is just one **showcase.** The same architecture works for **restaurants** (menu/hours), **gyms** (classes/membership), or **any** service business.
- **Universal Data Flow**: *Component A + Airtable + Component B* can dynamically build chatbots for multiple industries, each referencing the unique ID.

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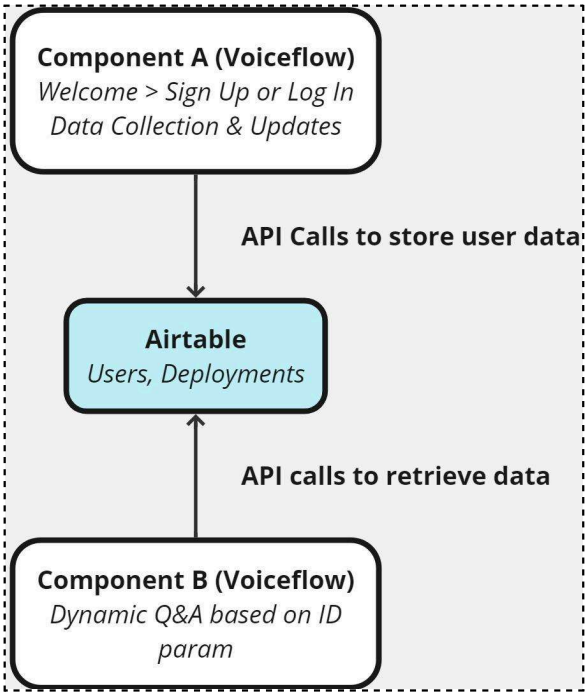
4. Detailed Architecture Diagram



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5. Future Possibilities (Not Currently Implemented)

1. **Appointment Scheduling**
    - Storing time slots or linking to a third-party calendar.
2. **Vectorized Knowledge Base**
    - For more advanced Q&A, referencing large textual data via embeddings.
3. **Multi-Lingual Chatbots**
    - If a user sets language preferences in Airtable, Component B can greet and respond accordingly.
4. **Web Data Scraping**
    - Owners can import data from an existing website to auto-populate fields.
5. **Payment Integrations**
    - Handling payments directly via the chatbot for booking or deposits.
6. **Instant deployment on Meta apps** (Deploy the chatbot on WhatsApp within 5 minutes, likely using a pool of pre-purchased phone numbers and Trello or a suitable alternative).

*(These expansions showcase the system's **futuristic** potential but fall outside the **MVP** scope due to the budget required to make them scalable for the competition.)*

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6. Technical and Coordination Requirements/Clarifications [IMPORTANT]

API Calls/External services

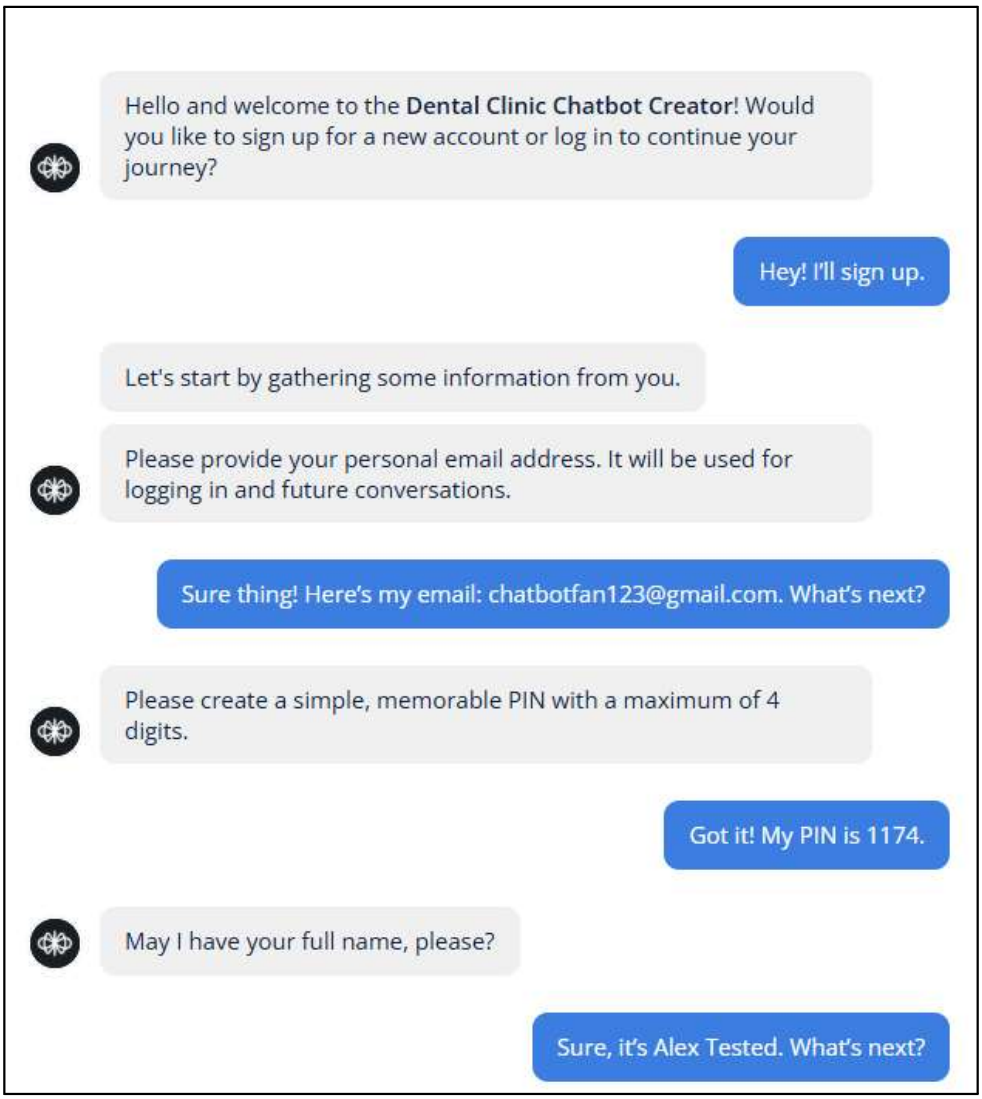
- **Airtable**:
    - I had to decide where to allocate my money, and I ultimately chose Airtable. With 100,000 API calls per month, it's practically impossible to run out of API calls. *I* [redacted]
- **UUID Generator**:
    - On the UUIDTOOLS generator page (the API I'm using to create the IDs), it states: 'Endpoints that accept a count argument allow you to create up to 100 UUIDs at once. All endpoints are limited to 60 requests per minute per IP address.' It shouldn't cause any errors.
- **Infinity Free (Website Hosting)**: In the Infinity Free forums, an Admin explained: 'A hit occurs when a browser requests a file from your account, including the main page,

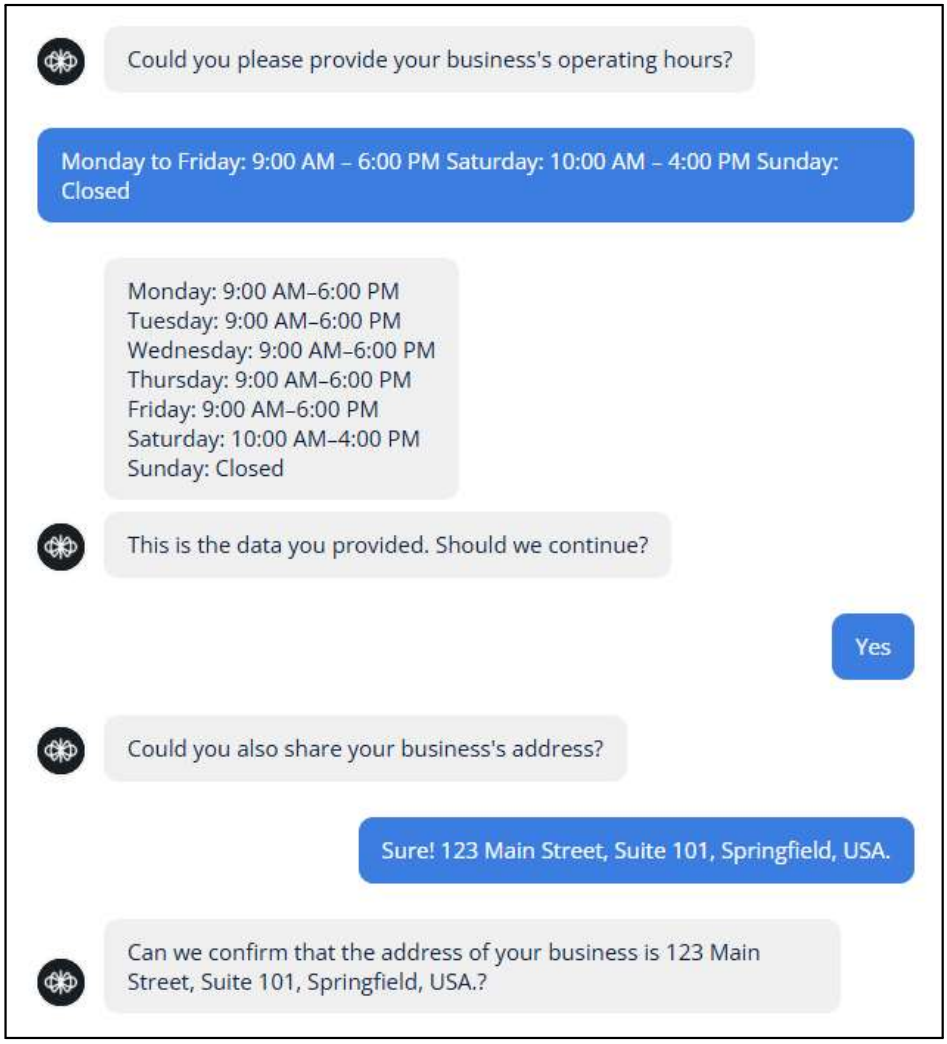
styles, scripts, or images. Each request counts as a "hit." Exceeding 50,000 hits in a day may result in your website being taken down.' This should be sufficient.

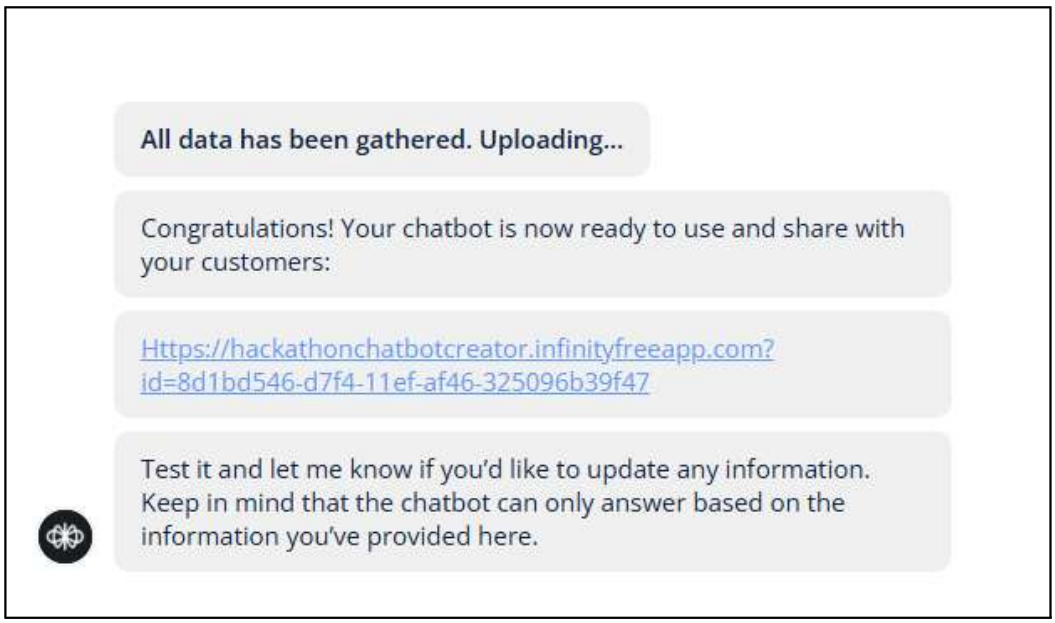
Coordination (EXTREMELY IMPORTANT)

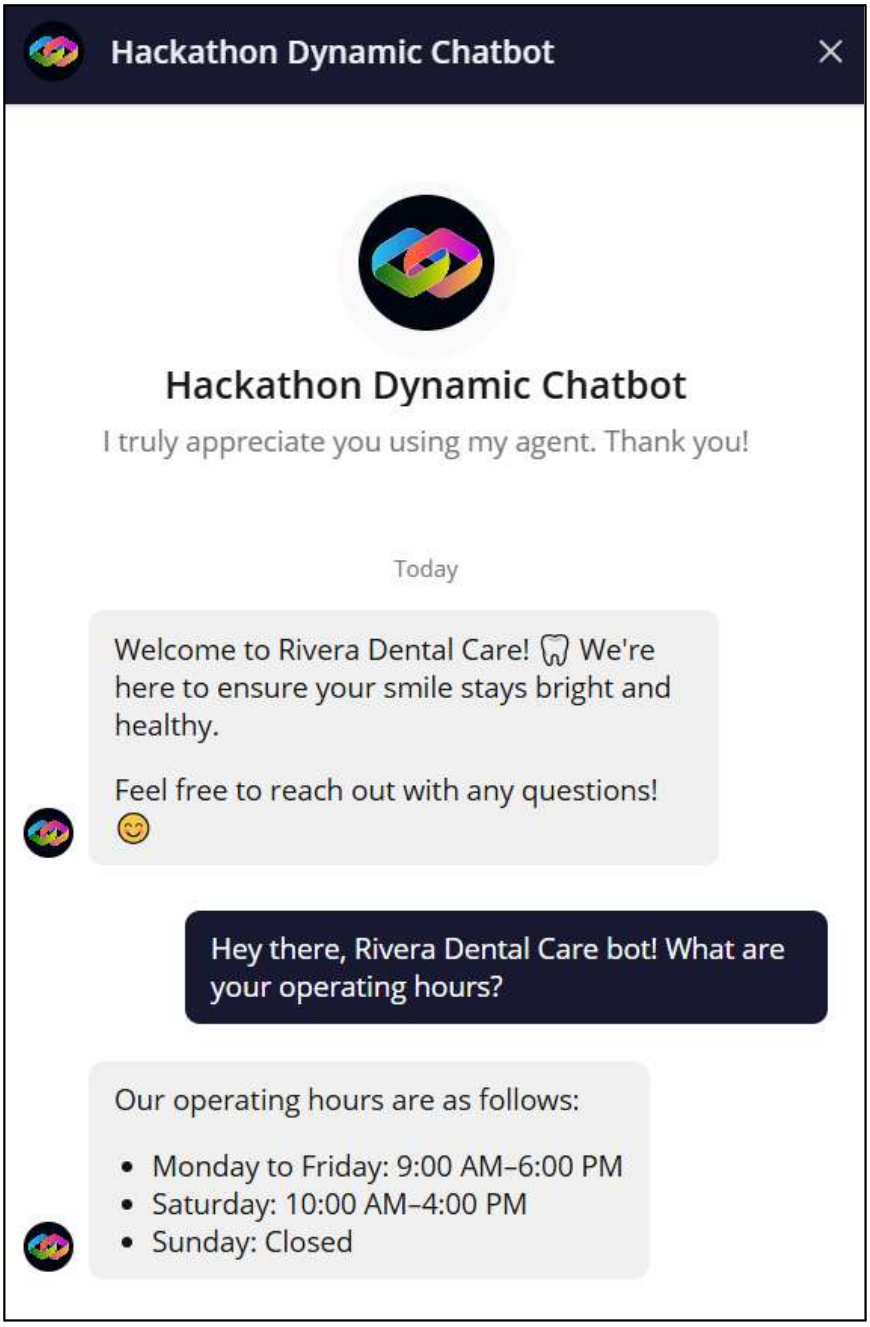
- **Component A**:
  - Component A is the only one that needs to be shown on the front-end to the community, while Component B will be accessed via a URL. Showing Component B from the start wouldn't work because no ID has been created yet.
- **Component B Voiceflow PROJECT ID**:
  - The Component B project ID **will change** when you host it. I'll need to coordinate (an email will suffice) to **replace** the previous ID with the new one (in the website).

7. Conversation samples




Could you please provide your business's operating hours?
Monday to Friday: 9:00 AM – 6:00 PM Saturday: 10:00 AM – 4:00 PM Sunday: Closed
Monday: 9:00 AM–6:00 PM
Tuesday: 9:00 AM–6:00 PM
Wednesday: 9:00 AM–6:00 PM
Thursday: 9:00 AM–6:00 PM
Friday: 9:00 AM–6:00 PM
Saturday: 10:00 AM–4:00 PM
Sunday: Closed
This is the data you provided. Should we continue?
Yes
Could you also share your business's address?
Sure! 123 Main Street, Suite 101, Springfield, USA.
Can we confirm that the address of your business is 123 Main Street, Suite 101, Springfield, USA.?


All data has been gathered. Uploading...
Congratulations! Your chatbot is now ready to use and share with your customers:
Https://hackathonchatbotcreator.infinityfreeapp.com?id=8d1bd546-d7f4-11ef-af46-325096b39f47
Test it and let me know if you'd like to update any information. Keep in mind that the chatbot can only answer based on the information you've provided here.



8. Conclusion

Summation of the Agent

- **Component A**:
  - Welcome → SignUp or LogIn → DataCollection → UpdateInfo → RetrieveLink
- **Component B**:
  - ReadID → FetchData → Q&A (Hours, Services, Etc.)

- **Airtable** orchestrates all data in real time, bridging the two components**.**

While this **MVP** focuses primarily on answering FAQs, it represents the foundation of a system designed to grow far beyond its initial implementation. I've worked hard to create a **robust**, **scalable**, and **innovative** AI agent within the competition's constraints, and **I** hope you'll see the potential this system holds for solving real-world problems **today and tomorrow.**