
CAPSTONE PROJECT

AI AGENT FOR CHRONIC DISEASE MONITORING

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OUTLINE

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PROBLEM STATEMENT

Chronic diseases like diabetes and hypertension demand continuous monitoring, but traditional systems lack real-time insights and personalized support. This project aims to build an AI agent that uses wearable data, medical records, and patient inputs to provide alerts, recommendations, and medication reminders improving long-term health management through predictive analytics.

TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

WOW FACTORS

The AI agent goes beyond standard monitoring by adapting to each patient's needs. Its voice-enabled logging allows hands-free interaction, making it easier for elderly or visually impaired users to report symptoms or check reminders. The sentiment-aware feedback system adds emotional intelligence, analyzing text or speech input to detect stress or discomfort and adjust recommendations accordingly. Through caregiver sync mode, families can stay informed via curated updates without invading privacy. For visualization, the agent offers an insight replay dashboard, which shows health progress like a time-lapse making data intuitive and actionable. Meanwhile, its multi-disease specialization ensures tailored logic for conditions like diabetes and hypertension, each powered by micro-agents optimized for that disease. And with a privacy-first design, users control what data is shared, ensuring trust while enabling better care.

END USERS

- Patients
- Caregivers
- Healthcare Providers
- System Administrators

RESULTS



AI agent for chronic disease monitoring 01:14 PM

Welcome to AI agent for chronic disease monitoring

An AI agent for chronic disease monitoring helps patients and healthcare



Quick start samples

Type something...



RESULTS



You 01:31 PM

i have running nose and fever, suggest the home remedies for the treatment.



AI agent for chronic disease monitoring 01:31 PM

Here are some home remedies for treating a running nose and fever:

1. **Drink plenty of fluids:** Staying hydrated can help thin out mucus and prevent dehydration.
2. **Hot teas:** Drinking warm liquids can help soothe a sore throat and loosen mucus.
3. **Humidifier:** Using a humidifier can add moisture to the air and help relieve congestion.
4. **Facial steam:** Inhaling steam can help open up nasal passages and relieve congestion.
5. **Hot shower:** Taking a hot shower can also help relieve congestion and soothe a sore throat.
6. **Neti pot:** Using a neti pot can help flush out nasal passages and relieve congestion.
7. **Nasal sprays:** Over-the-counter nasal sprays can help relieve congestion and reduce inflammation.
8. **Gargle with warm salt water:** This can help relieve a sore throat and loosen mucus.
9. **Rest:** Getting plenty of rest can help your body fight off the infection.
10. **Over-the-counter pain relievers:** Medications like acetaminophen or ibuprofen can help reduce fever and relieve pain.

If your symptoms persist for more than three weeks or are accompanied by a high fever, it's important to seek medical attention.

► How did I get this answer?



Type something...



RESULTS



AI agent for chronic disease monitoring 01:34 PM

Here are some possible causes for your symptoms of fever and running nose:

1. **Common Cold:** This is a viral infection that can cause symptoms such as a runny nose, sneezing, and a mild fever.
2. **Influenza (Flu):** This is a more severe viral infection that can cause symptoms such as a high fever, chills, muscle aches, and a runny nose.
3. **COVID-19:** This is a viral infection that can cause symptoms such as a fever, cough, and a runny nose.
4. **Allergies:** Allergies can cause symptoms such as a runny nose, sneezing, and itchy eyes. However, they typically do not cause a fever.
5. **Sinus Infection:** This is a bacterial infection that can cause symptoms such as a fever, facial pain, and a runny nose.

It's important to note that these conditions can have similar symptoms, so it's always a good idea to consult with a healthcare provider for a proper diagnosis. In the meantime, you can try some home remedies to relieve your symptoms.

► How did I get this answer?



Type something...



RESULTS

Deployed AI Agent

The screenshot displays the IBM Watsonx user interface. At the top, a dark navigation bar includes the 'IBM watsonx' logo, an 'Upgrade' button, and user account information for 'Vedant Morey's Account' in 'Dallas'. Below this, a breadcrumb trail shows the path: 'Deployment spaces / AI agent for chronic disease monitoring / AI agent for chronic disease monitoring'. The main content area features the title 'AI agent for chronic disease monitoring' with a green 'Deployed' status indicator and an 'Online' label. A tabbed interface at the bottom of this section includes 'API reference', 'Test', 'Evaluations', and 'Preview' (which is currently selected). On the right side of the main area, there is a 'New chat +' button. The chat window shows a conversation where the user asks, 'i am having fever and running nose.what it could be?'. The AI agent responds with a list of five possible causes: Common Cold, Influenza (Flu), COVID-19, Allergies, and Sinus Infection, each with a brief description of symptoms. A disclaimer follows, advising consultation with a healthcare provider. At the bottom of the chat window, there is a text input field with the placeholder 'Type something...' and a send button.

IBM watsonx Upgrade ? 🔔 Vedant Morey's Account Dallas VM

Deployment spaces / AI agent for chronic disease monitoring / AI agent for chronic disease monitoring

AI agent for chronic disease monitoring ✔ Deployed Online

API reference Test Evaluations **Preview**

New chat +

You 01:34 PM
i am having fever and running nose.what it could be?

AI agent for chronic disease monitoring 01:34 PM
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► How did I get this answer?

Type something... ►

CONCLUSION

- Empowers Proactive Care – Enables real-time monitoring and personalized health insights for chronic conditions.
- Enhances Accessibility – Voice interaction and caregiver sync make healthcare more inclusive and user-friendly.
- Improves Outcomes – Reduces hospital visits through early detection and data-driven support.

GITHUB LINK

- Github link: <https://github.com/Vedantmorey/AI-agent-for-chronic-disease-monitoring>

FUTURE SCOPE

- Advanced Predictive Analytics – Leveraging AI models for forecasting disease progression, flare-ups, and potential complications using historical and real-time data.
- Cross-Platform Integration – Expanding compatibility with smart devices, hospital systems, and telehealth platforms to ensure seamless care continuity.
- Personalized Treatment Plans – Collaborating with clinical databases and genetic profiles to offer adaptive care recommendations tailored to individual needs

IBM CERTIFICATIONS



In recognition of the commitment to achieve
professional excellence



Vedant morey

Has successfully satisfied the requirements for:

Journey to Cloud: Envisioning Your Solution



Issued on: Jul 19, 2025
Issued by: IBM SkillsBuild

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IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Vedant Morey

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT)

Learning hours: 20 mins



THANK YOU