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Title:
Developing Core Functionalities of a Healthcare Assistant using IBM Granite Models

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1. Introduction

- Purpose of the Healthcare Assistant

- Why use IBM Granite (LLMs + Watsonx + Granite NLP models)

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2. Core Functionalities

A. Symptom Checker

- User inputs symptoms → model suggests potential conditions

- IBM Granite NLP for understanding patient queries

B. Appointment Scheduling Assistant

- Integrates with calendar APIs

- Extracts date/time from user message

- Sample: "Book appointment with Dr. Sharma next Monday at 5 PM"

C. Medication Reminder

- Collects medication info and times

- Sends reminders (simulated via print/log)

D. Health Record Summarizer

- Uploads patient files → Summarizes using IBM Granite LLM

- Supports .pdf, .txt medical records

E. Chat with AI Health Assistant

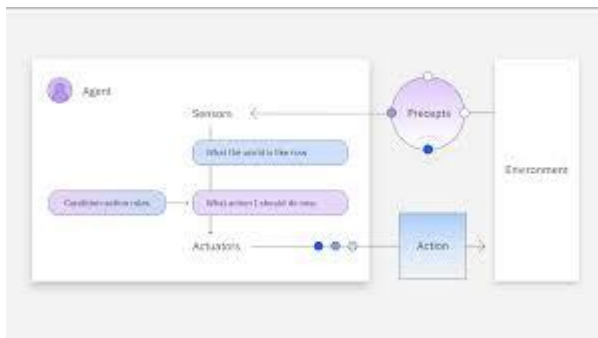- Natural language conversation

- Handles follow-up questions

- Built on Watsonx.ai with Granite model APIs

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3. Technical Stack

- Frontend: React (or basic HTML for prototype)

- Backend: Python (Flask/FastAPI)

- LLM Integration: IBM Watsonx.ai + Granite model

- Storage: IBM Cloud Object Storage or Firebase

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4. Sample Python Code Snippets

i. Symptom Checker (API call simulation)

```
def check_symptoms(symptom_input):

    response = granite_model.chat("What conditions are related to: " +
symptom_input)

    return response['text']


user_input = "fever, dry cough, sore throat"

print(check_symptoms(user_input))
```

ii. Medication Reminder

```python
import schedule

import time


def remind_medication():
    print("Reminder: Take your 8 AM blood pressure medicine")


schedule.every().day.at("08:00").do(remind_medication)


while True:
    schedule.run_pending()
    time.sleep(1)
```

iii. Summarize Health Record (using Watsonx Granite)

```python
from ibm_watsonx import GraniteModel


model = GraniteModel(api_key="YOUR_API_KEY")

summary = model.summarize(file_path="record.txt")

print(summary)
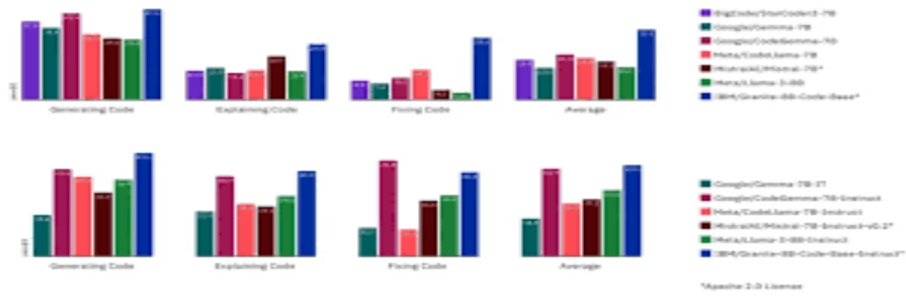```

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**5. Architecture Diagram**

- Client ⇄ Backend ⇄ IBM Granite Model API ⇄ Cloud Storage
  *(Image will be added in the PDF)*

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**6. Conclusion**

- Benefits of LLMs in healthcare

- Ethical use & data privacy considerations

- How to deploy the solution on IBM Cloud

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