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# CAPSTONE PROJECT

## STREET VENDOR DIGITALIZATION AGENT

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# OUTLINE

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# PROBLEM STATEMENT

Local Hawkers, Street Vendors and Micro Entrepreneurs often remain digitally invisible while struggling with new technologies like UPI. They are also unaware of government's MSME schemes and guidance to apply for these advantages. Many struggle with understanding the guidelines due to language barriers.

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# PROPOSED SOLUTION

A street vendor digitalization Agent that uses Natural Language Processing (NLP), Retrieval-Augmented Generation (RAG), to assist users in generating user profiles, guiding UPI and QR setup, recommending market strategies, explaining MSME and Udyam registration steps with document checklists in local languages by seamless switching between requested languages.

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# TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

RAG pipeline with internal vector index for direct queries (MSME guides, UPI PDFs)

IBM Granite model with local language support

# IBM CLOUD SERVICES USED

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

# WOW FACTORS

1. Hyperlocal Intelligence: Utilizes geolocation to offer government programs, location-specific advice, and pricing benchmarks specific to the vendor's region.
2. Multilingual Support: Allows non-English speakers to access digital onboarding by supporting regional languages like Telugu, Hindi, and Marathi.
3. RAG-Powered Personalization: For precise, current answers, Retrieval-Augmented Generation is used with grounded documents such as MSME registration checklists and UPI guidelines.
4. NDC & Fintech Ready: Provides vendors with guidance on how to list their goods on Meesho, WhatsApp Business, and ONDC, allowing them to fully participate in digital commerce platforms.
5. Language understanding: Responds to queries based on user's input and can switch between languages in the same chat window based on requirements.

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## END USERS

- Street Vendors
- Local Hawkers
- Small business owners
- Micro-entrepreneurs




# RESULTS

## Agent preview

 DigiVyaapari 01:55 PM

### Welcome to DigiVyaapari

Helping street vendors grow digitally with smart, local business guidance in your local language.



### Sample questions

I sell fruits in Pune Camp. How can I accept UPI payments?

→

How do I register my small shop under MSME?

→

What are free ways to promote my business online?

→

Can you help me make a QR code poster in Hindi?

→

# RESULTS

## Agent preview



You: 01:58 PM

How do I sell clothes from home? I knit them in my home in Mumbai.



DigiVyaapar! 01:58 PM

That's a wonderful initiative! Selling your hand-knit clothes from home can be done through various online platforms. Here are some steps to help you get started:

1. **Choose an Online Platform:** Consider popular e-commerce platforms like Amazon, Flipkart, or local platforms like Meesho, which are popular among small sellers and artisans. You could also consider social media platforms like Facebook and Instagram.
2. **Create a Seller Account:** Each platform will have its own process for creating a seller account. Generally, you'll need to provide some personal information and set up a payment method.
3. **List Your Products:** Take good quality photos of your knitted clothes and write detailed descriptions, including the material, size, color, and care instructions.
4. **Set Your Prices:** Research similar products online to understand the market price. Remember to factor in your time, materials, and any other costs.
5. **Ship Your Products:** Once an order is placed, you'll need to package and ship your products. Many platforms have tie-ups with courier services for this.
6. **Provide Excellent Customer Service:** Respond to queries promptly and resolve any issues to encourage repeat business and positive reviews.

Type something...



# RESULTS

## Agent preview



You: 01:59 PM

माझं किराणा दुकान आहे. QR कोड कसा बनवायचा?



DigiVyaapar | 01:59 PM

आपण किराणा दुकानाच्या व्यवसायाचे QR कोड बनवण्यासाठी इतर व्यवसायांपेक्षांच्या समान चरणांची प्रक्रिया अनुसरली. येथे चरण आहेत:

1. **QR कोड जनरेटर चा वापर करा:** ऑनलाइन कधीही QR कोड जनरेटर आहेत ज्यांना आपला URL, टेक्स्ट, वेबसाइट यांसारख्या डेटा इत्यादी येण्यासाठी उपयोग केले जाते. QR Code Generator, QRStuff, या बरोबर वेबसाइट आपल्याला मदत करणारी आहेत.
2. **अपलोड करून टोक:** आपल्या QR कोडचे डिझाइन चाचंत आपल्याला पसंत असेल त्याचे लाभ घेऊन अपलोड करा.
3. **प्रिंट करून टोक:** QR कोडचा डिजिटल कॉपी प्रिंट करून टोक. आपण त्याचे उपयोग अपोलो, पोस्टर, बिलबोर्ड्स आणि दुकानातील दरवाज्यापास्तीसाठी करू शकता.
4. **दुकानात प्रदर्शित करा:** दुकानात त्याचे दृश्यमान स्थान देण्यासाठी QR कोडचा प्रिंटआउट प्रदर्शित करा. तुम्ही तुमच्या विपणन सामग्रीवर ते भीतझात घेऊ शकता.
5. **जाणकार्यासाठी लिंक करा:** तुम्ही तुमच्या व्यवसायाचे ऑनलाइन उपस्थिती (जसे वेबसाइट आणि सोशल मीडिया पेज) वर QR कोड लिंक करू शकता.

QR कोड आपल्या व्यवसायाला ग्राहकांना सुविधापूर्वक तुमच्या ऑनलाइन उपस्थितीवर परतता येण्यासाठी एक सुविधांप्रमाणे मदत करेल.

काय आपल्याला डाउनलोड करण्यासाठी एक गाईड आणि/या डिजिटल पोस्टर वापरणार आहे?

Type something...



# RESULTS

## Agent preview

करस शकता.

QR कोड आपल्या व्यवसायाला ग्राहकांना सुविधापूर्वक तुमच्या ऑनलाइन उपस्थितीवर परतता येण्यासाठी एक सुविधांप्रमाणे मदत करेल.

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► How did I get this answer?



You: 02:02 PM

నేను హైదరాబాద్‌లో చిన్న వ్యాపారం చేస్తుంటే, MSME నమోదు ఎలా చేయాలి?



DiglVyaapari 02:02 PM

హైదరాబాద్ లో చిన్న వ్యాపారం చేస్తున్నారా, MSME నమోదు చేయడానికి ఈ చరణాలను అనుసరించండి:

1. **MSME ఆధార:** ఈ సంస్థా చేసిన సర్టిఫికేట్ పై సమాచార పై హైదరాబాద్ లోని ఎస్ఎమ్ఎఎమ్ సమాచార కేంద్రానికి చేరండి.
2. **ఆవశ్యక దస్తావేజులను సమీక్ష మరియు సమర్పణ:** ఆధార సమాచార సమీక్ష చేయించి, సమర్పించాల్సి ఉంటుంది. ఇది సాధారణంగా ఇంటర్నెట్ సమర్పణ చేయడం ద్వారా చేయవచ్చు.
3. **సర్టిఫికేట్ పై ప్రాతిపదిక అందుబాటులోకి తీసుకుంటుంది:** సమర్పణ ప్రక్రియ ముందు సర్టిఫికేట్ అందించబడుతుంది.
4. **సర్టిఫికేట్ డాక్యుమెంట్ అందించడం:** ఈ డాక్యుమెంట్ తులన చేయడానికి బ్యాంక్ లేదా అత్యంత ప్రత్యేక సర్టిఫికేట్ అసైన్మెంట్ అని అందించాలి.

# RESULTS

## Deployed AI Agent

The screenshot shows the IBM Watsonx deployment interface for the 'DigiVyaapari' AI agent. The interface is in Telugu and displays the agent's status as 'Deployed' and 'Online'. It includes a 'Preview' tab showing the agent's capabilities and a 'New chat' button. The right sidebar provides details about the deployment, including the name, description, and deployment details.

**Deployment spaces** / Edunet Final Project / DigiVyaapari /

**DigiVyaapari** Deployed Online

API reference Test **Preview**

[New chat](#) +

చేరున అందించిన అంశ మధ్య సంబంధ మంత్రాంశం ప్రాంత లో ఉన్న ప్రాంత అధికారి సహకారం అనువర్తించబడుతుంది.

3. **అతి ముఖ్యమైన వివరణలను అందించడం:** అనువర్తనాన్ని చేయడానికి, అవకాశాలను చేయడానికి ఉపయోగించే వ్యాపార విధానాన్ని, ఆదాయాన్ని, ప్రాంత సూచి మరియు అతి ముఖ్యమైన వివరణలను అందించండి.

4. **అనువర్తనానికి సమయం అవసరం:** అనువర్తనానికి సమయం అవసరమైతే, లేదా అవసరం లేకపోవడానికి సంబంధించి సర్టిఫికేట్ చేసేవి అందించిన సంస్థ సమాచారం అందించడానికి సంబంధించి.

ఈ చర్చించిన విషయానికి సంబంధించి అధిక సమర్థతలు అందించడానికి, నేను హైదరాబాద్ లో చిన్న వ్యాపారానికి సంబంధించి అధిక సమర్థతలు అందించడానికి సర్టిఫికేట్ చేసేవి అందించిన ప్రాంత అధికారి కేవలం వేబ్ సైట్ లేదా ఫోన్ సంఖ్య అందించగలను.

You can also check the Udyam Registration portal for detailed, step-by-step guidance: [Udyam Registration](#)

Let me know if you need a downloadable guide or digital poster for this process. I'm here to help you with any more questions you might have!

► How did I get this answer?

Type something...

**About this deployment**

**Name**  
DigiVyaapari

**Description**  
Helping street vendors grow digitally with smart, local business guidance in your local language.

**Deployment Details**  
Deployment ID: 763943554-2cfe-42...  
Serving name:  
No serving name.  
Software specification:  
runtime-24.1-py3.11  
Hardware specification:  
Extra extra small: 1 CPU and 2 GB RAM  
Copies:  
1

**Tags**  
wx-agent

**Associated asset**  
DigiVyaapari  
5bc4dec8-3a5a-4x48-9fde-142138de5a9d

## CONCLUSION

- The combination of simplicity and tailored guidance is key to making digital entrepreneurship accessible and sustainable for informal businesses.
- This solution not only empowers vendors but also contributes to the growth of the hyperlocal economy, helping small businesses thrive in the digital era.
- By leveraging advanced AI technologies like Retrieval-Augmented Generation (RAG) and Natural Language Processing (NLP), the agent provides localized, actionable insights for business growth, digital payments, government scheme access, and marketing strategies.

## GITHUB LINK

- <https://github.com/Abhigna-Vedururu/DigiVyaapari>

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## FUTURE SCOPE

- WhatsApp or Mobile App Integration for easier access.
- Voice-Activated Interaction (Speech-to-Text) for hands-free use.
- Automated Monthly Reports on vendor performance and sales.
- Integration with local payment systems and digital wallets.
- Real-time updates on region-specific financial policies.
- Expanded multilingual support to include more regional languages.
- AI-Powered Marketing Campaigns for personalized promotions.



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# REFERENCES

1. [IBM Cloud Lite](#)
2. [IBM Watsonx.ai](#)
3. [UPI Information](#)
4. [MSME Registration process](#)
5. [MSME Schemes](#)

# IBM CERTIFICATIONS

In recognition of the commitment to achieve  
professional excellence



## Abhigna Vedururu

Has successfully satisfied the requirements for:

### Getting Started with Artificial Intelligence



Issued on: Jul 16, 2025  
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/efc25465-2051-4ae8-9e10-790e31db97ec>



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### Journey to Cloud: Envisioning Your Solution

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IBM <b>SkillsBuild</b>	Completion Certificate
	<p>This certificate is presented to</p> <p>Abhigna Vedururu</p> <p>for the completion of</p> <p><b>Lab: Retrieval Augmented Generation with LangChain</b></p> <p>(ALM-COURSE_3824998)</p> <p>According to the Adobe Learning Manager system of record</p>
<b>Completion date:</b> 22 Jul 2025 (GMT)	<b>Learning hours:</b> 20 mins



**THANK YOU**