

CAPSTONE PROJECT

AI Agent For Digital Financial Literacy

Presented By

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OUTLINE

- Problem Statement
- Technology used
- Wow factor
- End users
- Result
- Conclusion
- Git-hub Link
- Future scope
- IBM Certifications

PROBLEM STATEMENT

- Many individuals and families face a significant financial literacy gap, struggling to manage personal finances, understand complex financial products, and create effective budgets.
- This lack of accessible knowledge leads to tangible negative consequences, including poor financial decision-making, increased debt, and missed opportunities for long-term wealth building.
- Current methods for financial management, such as manual expense tracking and consulting traditional advisors, are often time-consuming, inefficient, and costly.
- There is a critical need for an automated, intelligent, and readily available solution that can provide personalized financial guidance and support.

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

This agent will democratize financial knowledge, making personalized advice accessible to everyone.


Unique features include:

- **Personalized Budgeting:** Creates and adjusts budgets based on a user's spending habits.
- **Financial Health Score:** Provides a simple, actionable score to help users understand their financial standing.
- **Investment Insight:** Analyzes market data and explains investment options in simple terms.
- **Real-time Fraud Alerts:** Integrates with financial accounts to notify users of unusual activity.
- **Goal-Based Planning:** Helps users set and track progress toward financial goals like saving for a down payment or retirement.

END USERS

- **Aspiring Professionals and Students:** Individuals new to managing their finances who need foundational guidance on budgeting, saving, and understanding their first paychecks.
- **Families and Households:** Users focused on long-term financial planning, managing household budgets, and working toward shared goals like buying a home or saving for a child's education.
- **Self-Directed Investors:** Individuals seeking to enhance their financial literacy, explore investment strategies, and gain insights into complex financial products in an accessible way.
- **Small Business Owners:** Entrepreneurs who require a streamlined solution for tracking business expenses and managing cash flow to ensure financial stability and growth.

STEP 1: Login to IBM Cloud



Log in to IBM

IBMid

Continue →

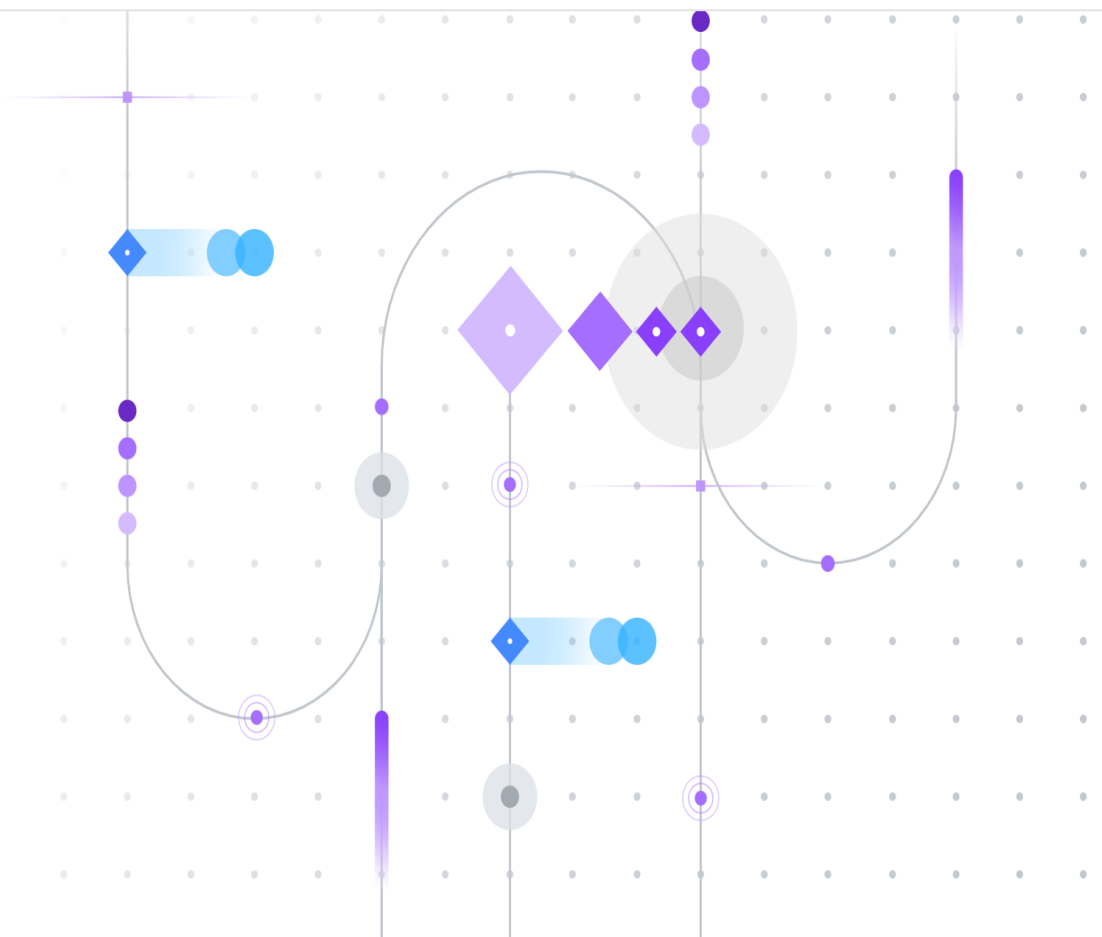
☐ Remember me ⓘ

Don't have an account?


Create an IBMid →

Forgot IBMid?

[Contact the IBMid help desk](#)



STEP 2: Set Up the Required Resources for AI Agent Project




Search resources and products...


Q


Catalog


Manage


Varadaraju N Y's Account














Resource list

Create resource +

Name	Group	Location	Product	Status	Tags
Filter by name or IP address...	Filter by group...	Filter...	Filter...	Filter...	Filter...
Compute (0)					
Containers (0)					
Networking (0)					
Storage (1)					
 Cloud Object Storage-va	Default	Global	Cloud Object Storage	Active	cpdaas
Converged infrastructure (0)					
Enterprise applications (0)					
AI / Machine Learning (2)					
 watsonx.ai Runtime-lk	Default	Dallas (us-south)	watsonx.ai Runtime	Active	cpdaas
 watsonx.ai Studio-gz	Default	Dallas (us-south)	watsonx.ai Studio	Active	—
Analytics (0)					
Blockchain (0)					

STEP 3: Open IBM watsonx.ai Studio

The screenshot displays the IBM watsonx.ai Studio dashboard. At the top, a navigation bar includes the IBM watsonx.ai Studio logo, a search bar, and user account information for Varadaraju N Y. The main area features a 'Welcome, Varadaraju!' message and three primary action cards: 'Take a tutorial', 'Work with data', and 'Find what you need'. To the right of these cards is a 3D visualization of blue and purple cubes. The bottom section is divided into four panels: 'Quick start' with five guides, 'Projects' listing 'Financial AI Agents' and 'Financial Agent', 'Notifications' showing 'No notifications', and 'Deployments' showing 'No deployment spaces' with a 'New deployment space' button.

IBM watsonx.ai Studio Search in your workspaces Upgrade ? Bell Varadaraju N Y's Account Dallas VN

Welcome, Varadaraju!

Take a tutorial
Step through implementing a Data fabric use case in a sample project.
→

Work with data
Create a project for your team to prepare data, find insights, or build models.
→

Find what you need
Open this interactive map to find the tools that you need for your tasks.
→

Quick start

- Create data pipelines with DataStage
- Build customer profiles with IBM Match 360 with Watson
- Catalog and govern data with watsonx.data intelligence
- Build and manage ML models with watsonx.ai Studio
- Query data anywhere with Data Virtualization

Projects +

- Financial AI Agents Today at 9:53 PM
- Financial Agent Today at 5:20 PM

New in Resource hub

- Knowledge Accelerator for Ener...

Notifications

No notifications
You will see your most recent notifications here.

Deployments ⓘ +

No deployment spaces
After you create spaces, you'll see them here.

New deployment space +

STEP 4: Create AI Agent Project in IBM watsonx.ai Studio

IBM watsonx.ai Studio

Search in your workspaces

Upgrade

?

Varadaraju N Y's Account

Dallas

VN

Create a project

Start with a new, blank project or select from where to import an existing project.

+ New

Local file

Sample

Name

Financial AI Agents

Description (optional)

Building an AI agent to enhance financial awareness and digital literacy

Tags (optional)

Add tags

Add tags to make projects easier to find. To add tags, separate them with commas and press Enter.

Storage

Cloud Object Storage-va

Project includes integration with [Cloud Object Storage](#) for storing project assets.

Advanced settings

Cancel

Create

STEP 5: Create Associate Service for AI Agent Project

IBM watsonx.ai Studio

Search in your workspaces

Upgrade

Varadaraju N Y's Account

Dallas

VN

Projects / Financial AI Agents

Associate service

Choose an existing or add a new service to associate with your project.

Resource Groups Locations

Find services

New service +

Name	Type	Plan	Location	Status	Group
<input checked="" type="checkbox"/> watsonx.ai Runtime-lk ⓘ	watsonx.ai Runtime	Lite	Dallas	Not associated	Default

CancelAssociate

STEP 6: Build and Setup for AI Agent Project in IBM watsonx.ai Studio

IBM watsonx

Upgrade ⓘ 🔔

Varadaraju N Y's Account ▾ Dallas ▾ VN

Projects / Financial AI Agent / Financial AI Agent

Share feedback ⓘ Autosave on New agent + Deploy ⓘ ⓘ

Build

AI Model: granite-3-3-8b-instruct ⌵ ⚙️ <

Setup

Name

Financial AI Agent

Description 72/100

Building an AI agent to enhance financial awareness and digital literacy

Icon


Placeholder image

Quick start questions

Add up to 4 quick start questions that your users can select. +

Agent preview

Building an AI agent to enhance financial awareness and digital literacy



Sample questions

How do I create a budget? →

What is a credit score, and how can I improve mine? →

What are some common scams I should watch out for? →

How do I start saving for a big purchase, like a car or a house? →

Type something... ⓘ ➤

STEP 7: Add Tools for AI Agent Project in IBM watsonx.ai Studio

The screenshot displays the IBM watsonx.ai Studio interface. At the top, a dark navigation bar includes the 'IBM watsonx' logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Varadaraju N Y's Account' in the 'Dallas' region. Below this, a breadcrumb trail shows 'Projects / Financial AI Agent / Financial AI Agent'. The main header area contains a 'Share feedback' link, a beta badge, an 'Autosave on' toggle, a 'New agent +' button, and a 'Deploy' button. A modal window titled 'Select a tool' is open, with a 'Close' button and a close icon (X) in its top right corner. The modal's content area features a search bar labeled 'Search for a tool'. Below the search bar, a grid of tool cards is displayed, each with an icon, a title, a description, and a toggle switch. The tools and their toggle states are: Google search (on), DuckDuckGo search (on), Wikipedia search (on), Document search (off), Tavily search (off), Webcrawler (on), Python Interpreter (off), and Weather (on). The Python Interpreter tool has a yellow warning icon. The interface is clean and modern, with a light gray background and clear typography.

IBM watsonx

Upgrade ? Bell Varadaraju N Y's Account Dallas VN

Projects / Financial AI Agent / Financial AI Agent

Share feedback beta Autosave on New agent + Deploy

Select a tool

Choose a tool to add to your agent.

Close X

Search for a tool

Tool	Description	Status
Google search	Retrieve information from the internet with the Google search engine.	On
DuckDuckGo search	Retrieve information from the internet with the DuckDuckGo search engine.	On
Wikipedia search	Retrieve information from Wikipedia articles.	On
Document search	Search documents with vector indexes.	Off
Tavily search	Retrieve information from the internet with the Tavily search engine.	Off
Webcrawler	Retrieve information from a website.	On
Python Interpreter	Execute Python code generated by the agent.	Off
Weather	Retrieve the weather of a city.	On

STEP 8: Add Granite Model for AI Agent Project in IBM watsonx.ai Studio

The screenshot displays the IBM watsonx.ai Studio interface. At the top, the navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Varadaraju N Y's Account' in the 'Dallas' region. Below this, a breadcrumb trail shows 'Projects / Financial AI Agent / Financial AI Agent'. A secondary bar contains a 'Share feedback' link, a beta flag, an 'Autosave on' toggle, and buttons for 'New agent +', 'Deploy', and a lock icon. The main content area is titled 'granite-3-3-8b-instruct' with a subtitle 'Provider: IBM | Version: 3.3 | Type: Provided model'. A row of capability tags includes 'Question answering', 'Summarization', 'Retrieval-Augmented Generation(...)', 'Classification', 'Generation', 'Code generation and conversion', 'Extraction', 'Translation', and 'Function calling'. A light blue informational banner states: 'Note: By using the model you agree to these terms.' with a 'Read terms' link. The main body of the page is titled 'Granite-3.3-8B-Instruct' and contains the following text:

Model Summary: Granite-3.3-8B-Instruct is a 8-billion parameter 128K context length language model fine-tuned for improved reasoning and instruction-following capabilities. Built on top of Granite-3.3-8B-Base, the model delivers significant gains on benchmarks for measuring generic performance including AlpacaEval-2.0 and Arena-Hard, and improvements in mathematics, coding, and instruction following. It also supports Fill-in-the-Middle (FIM) for code completion tasks and structured reasoning through <think></think> and <response></response> tags, providing clear separation between internal thoughts and final outputs. The model has been trained on a carefully balanced combination of permissively licensed data and curated synthetic tasks.

- **Developers:** Granite Team, IBM
- **Website:** [Granite Docs](#)
- **Release Date:** April 16th, 2025
- **License:** [Apache 2.0](#)

Supported Languages: English, German, Spanish, French, Japanese, Portuguese, Arabic, Czech, Italian, Korean, Dutch, and Chinese. However, users may finetune this Granite model for languages beyond these 12 languages.

Intended Use: This model is designed to handle general instruction-following tasks and can be integrated into AI assistants across various domains, including business applications.

Capabilities

STEP 9: Add Deployment Space for AI Agent Project in IBM watsonx.ai Studio

Create a deployment space

Use a space to collect assets in one place to create, run, and manage deployments

+ New

 Local file

Define details

Name

Financial AI Agent

Description (Optional) 0/100

What's the purpose of this space?

Deployment stage ⓘ

Development 

Tags (optional)

Find or create tags 

Add tags to make assets easier to find

Cancel

Create

STEP 10: Select Deployment for AI Agent Project in IBM watsonx.ai Studio

IBM watsonx

Upgrade ? 🔔

Varadaraju N Y's Account ▾ Dallas ▾ VN

Deployment spaces / Financial AI Agent / Financial AI Agent

Deployments Code Schema

🔍 Search

↻ New deployment ➦

Name	Type	Status	Tags	Last modified
Financial AI Agent	Online	✔ Deployed	wx-agent	2 hours ago Varadaraju N Y (You)

Items per page: 20 ▾ 1–1 of 1 items 1 of 1 pages

About this asset ×

Name

Financial AI Agent

Description

Building an AI agent to enhance financial awareness and digital literacy

Asset Details

Type: python

AI service ID: c775b956-fe9d-48...

Software specification: runtime-24.1-py3.11 ⚙

Tags

wx-agent


Last modified




2 hours ago by Varadaraju N Y







Created on


Aug 3, 2025 by Varadaraju N Y

DEPLOYED AGENT RESULTS

 IBM watsonx


Upgrade ?  Varadaraju N Y's Account  Dallas  VN

Navigation Menu / Financial AI Agent / Financial AI Agent /      


Financial AI Agent  Deployed Online

API reference Test **Preview**

New chat +

 You 09:40 PM

How do I create a budget?


 Financial AI Agent 09:40 PM

Here's how you can create a budget:

1. Calculate your net income.
2. Track your spending.
3. Set realistic goals.
4. Make a budget plan.
5. Review and adjust your budget regularly.

You can use the 50/30/20 spending rule as a guideline, where 50% of your income goes towards necessary expenses, 30% towards discretionary spending, and 20% towards saving and debt repayment.

Additionally, you can use online tools or budgeting apps to help you create and stick to your budget. It's also important to

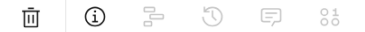
Type something... 

https://dataplatform.cloud.ibm.com/ml-runtime/deployments/3e7f48ca-efab-46ec-9c5a-995ecd777ac0/chat?space_id=472a90d2-82cd-4d10-9d68-10130c6b5efe&context=wx&flush=true#

DEPLOYED AGENT RESULTS

Navigation Menu

/ Financial AI Agent / Financial AI Agent /



Financial AI Agent ✔ Deployed Online

API reference

Test

Preview

New chat +



You 09:41 PM

How to avoid online frauds



Financial AI Agent 09:41 PM

To avoid online frauds, it's important to be cautious when interacting with unknown individuals or websites. Here are some tips to help you avoid online frauds:

1. Be wary of unsolicited emails or messages that ask for personal or financial information.
2. Never give out your password or financial information to someone you don't know.
3. Use strong passwords and keep them confidential.
4. Keep your software and operating system up to date.
5. Use security software to protect your computer and cell phone.
6. Be cautious when clicking on links or downloading attachments from unknown sources.
7. Use two-factor authentication whenever possible.
8. Monitor your financial accounts regularly for suspicious activity.

Type something...



dataplatfom.cloud.ibm.com/ml-runtime/deployments/.../chat?space_id=472a90d2-82c...

CONCLUSION

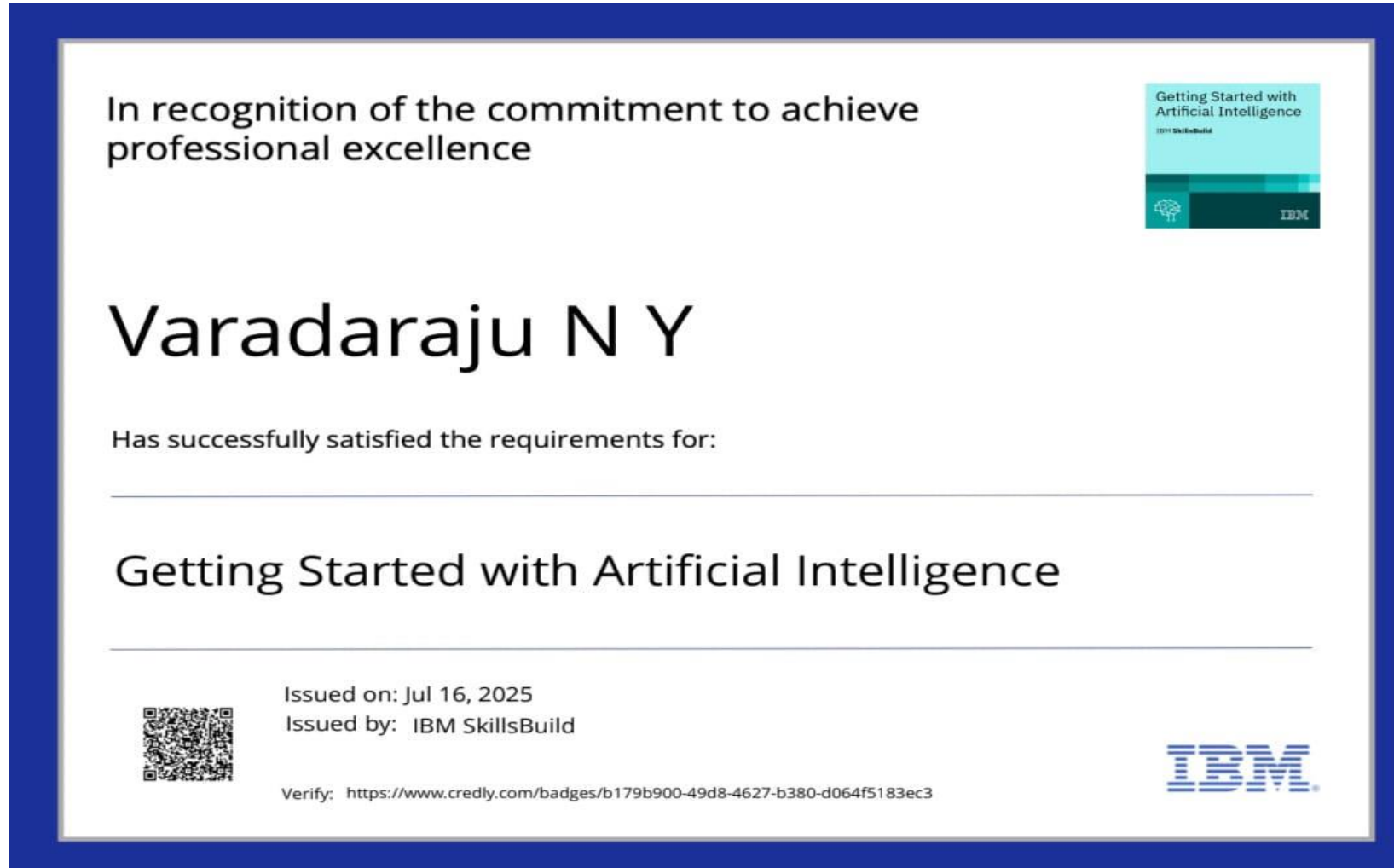
- The AI Financial Literacy Agent successfully enhances efficiency and accessibility by automating complex financial tasks and simplifying key concepts.
- By providing instant, personalized advice, the agent empowers individuals and families to make more informed financial decisions, leading to better long-term outcomes.
- This project demonstrates the significant potential of AI agents to deliver actionable and accessible knowledge, bridging the gap in financial literacy.

FUTURE SCOPE

- **Voice-Activated Interface:** Develop a voice-activated assistant for hands-free, conversational interaction, making financial management more convenient.
- **Secure Platform Integration:** Implement secure API connections to financial institutions for real-time data analysis and seamless expense tracking.
- **Advanced Market Intelligence:** Integrate real-time market data to provide users with proactive investment insights and alerts tailored to their portfolios.
- **Expanded Language Support:** Extend the agent's capabilities with multilingual support to serve a diverse, global user base.
- **Automated Tax Preparation:** Incorporate AI-powered features to assist users in organizing financial documents and preparing for tax season, reducing manual effort.

IBM CERTIFICATIONS

Credly Link : https://www.credly.com/badges/130859ac-0d19-4696-9797-41ed9c616f7c/public_url



RAG Certificate

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Varadaraju N Y

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 16 Jul 2025 (GMT)

Learning hours: 20 mins

GITHUB LINK

- **GitHub Link :-** <https://github.com/varadaraju17/AI-Agent-For-Digital-Financial-Literacy>

THANK YOU