Crop Recommendation -Maximize agricultural yield by recommending appropriate crops

Data set link : https://www.kaggle.com/datasets/siddharthss/crop-recommendation-dataset?resource=download

About Dataset

Context

Precision agriculture is in trend nowadays. It helps the farmers to get informed decision about the farming strategy. Here, we present you a dataset which would allow the users to build a predictive model to recommend the most suitable crops to grow in a particular farm based on various parameters.**

Source

This dataset was build by augmenting datasets of rainfall, climate and fertilizer data available for India. Gathered over the period by ICFA, India.

Data fields

N - ratio of Nitrogen content in soil

P - ratio of Phosphorous content in soil

K - ratio of Potassium content in soil

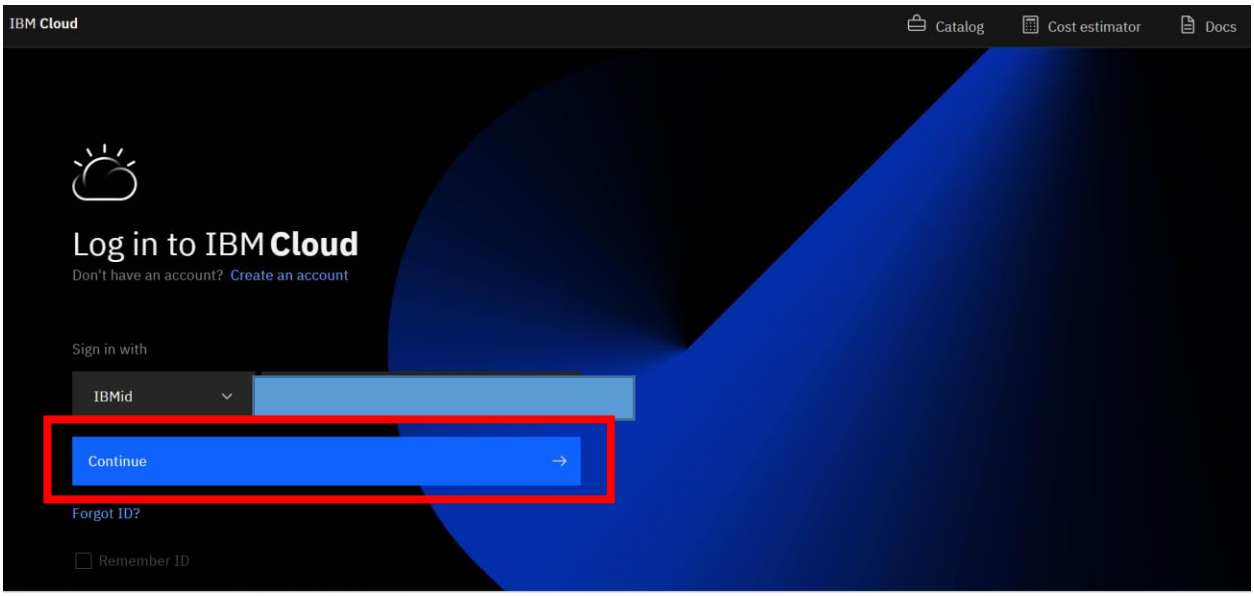
temperature - temperature in degree Celsius

humidity - relative humidity in %

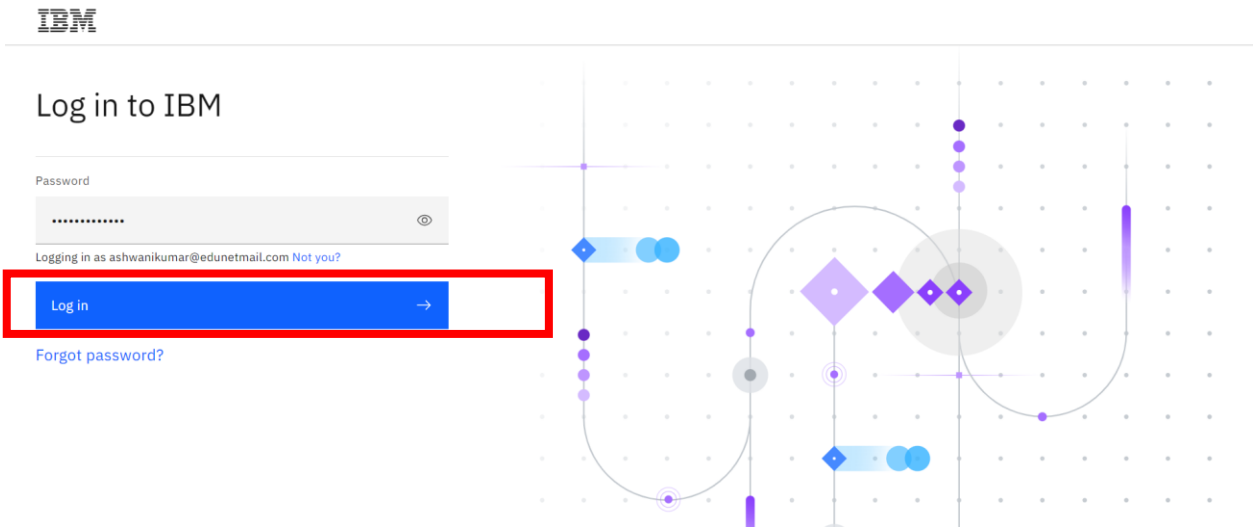
ph - ph value of the soil

rainfall - rainfall in mm

Step1 : Open IBM Cloud login page with this link cloud.ibm.com, enter your Gmail and click on Continue



Step2 : Enter your IBM Academic portal password, Click on Login



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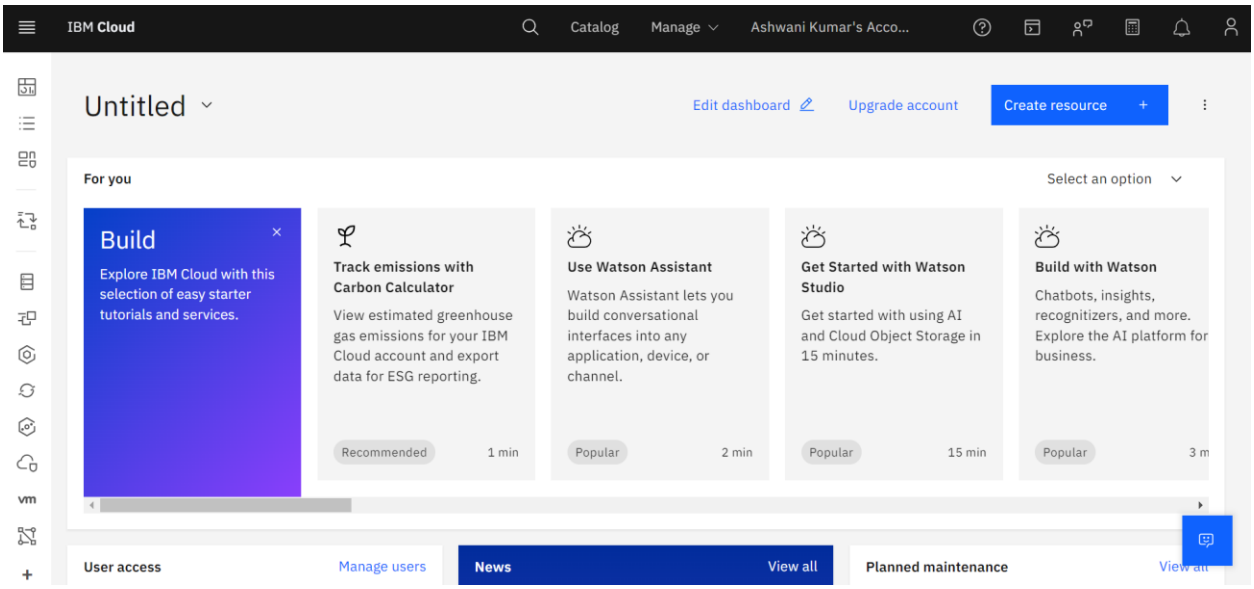
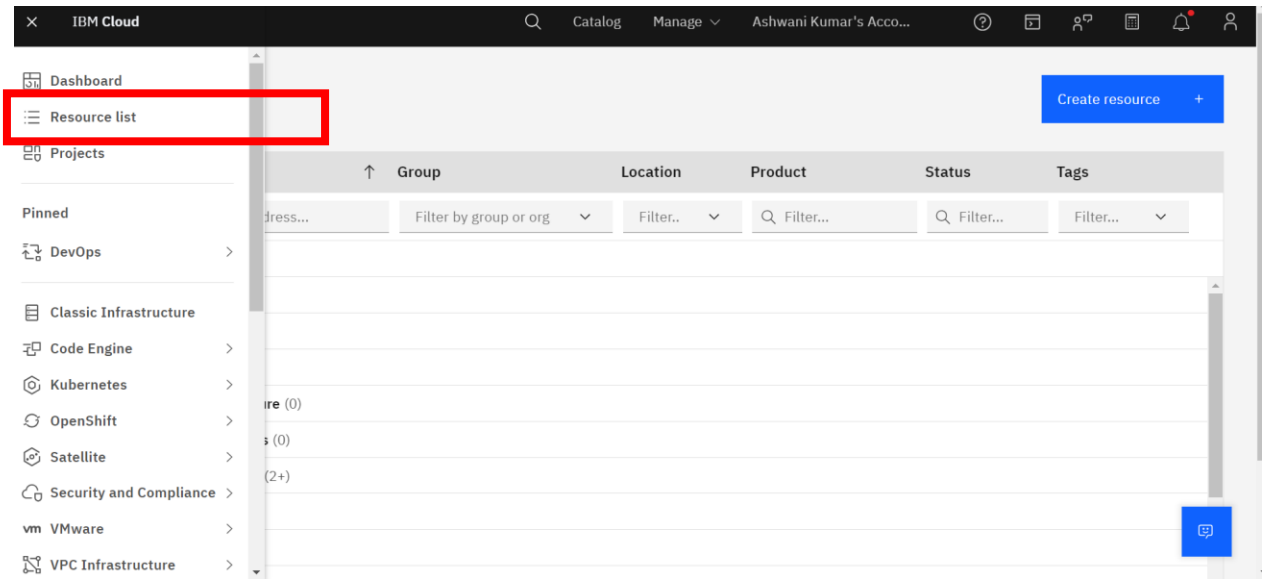
Step3: This is IBM Cloud Dash board



Step4 : Click on Navigation menu, go to Resources list and clear all the resources



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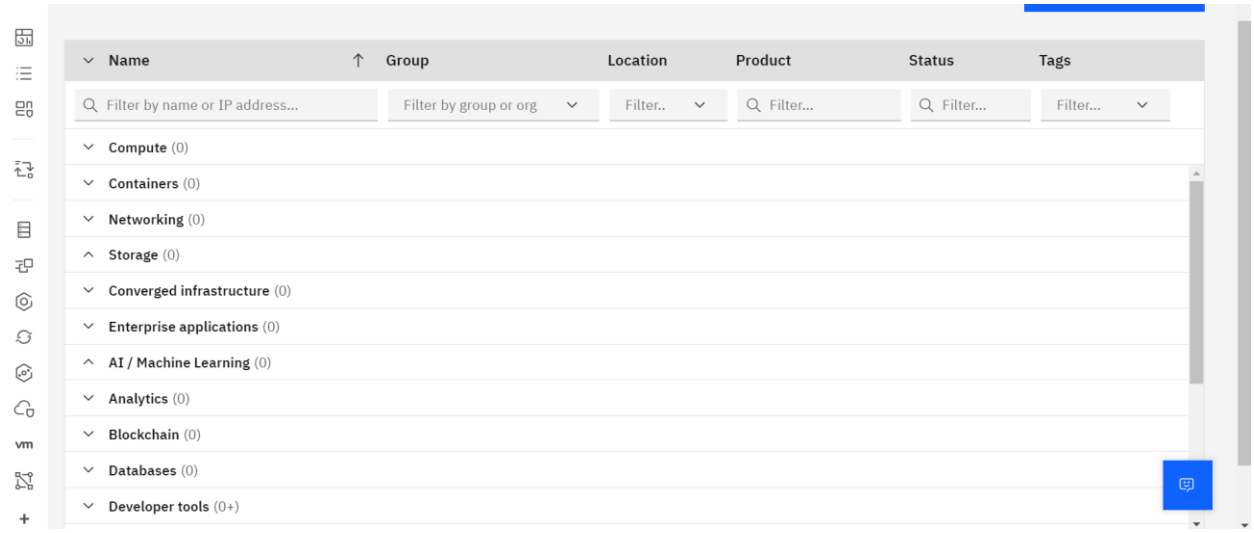
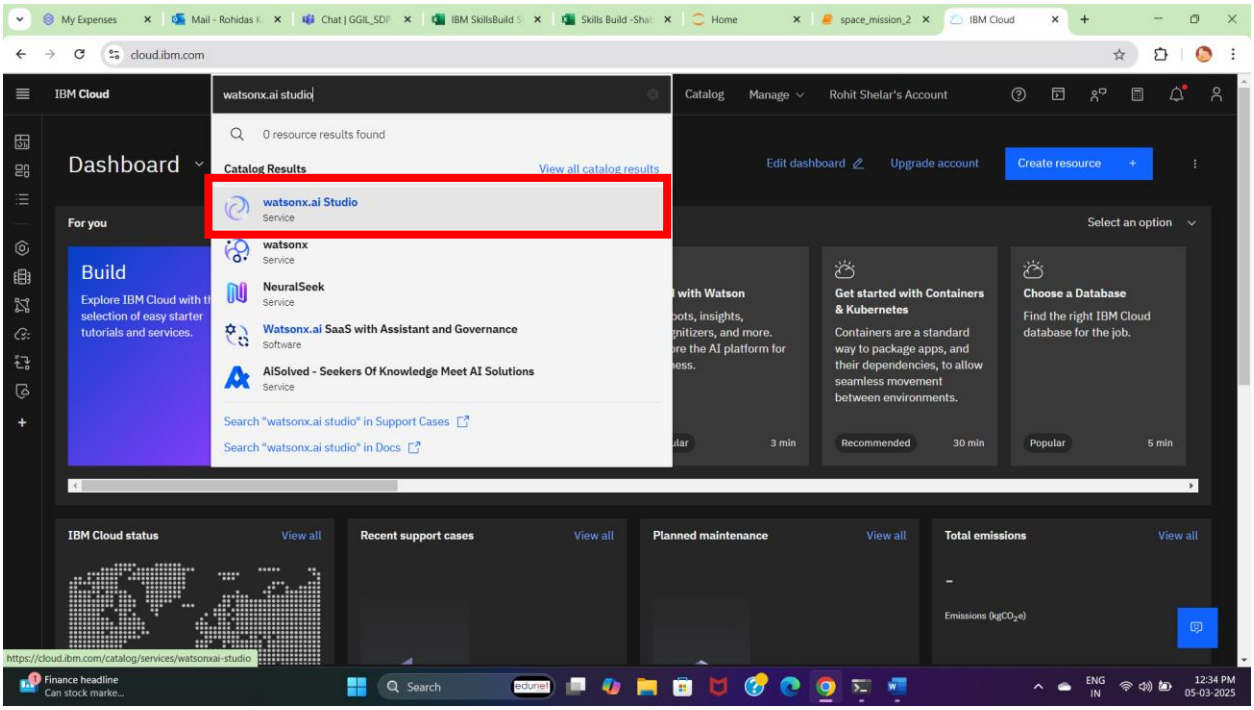
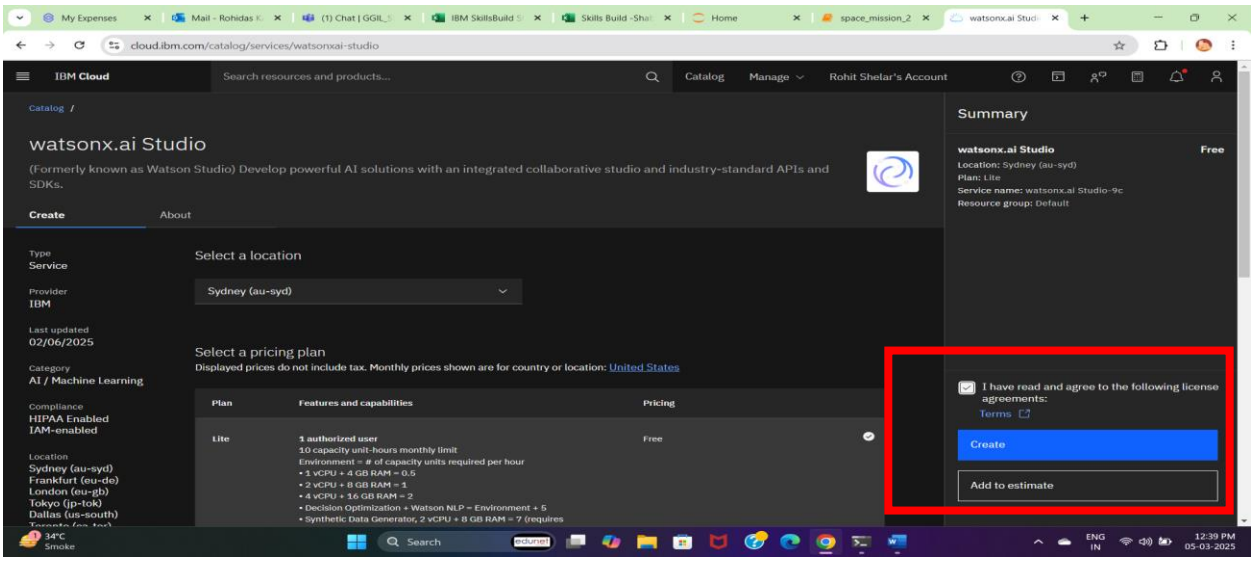


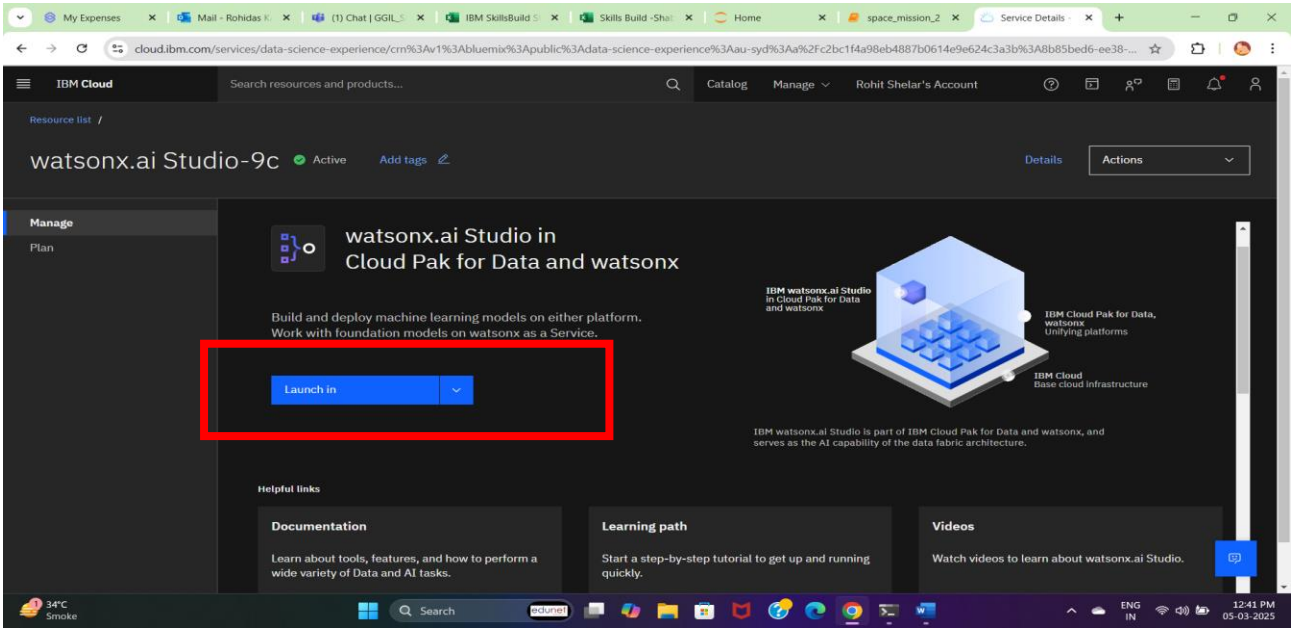
Step5: Click on search icon and type “Watsonx.ai studio”. Select Watsonx.ai studio(Service).



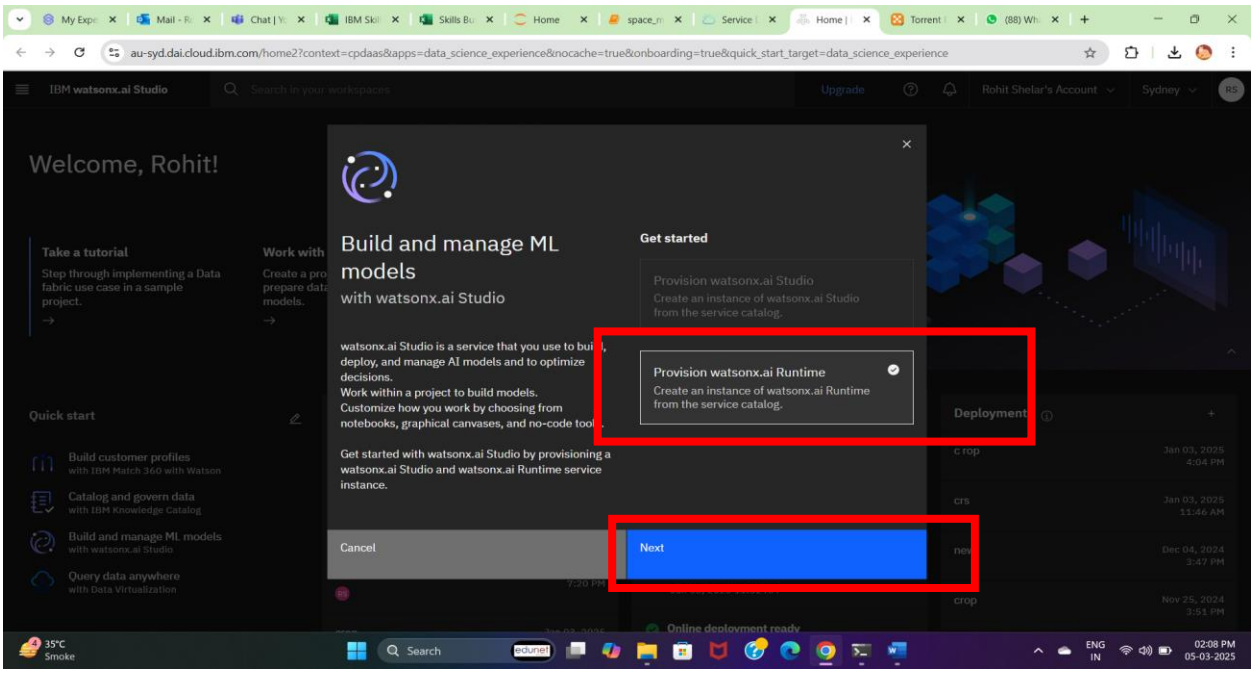
Step6: Click on the check box and Create.



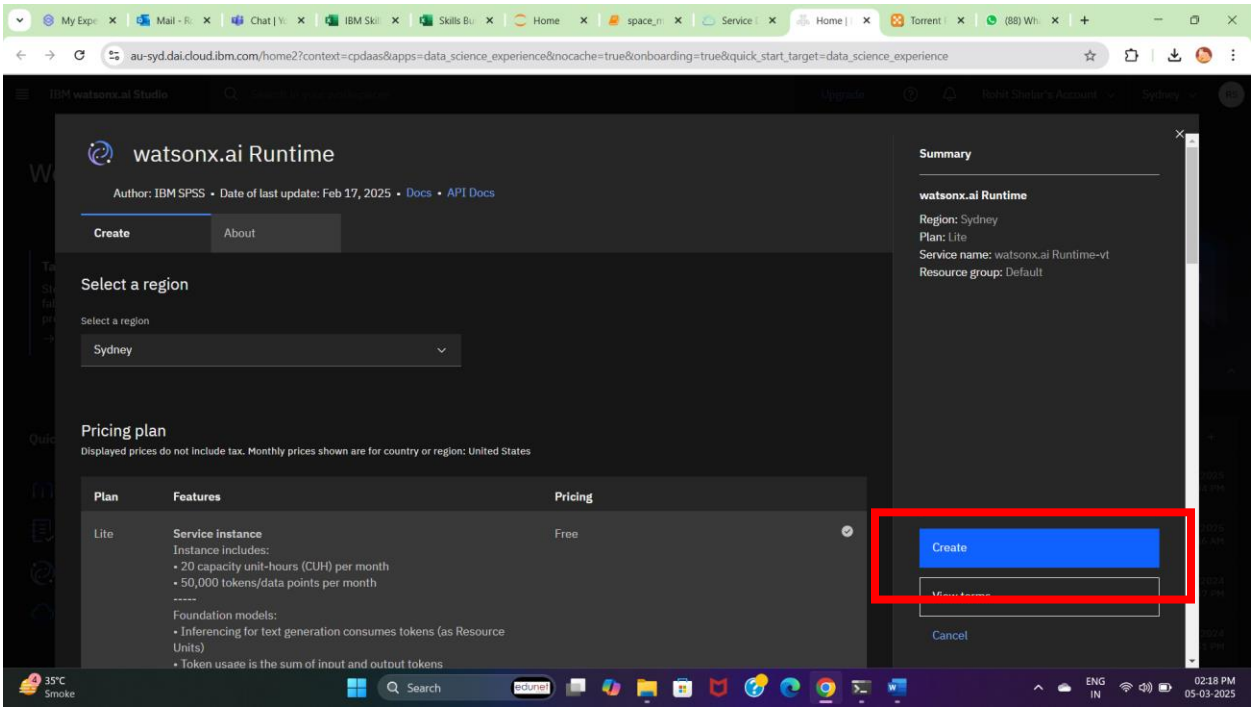
Step7: Click on the Launch in



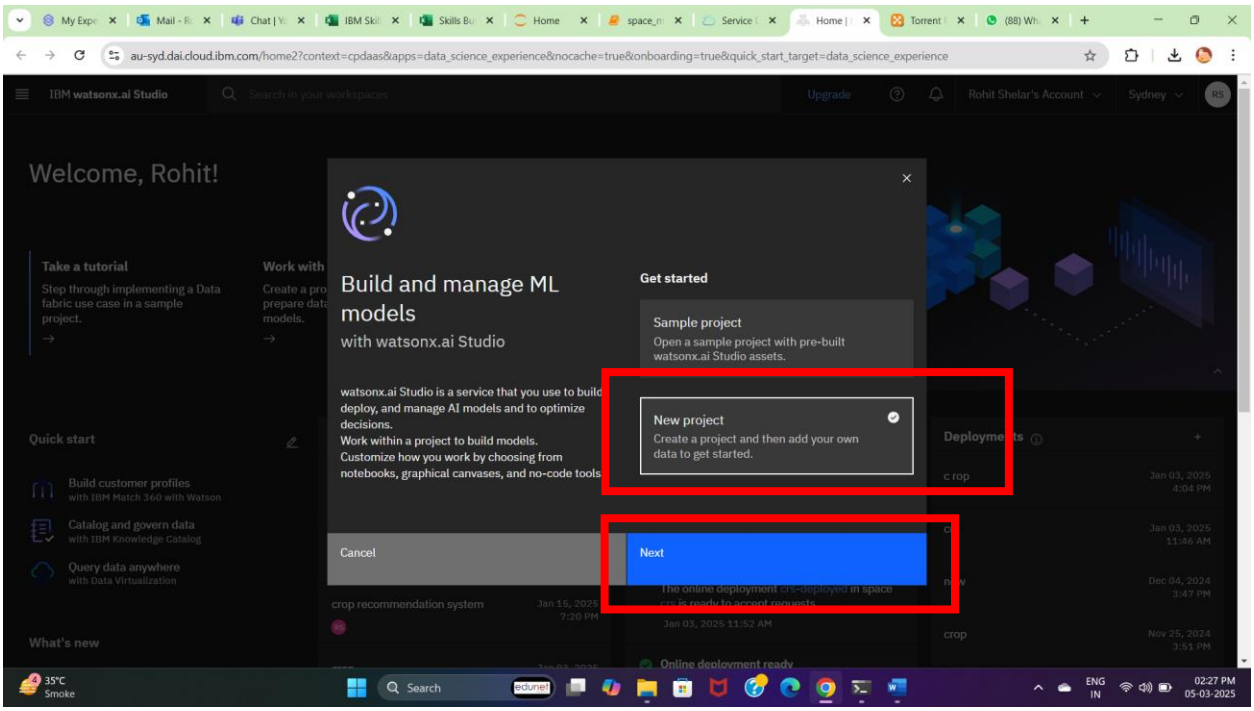
Step8: Select Provision Watsonx.ai Runtime and click on Next.



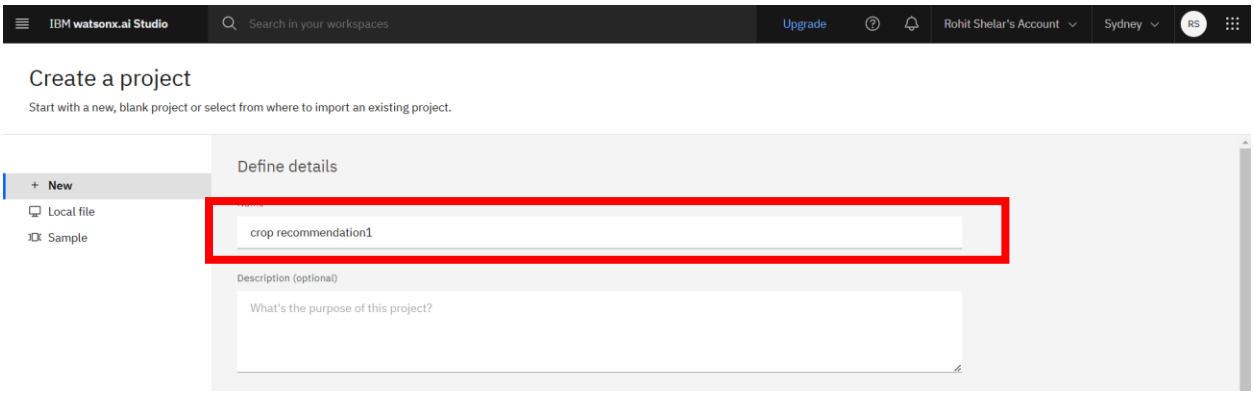
Step9 : Click on the Create.



Step10: Select New project and click on Next.



Step11: Enter project name and scroll a little.



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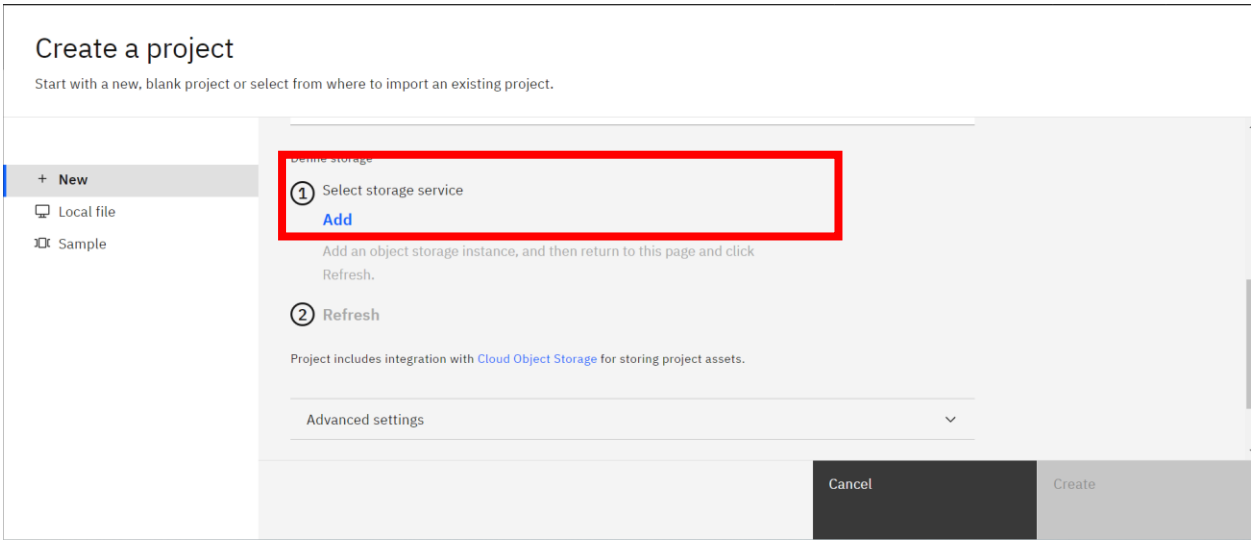
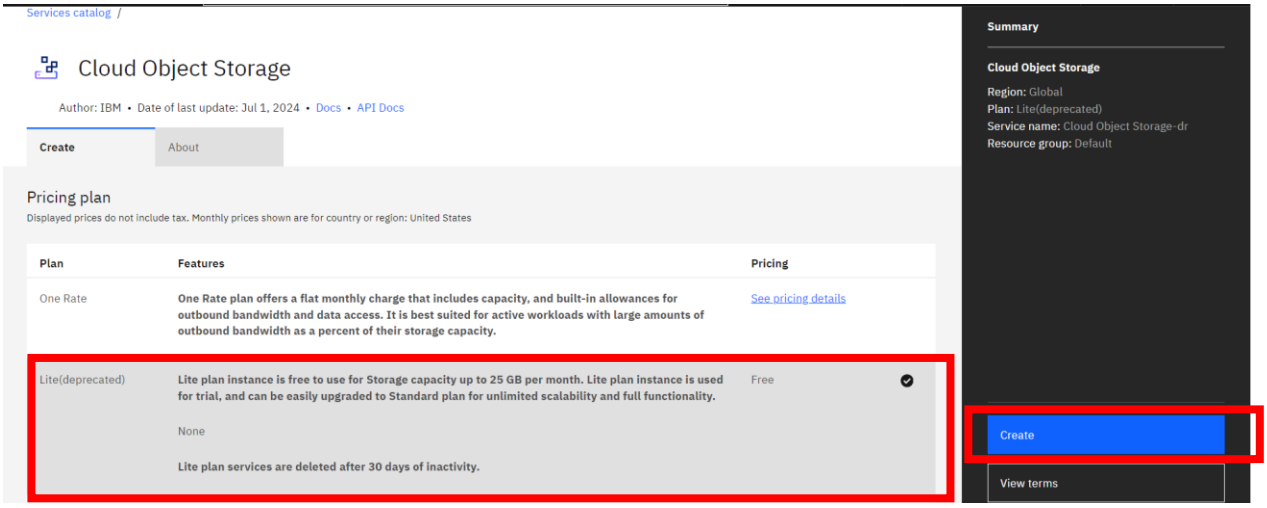
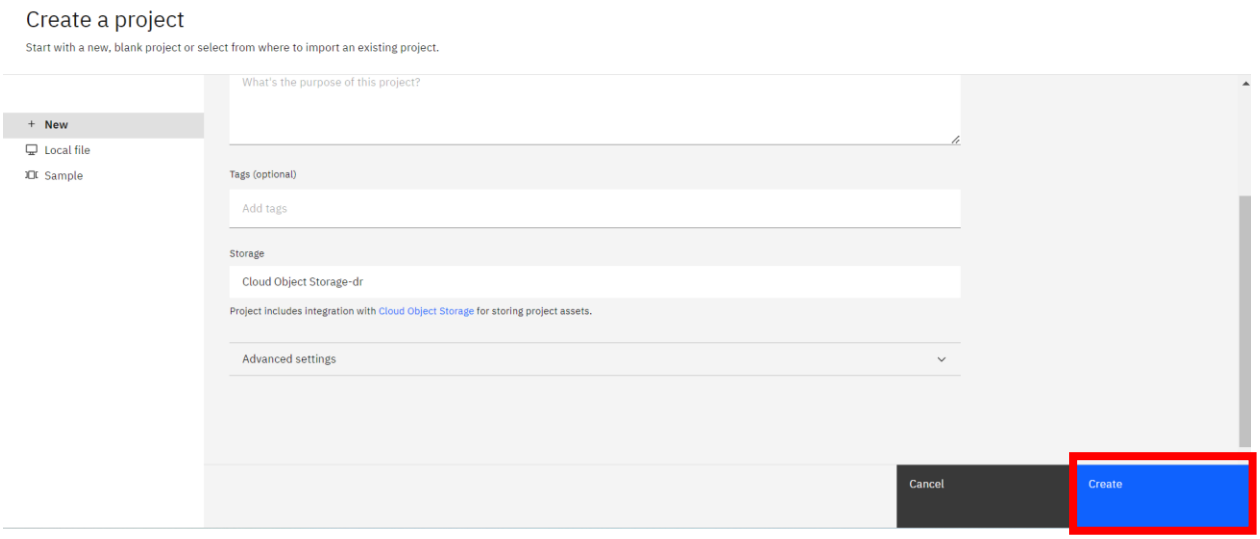
Step12: Click on Add



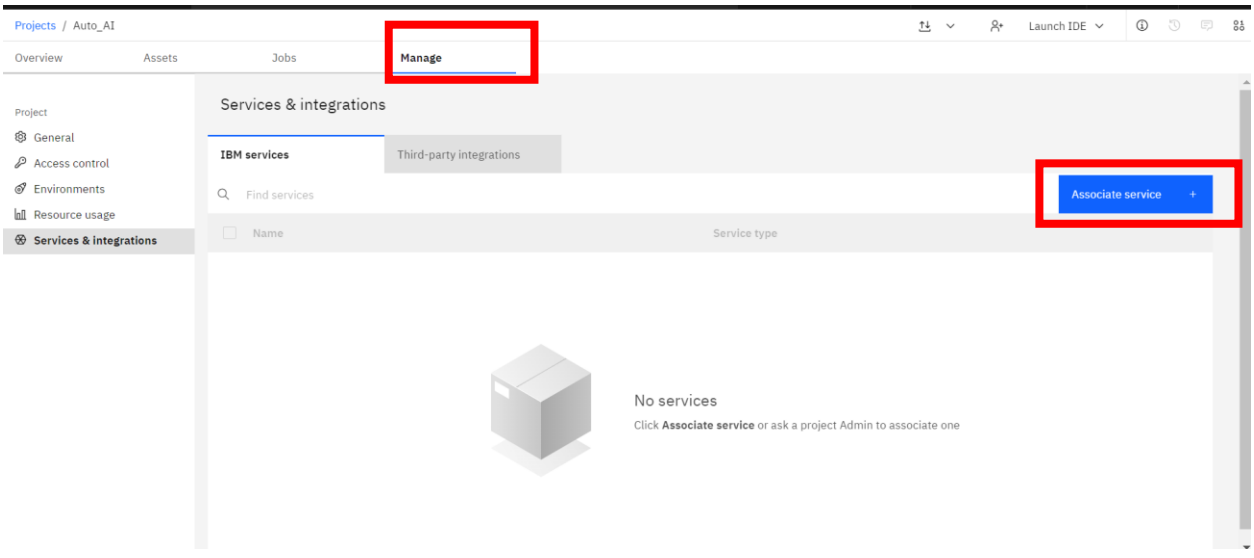
Step13: Select Free plan, Click on Continue



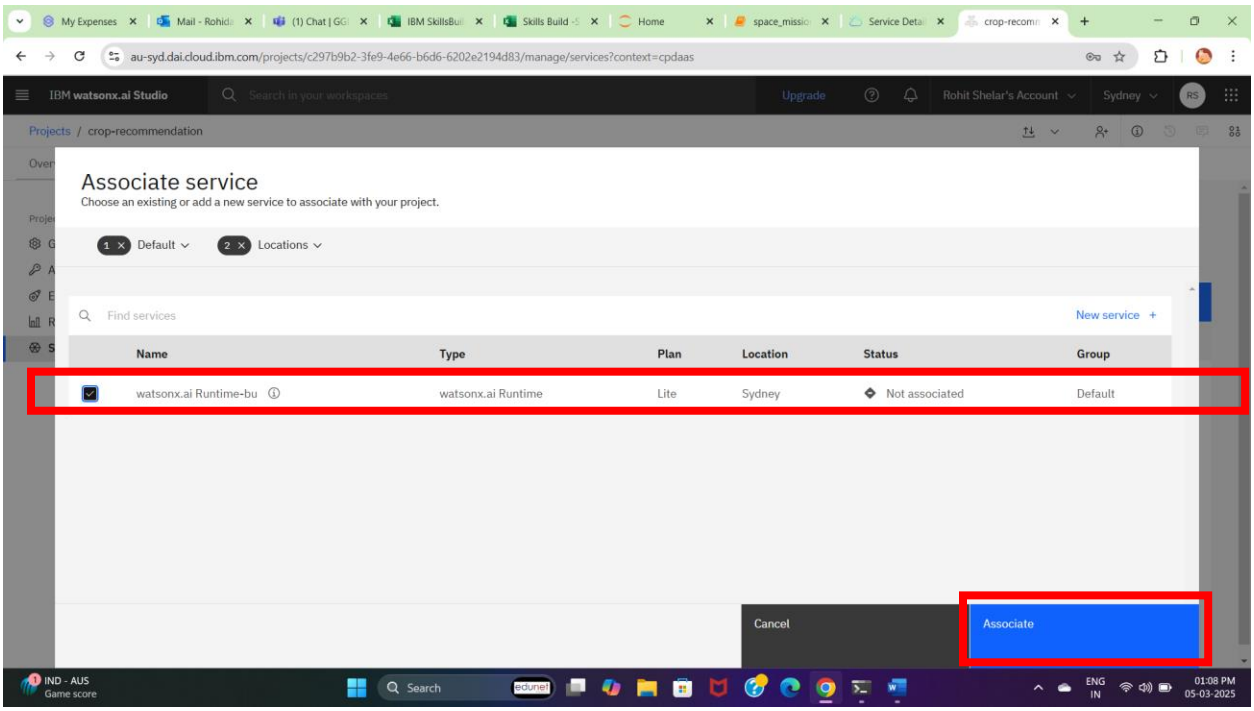
Step14: Click on the Refresh, click on the Create.



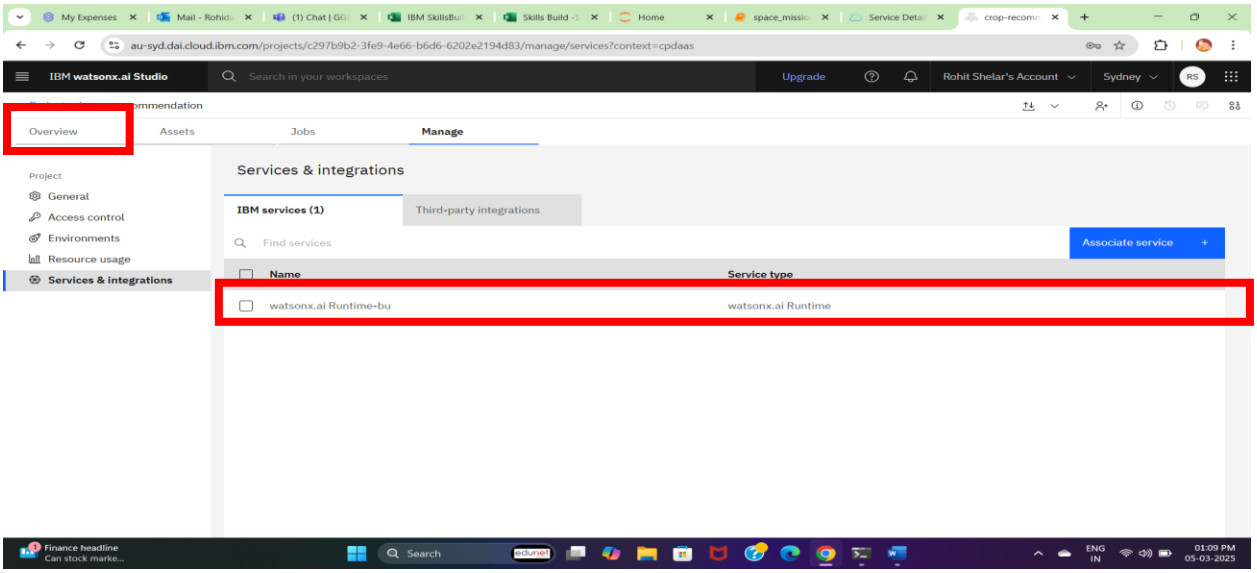
Step15: Click on the Manage and Associate the service.



Step16: Click on the Watsonx.ai Runtime and Associate



Step17: Watsonx.ai Runtime service associated now click on the Overview.



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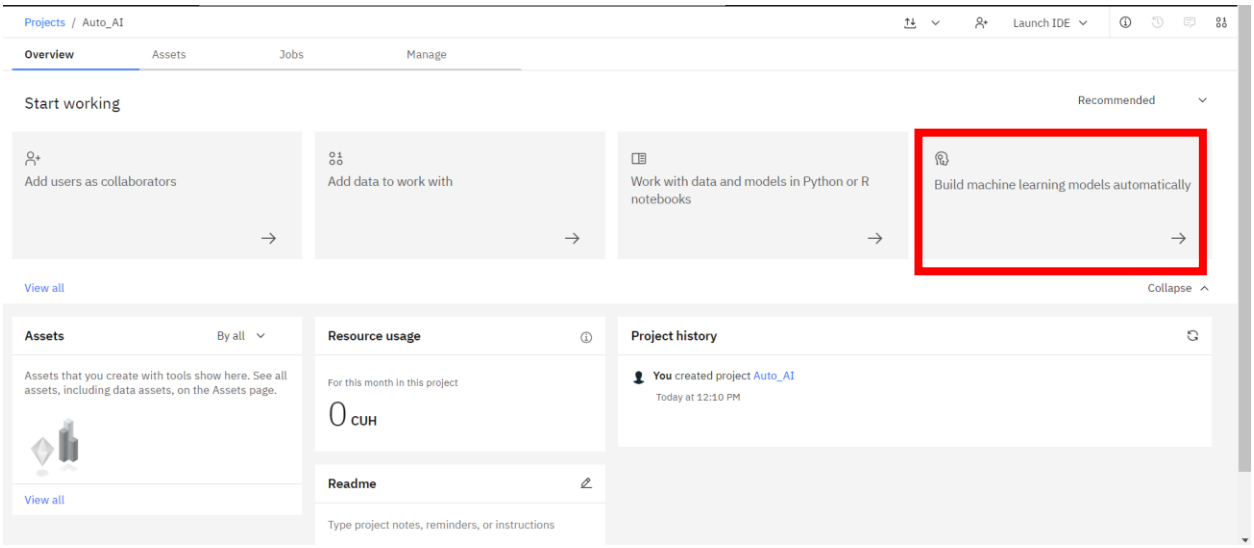
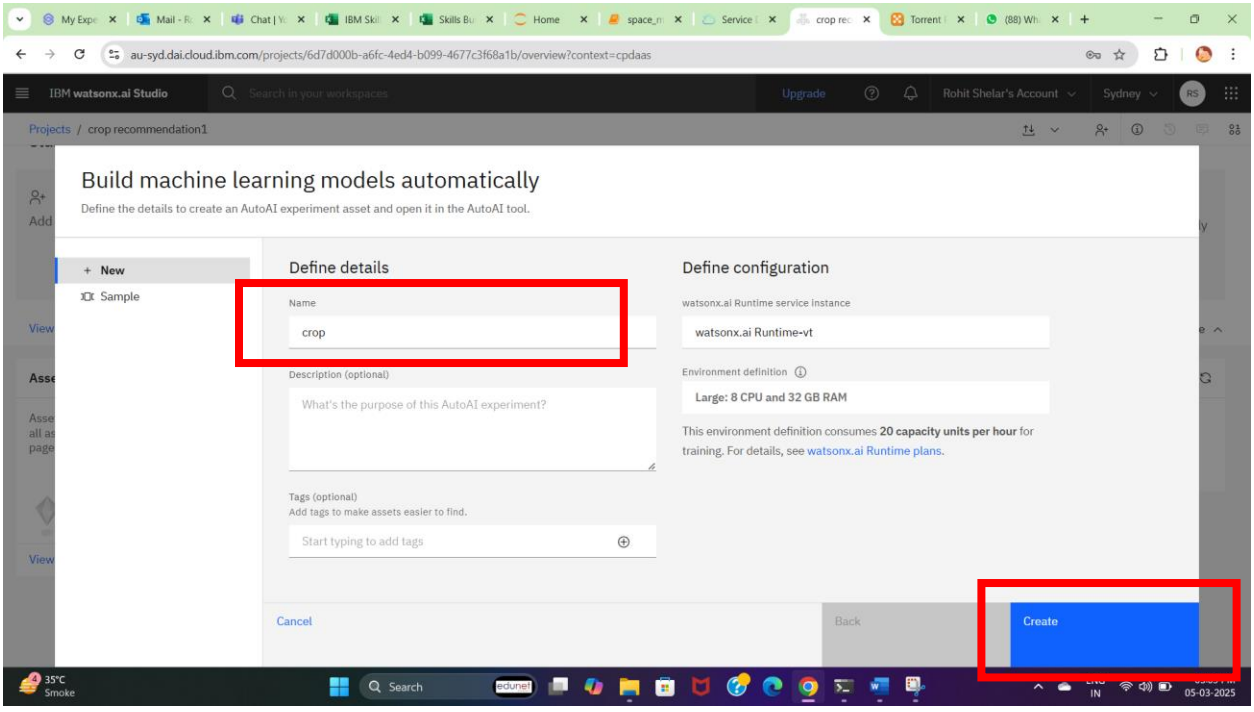
Step18: Click on “Build machine learning models automatically”



Step19: Enter the experiment name and click on Create



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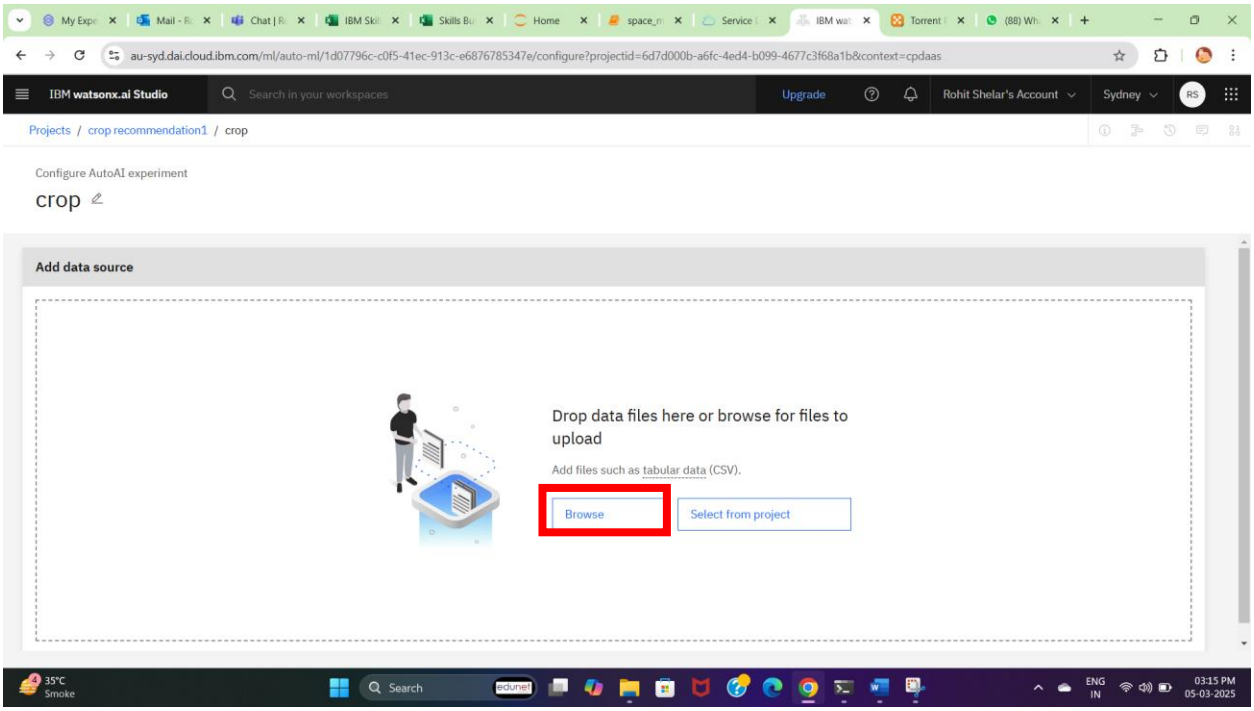
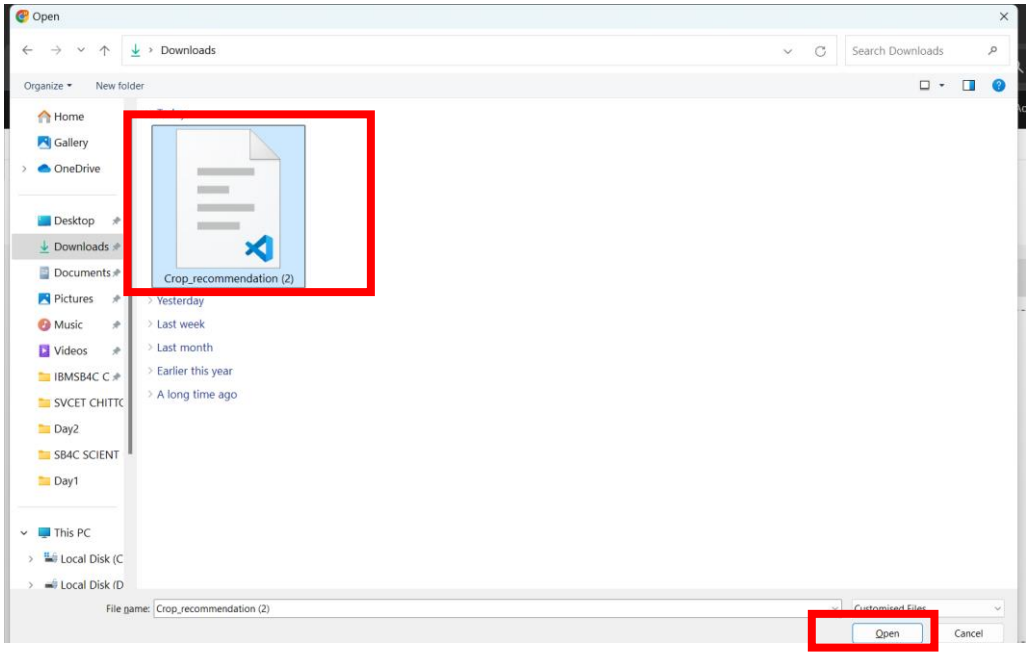
Step20: Add the downloaded data set (Crop_recomondation.csv) with the help of Browse option



Step21: Select the data set and click on Open



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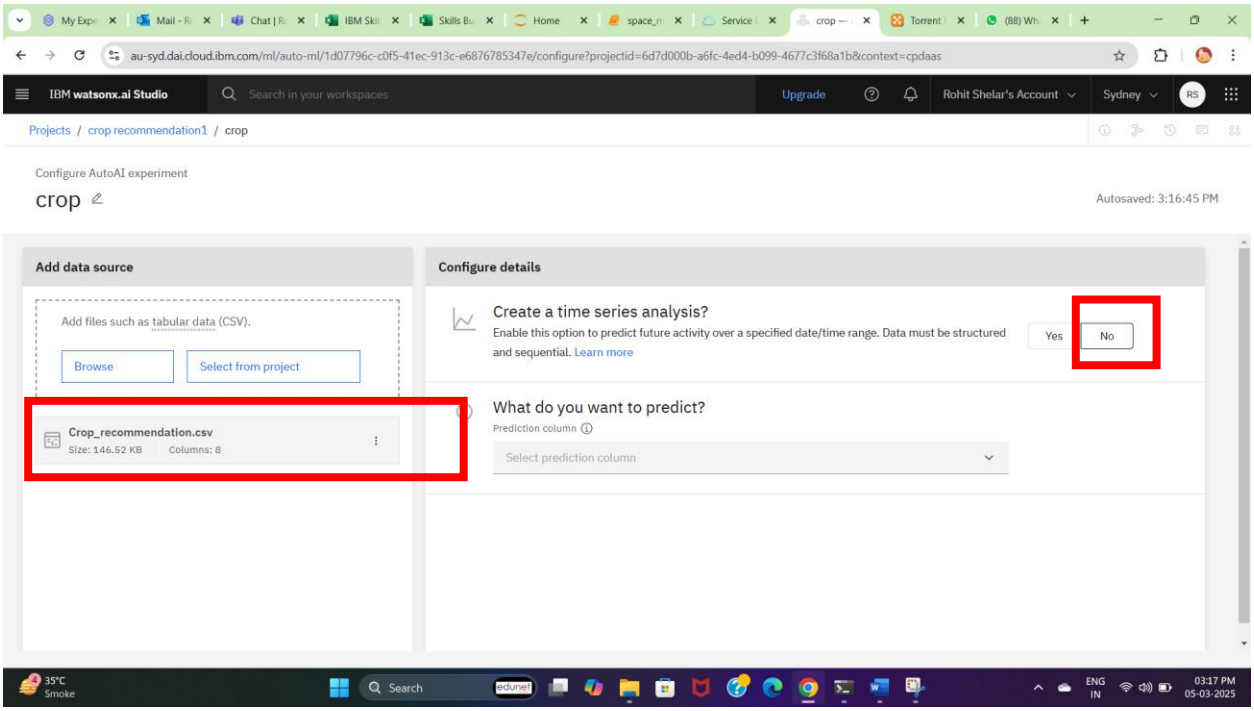
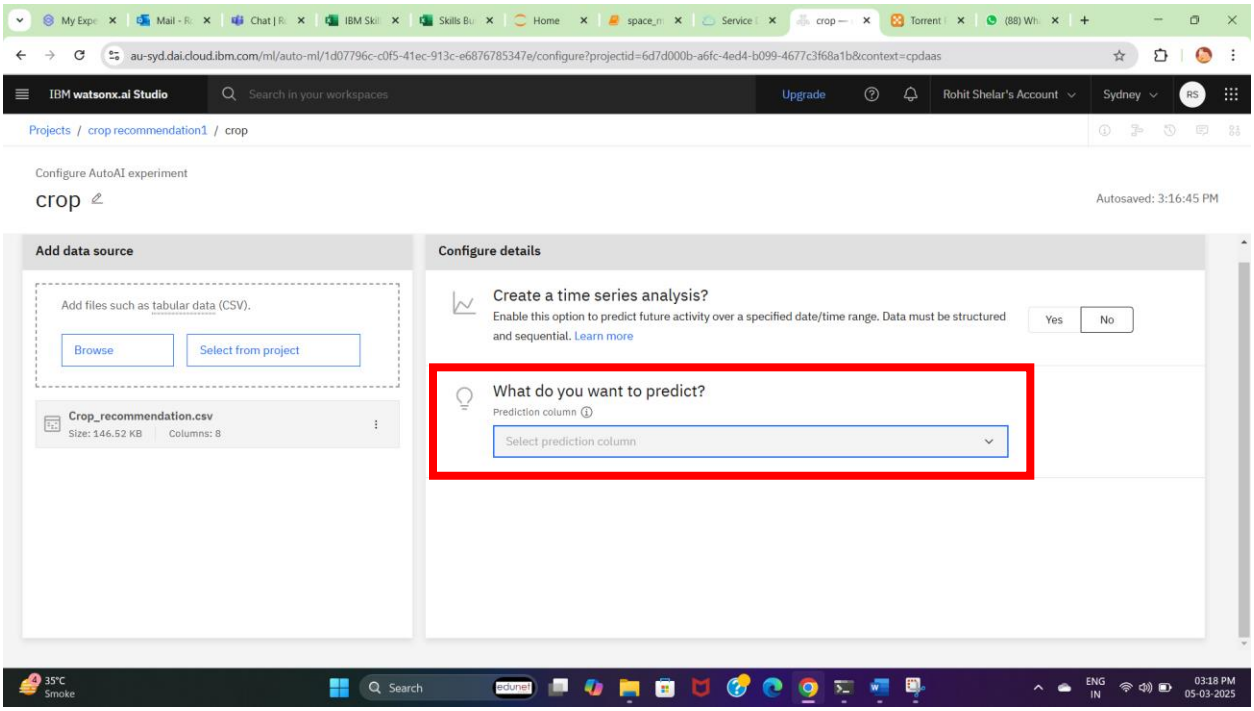
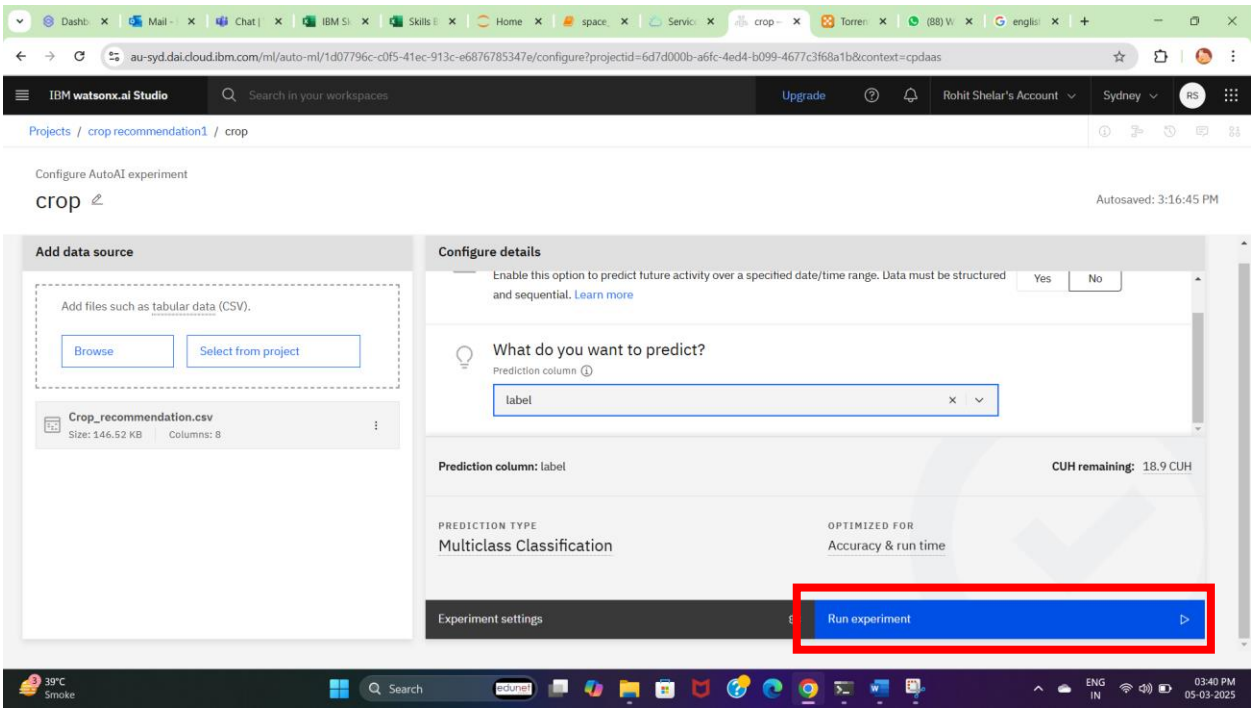
Step22: Data set is loaded. In create a time series analysis? You can choose No option



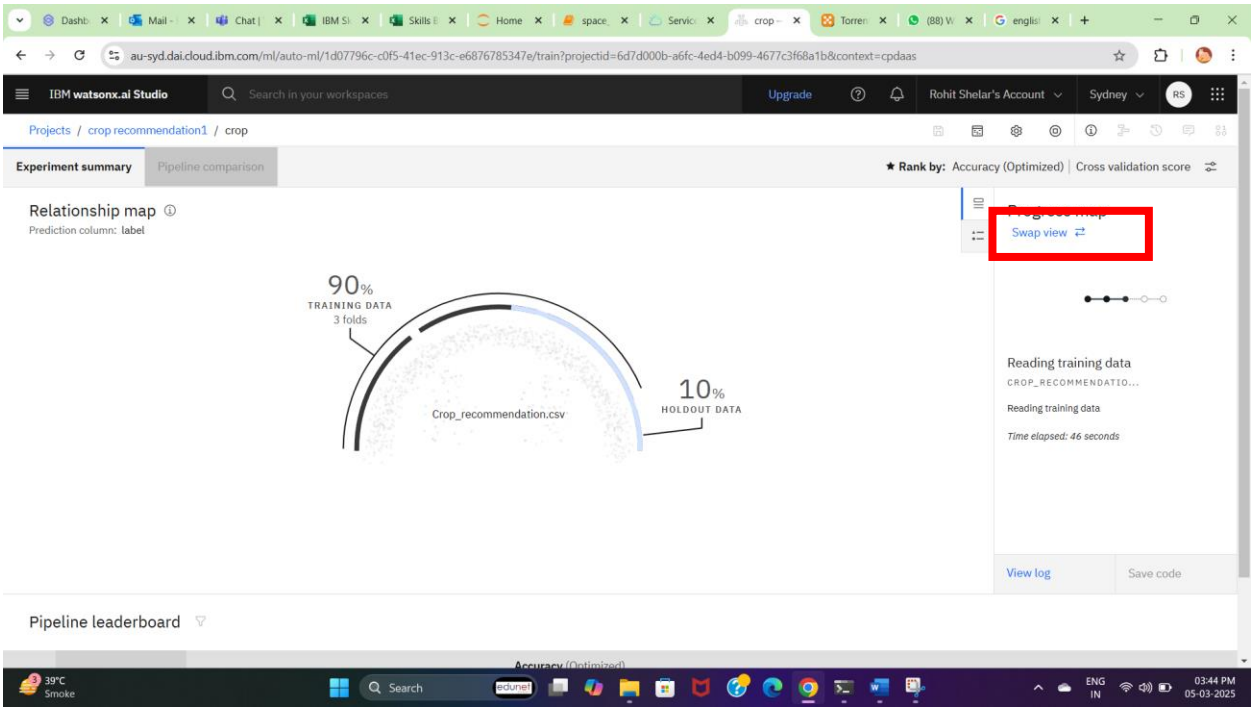
Step23 : Choose prediction column.



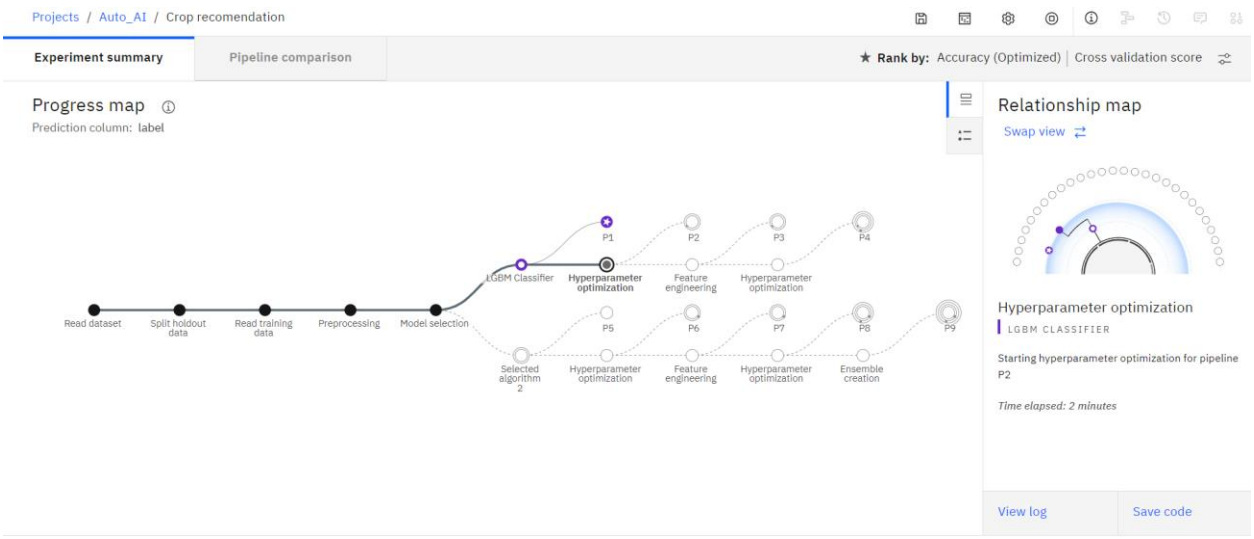
Step24: Now click on the Run experiment



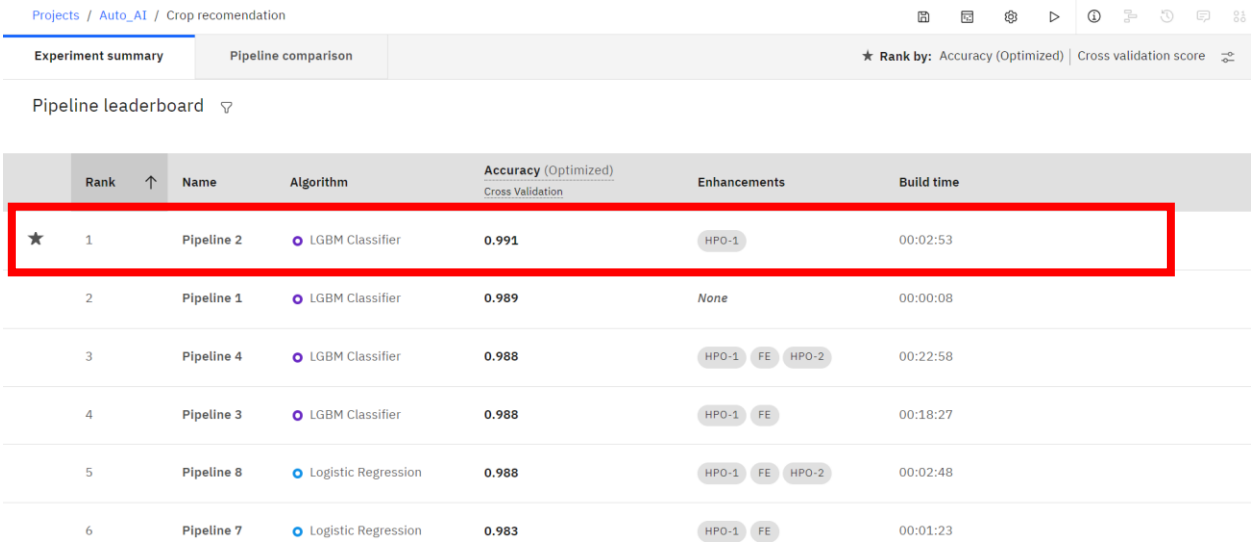
Step25: Auto AI experiment is running. Now click on swap view



Step26: Pipelines are building.

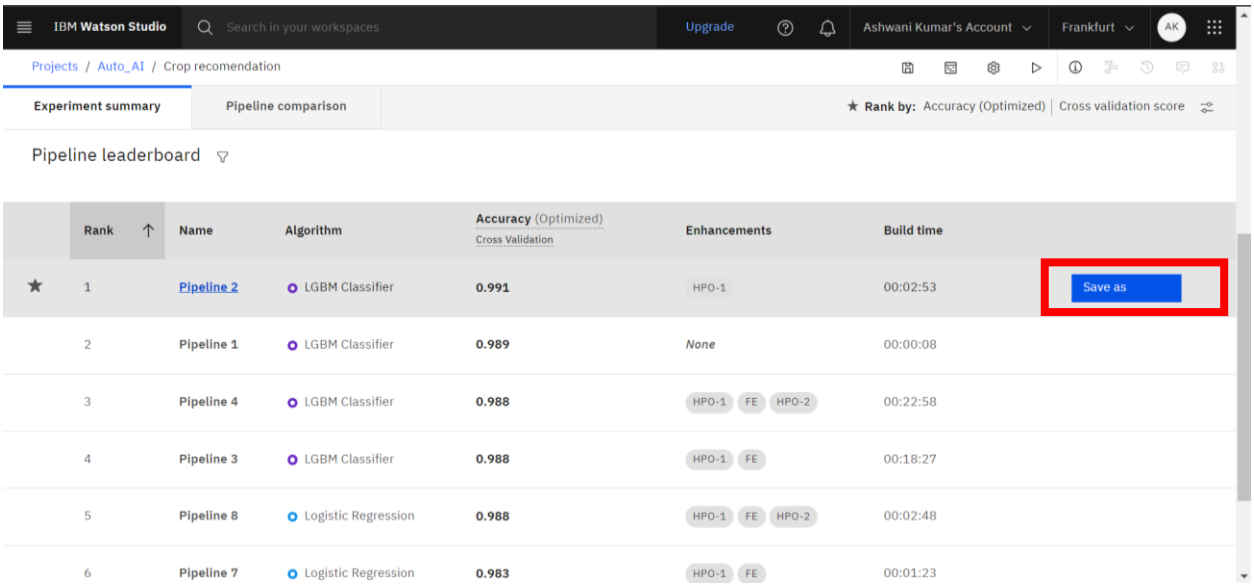


Step27: This is the pipeline leader board. In this Pipeline2 is the top performer.

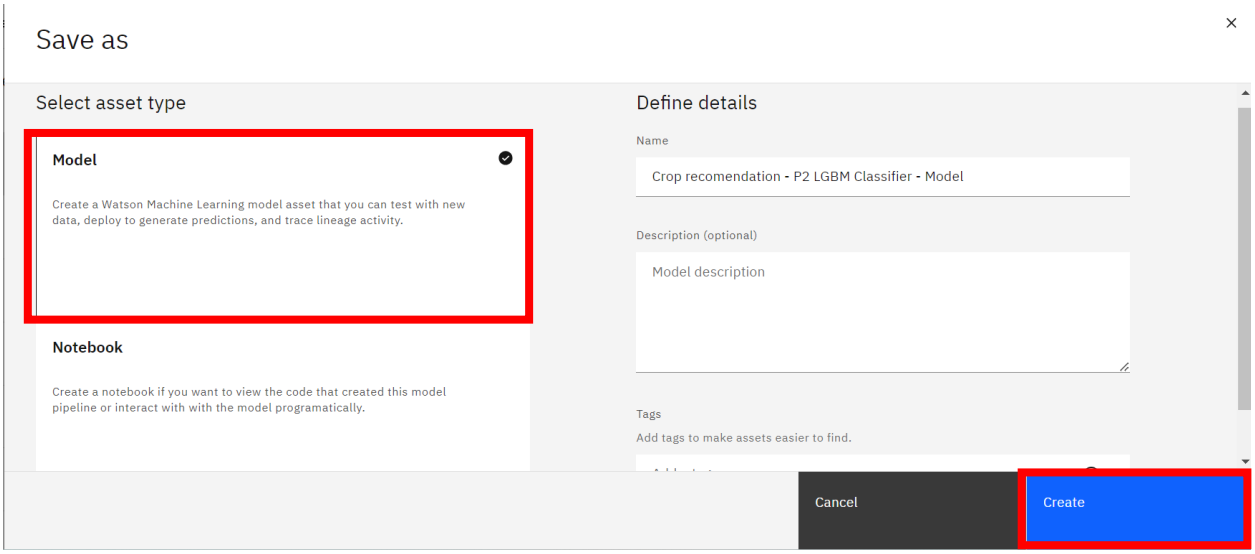


	Rank	Name	Algorithm	Accuracy (Optimized) Cross Validation	Enhancements	Build time
★	1	Pipeline 2	LGBM Classifier	0.991	HPO-1	00:02:53
	2	Pipeline 1	LGBM Classifier	0.989	None	00:00:08
	3	Pipeline 4	LGBM Classifier	0.988	HPO-1 FE HPO-2	00:22:58
	4	Pipeline 3	LGBM Classifier	0.988	HPO-1 FE	00:18:27
	5	Pipeline 8	Logistic Regression	0.988	HPO-1 FE HPO-2	00:02:48
	6	Pipeline 7	Logistic Regression	0.983	HPO-1 FE	00:01:23

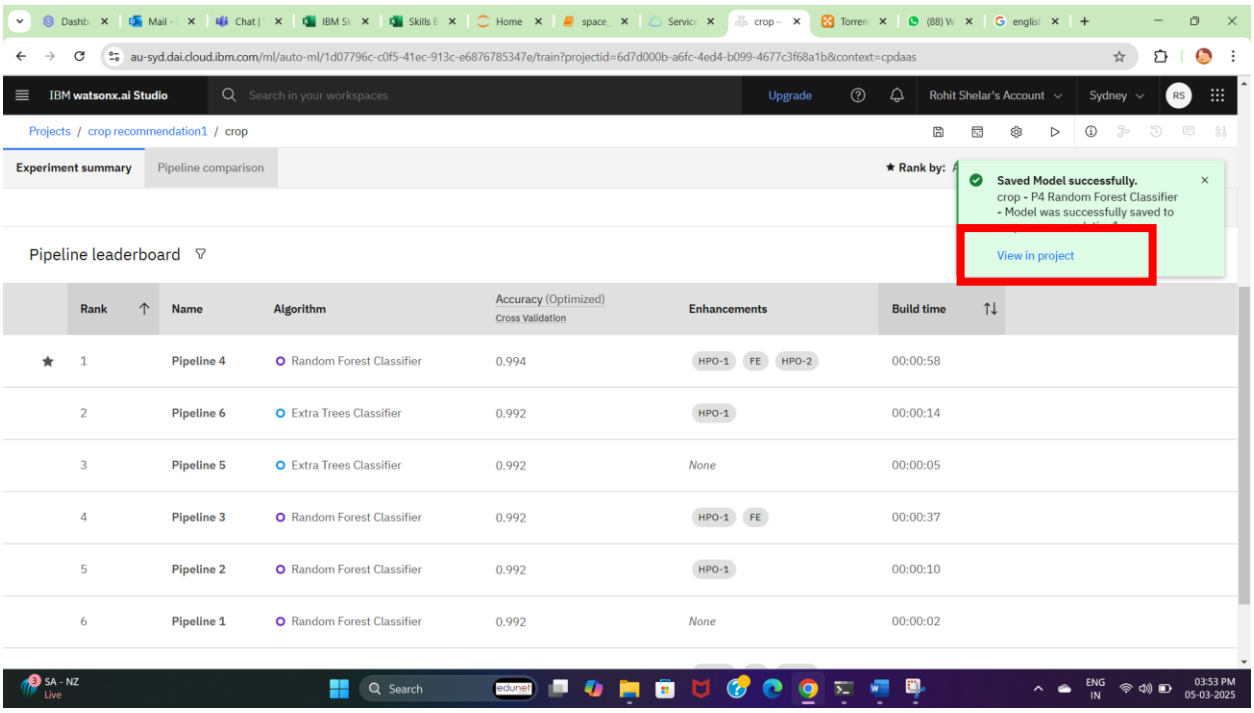
Step28: Now we can save this model. Click on the Save as



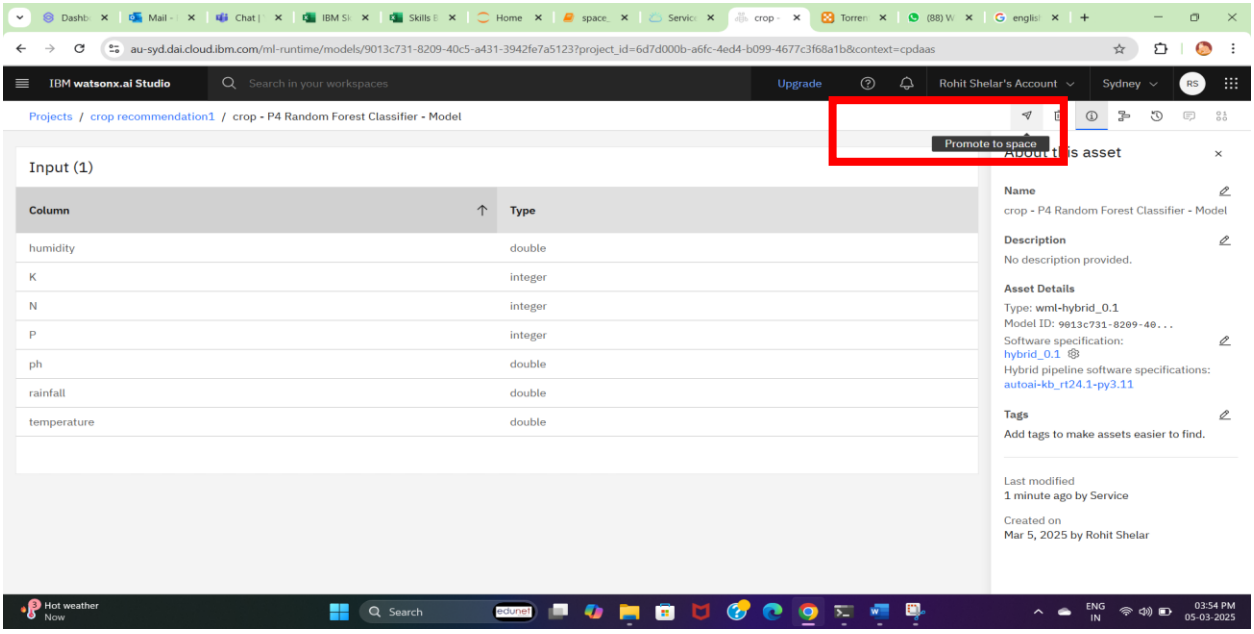
Step29: Choose Model asset and click on Create



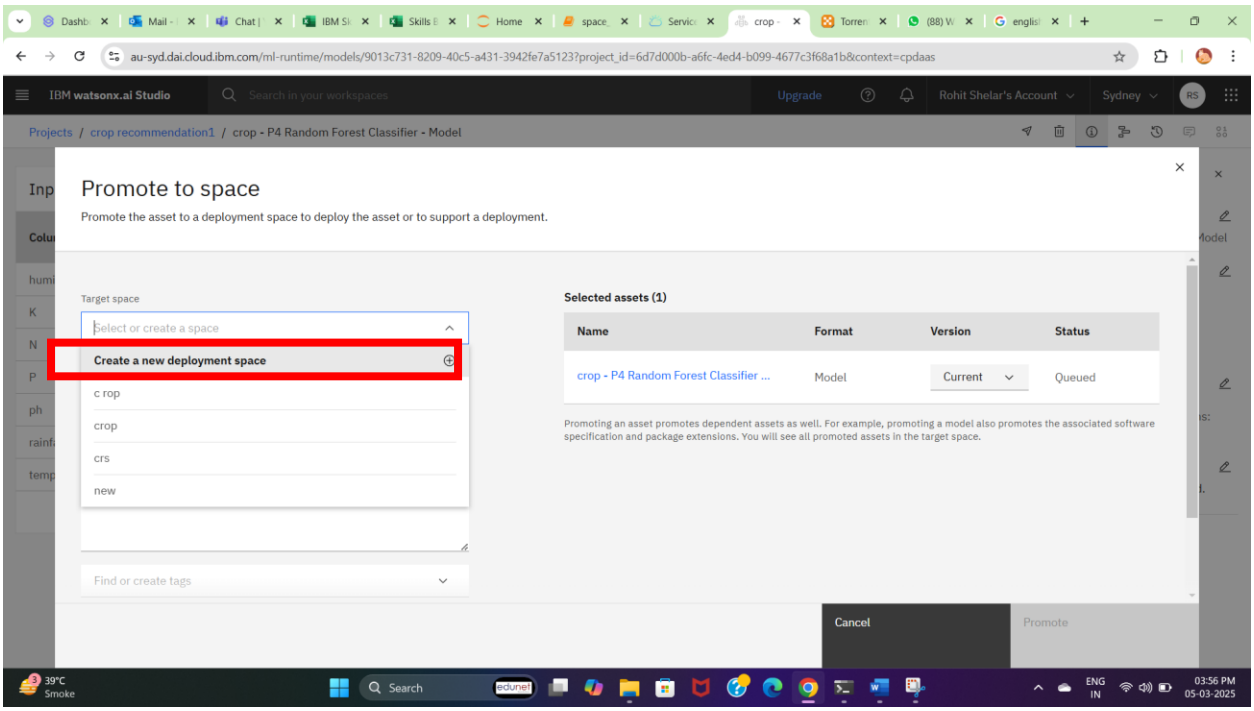
Step30: The mode saved successfully and click on view in project



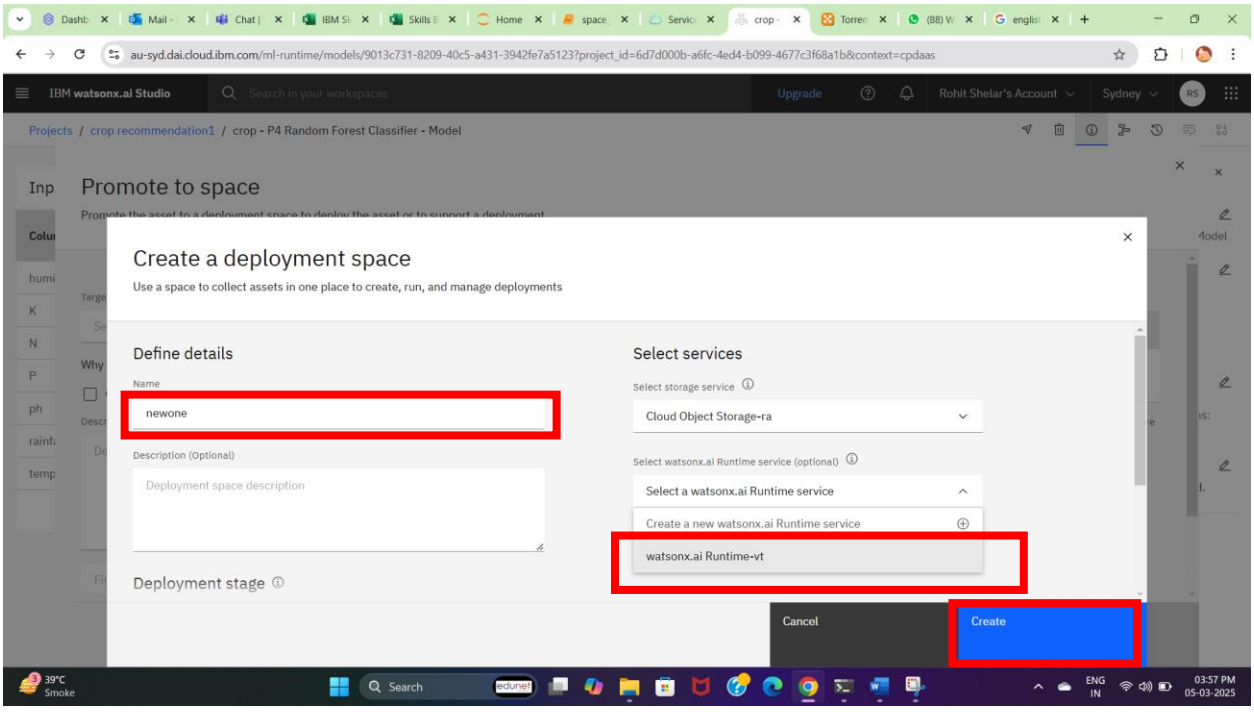
Step31: Click on promote to space on arrow



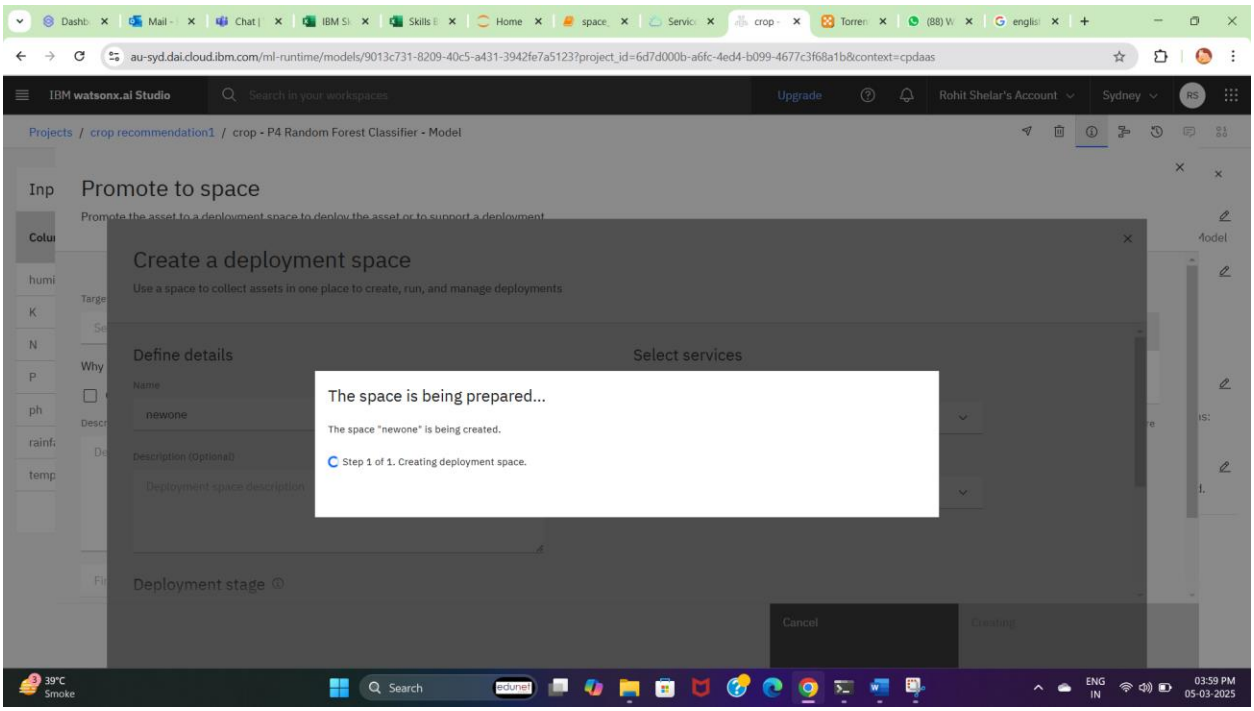
Step32: Create the new deployment space.



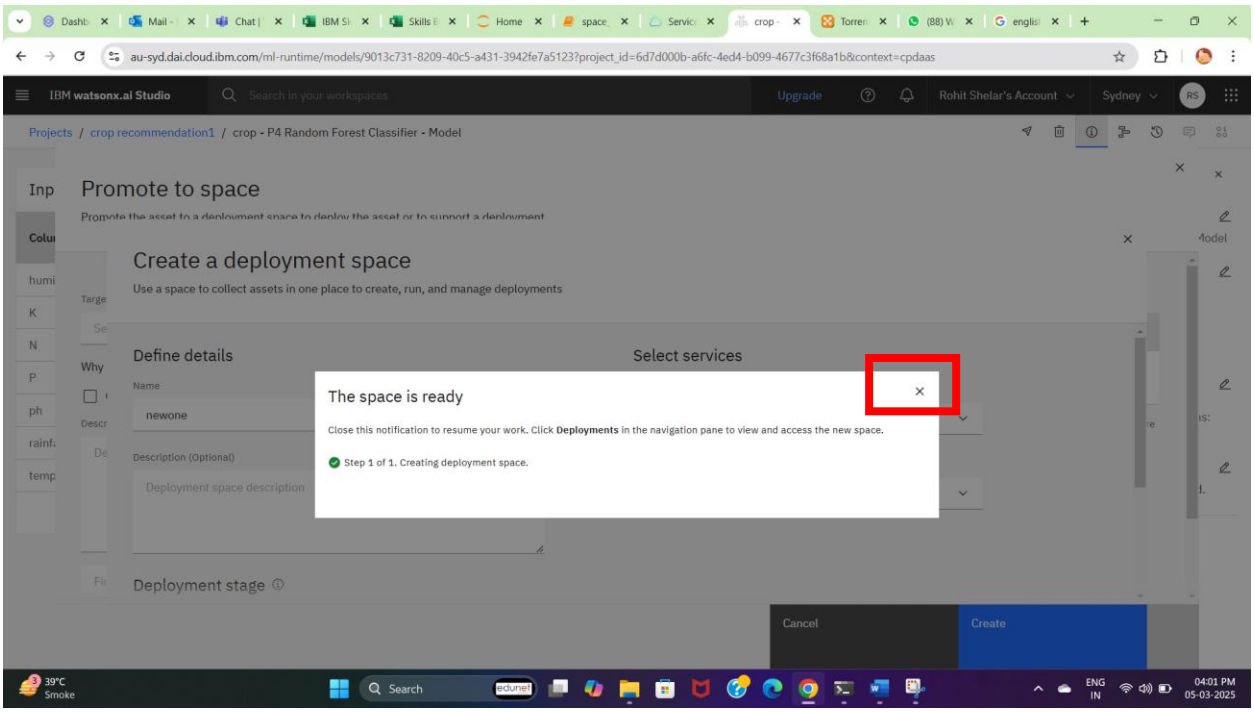
Stpe33: Give the deployment space name and select watsonx.ai Runtime service , click on Create



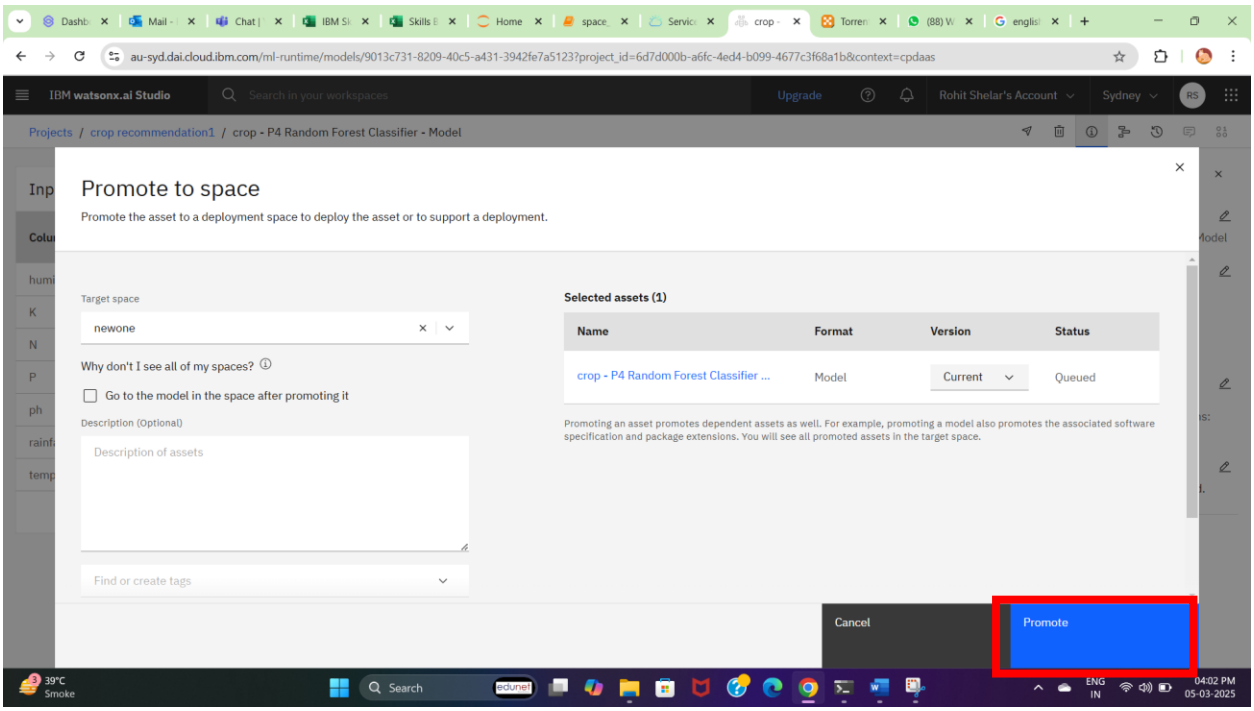
Step34: it's preparing the deployment space.



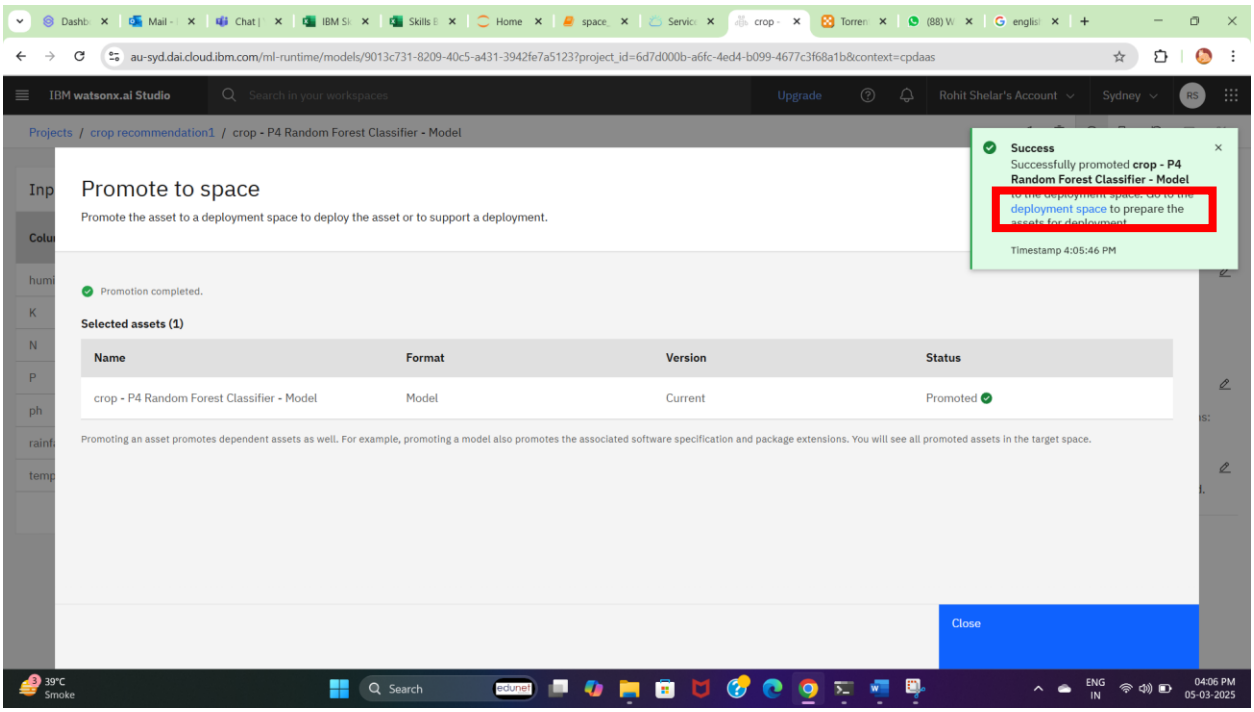
Step35: Now the space is ready , close the dialog box



Step36: Click on the promote.



Step37: it's promoted and click on deployment space.



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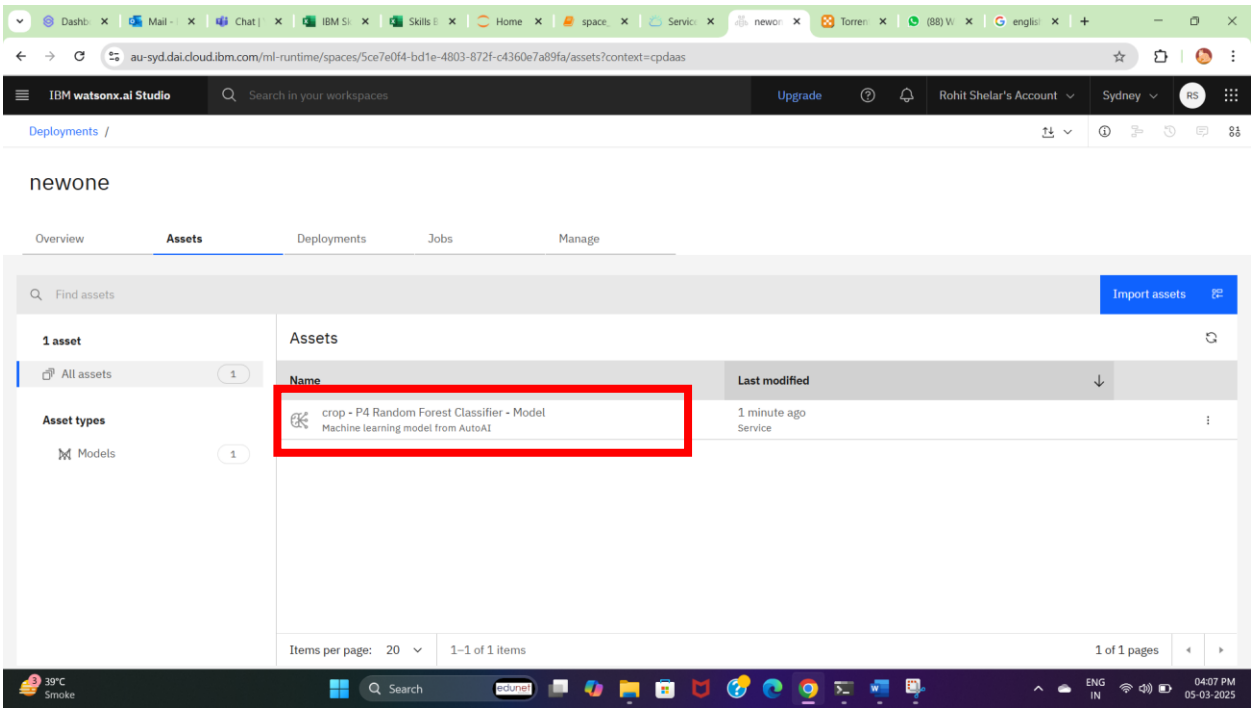
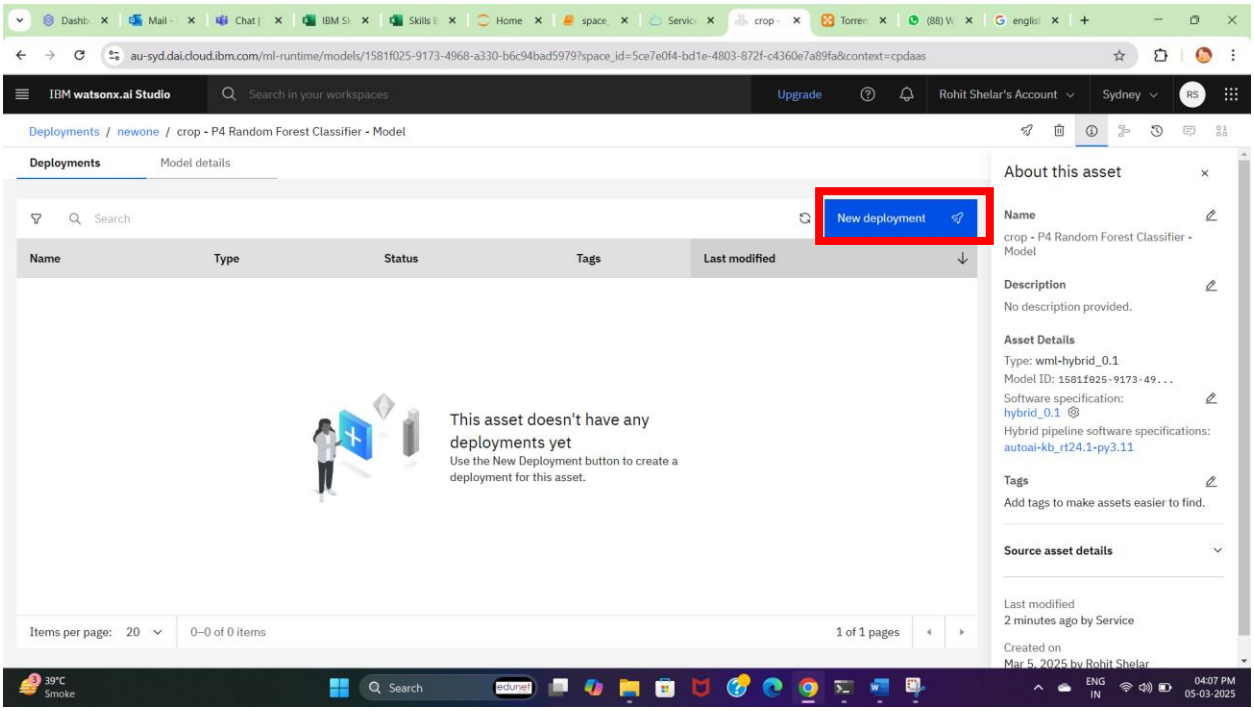
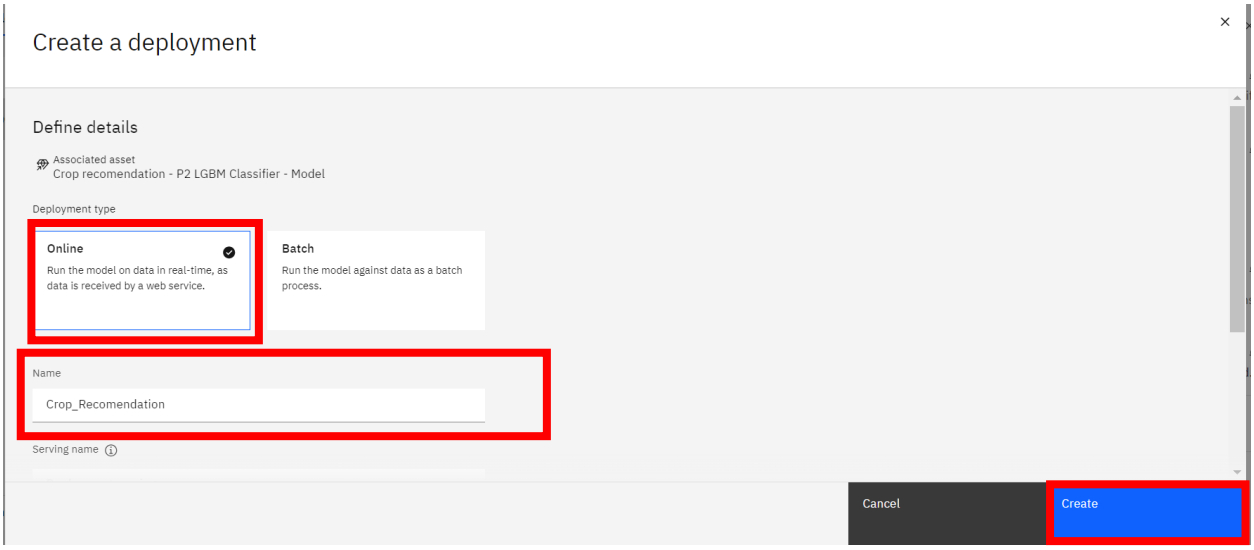
Step38: Click on the Asset name.



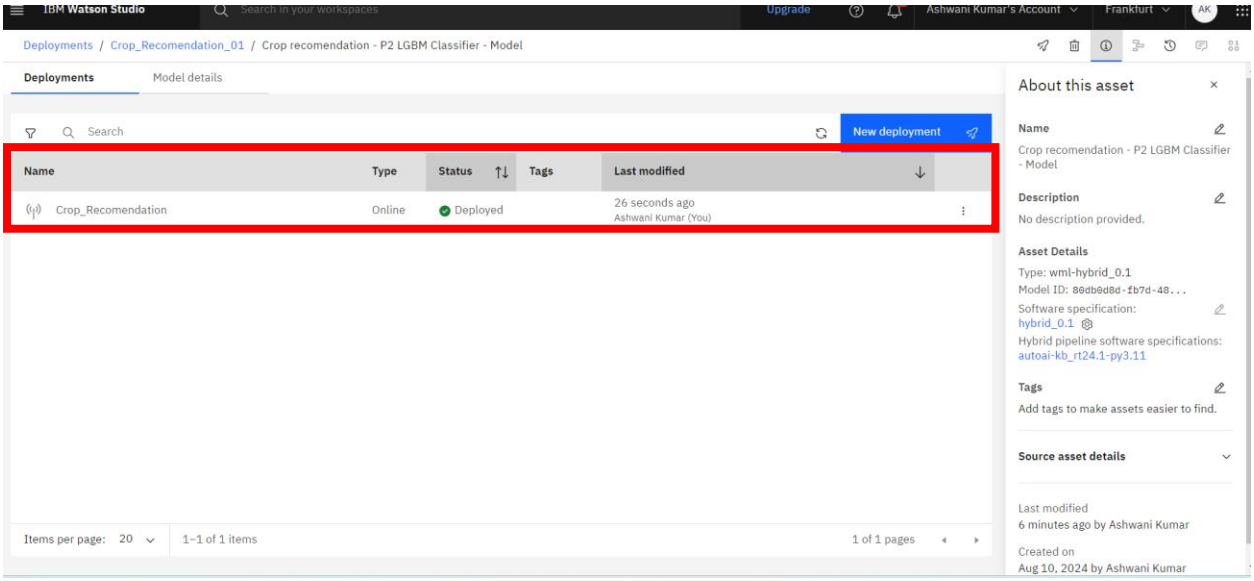
Step39: Click on the New deployment



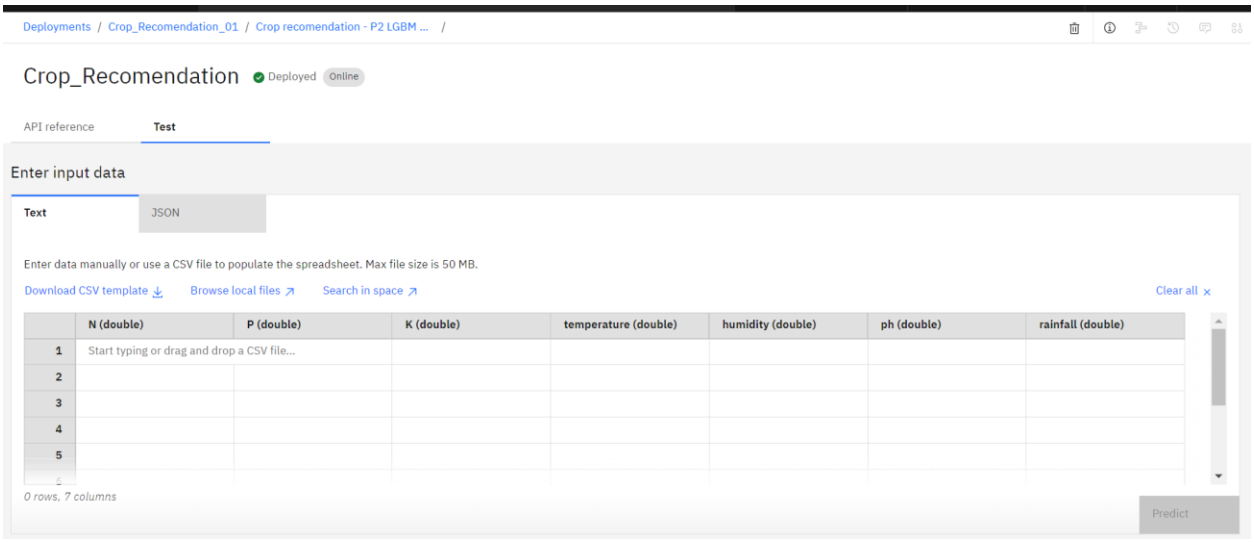
Step40: select deployment type and give the deployment name. Click on the Create.



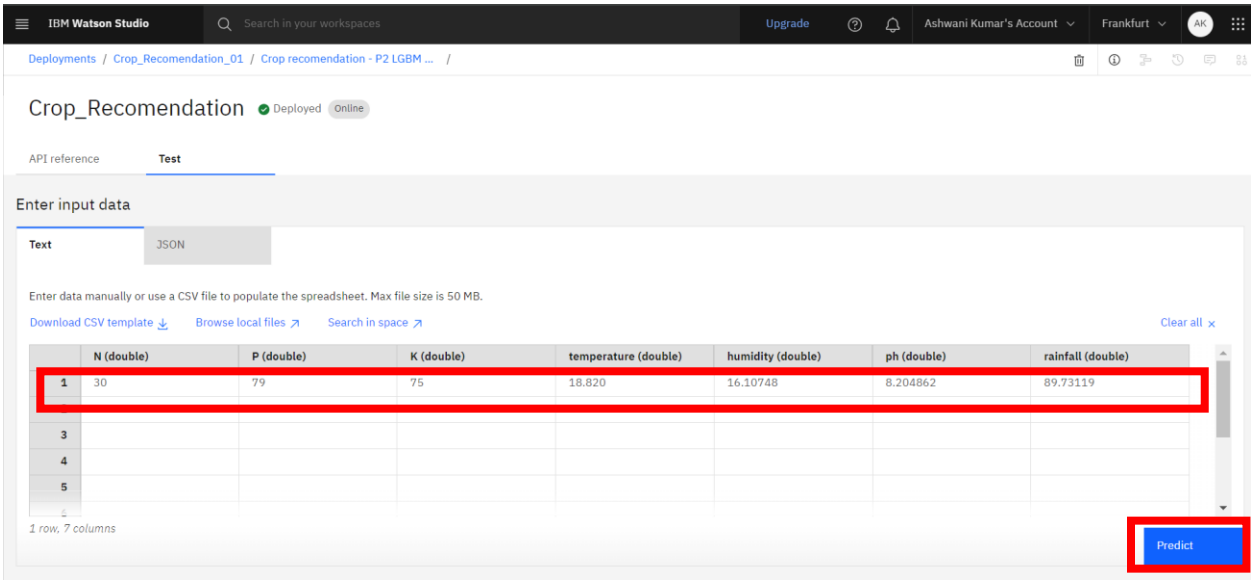
Step41: Model is deployed.



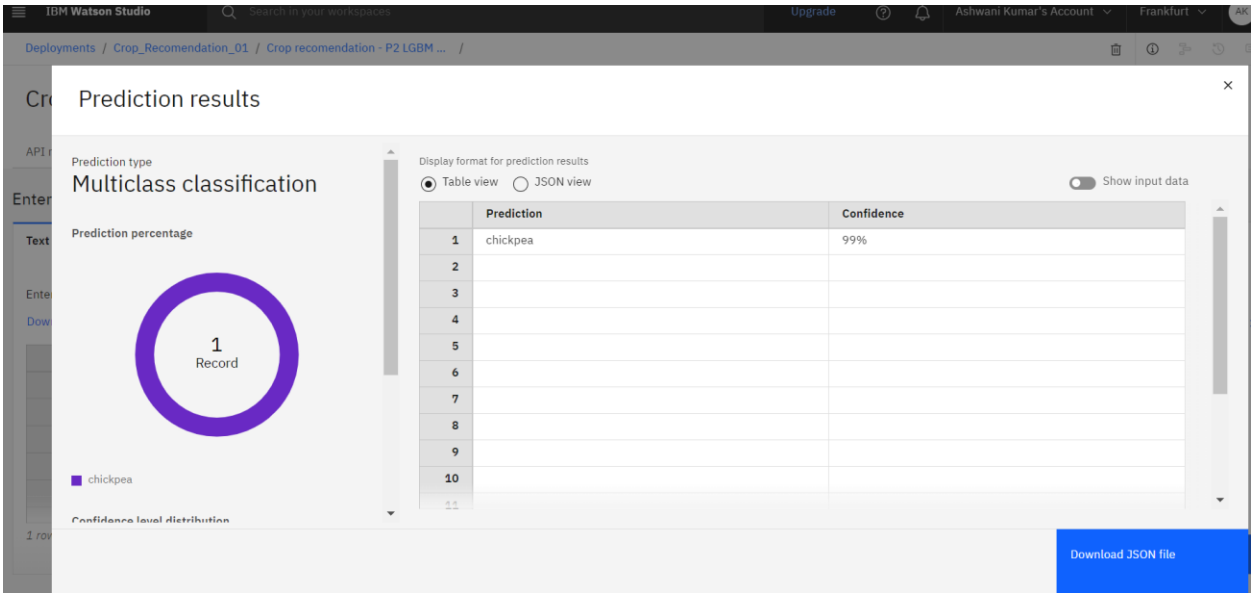
Step42: Now click on Test to predict with new values.



Step43: Enter the new values and click on predict



Step44: It's predicted label name with 99% confidence.


IBM Watson Studio
Upgrade
Ashwani Kumar's Account
Frankfurt
Deployments / Crop_Recomendation_01 / Crop recomendation - P2 LGBM ... /
Prediction results
Prediction type
Multiclass classification
Prediction percentage
1
Record
chickpea
Confidence level distribution
Display format for prediction results
Table view
JSON view
Show input data
Prediction
Confidence
1
chickpea
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