***PROJECT REPORT-***

***FIRE ALERT MONITORING SYSTEM***

***GOAL 1: SENDING DATA FROM IOT SENSORS TOAWS IOT.***

***GOAL 2: SENDING DATA FROM AWS IOT TO DYNMODB DATABASE.***

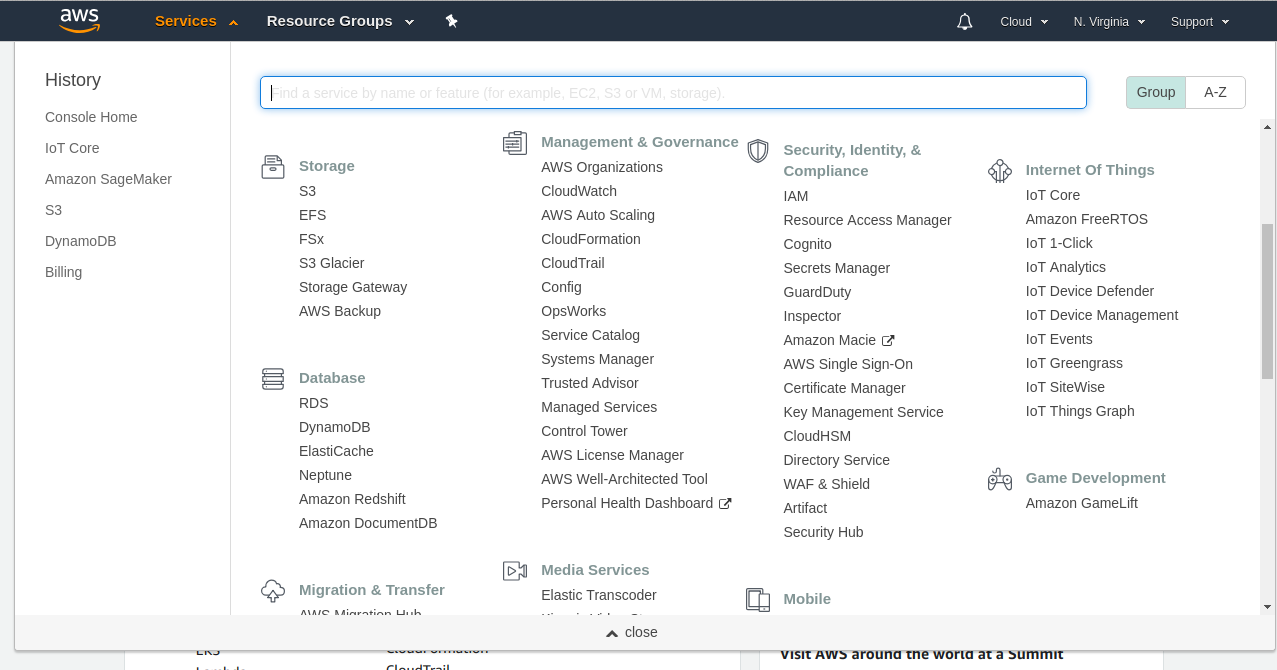
***GOAL 3: MAINTAINING CSV FILE IN S3 BUCKET.***

***GOAL 4: APPLYING MACHINE LEARNING ALGO. THROUGH AWS SAGEMAKER.***

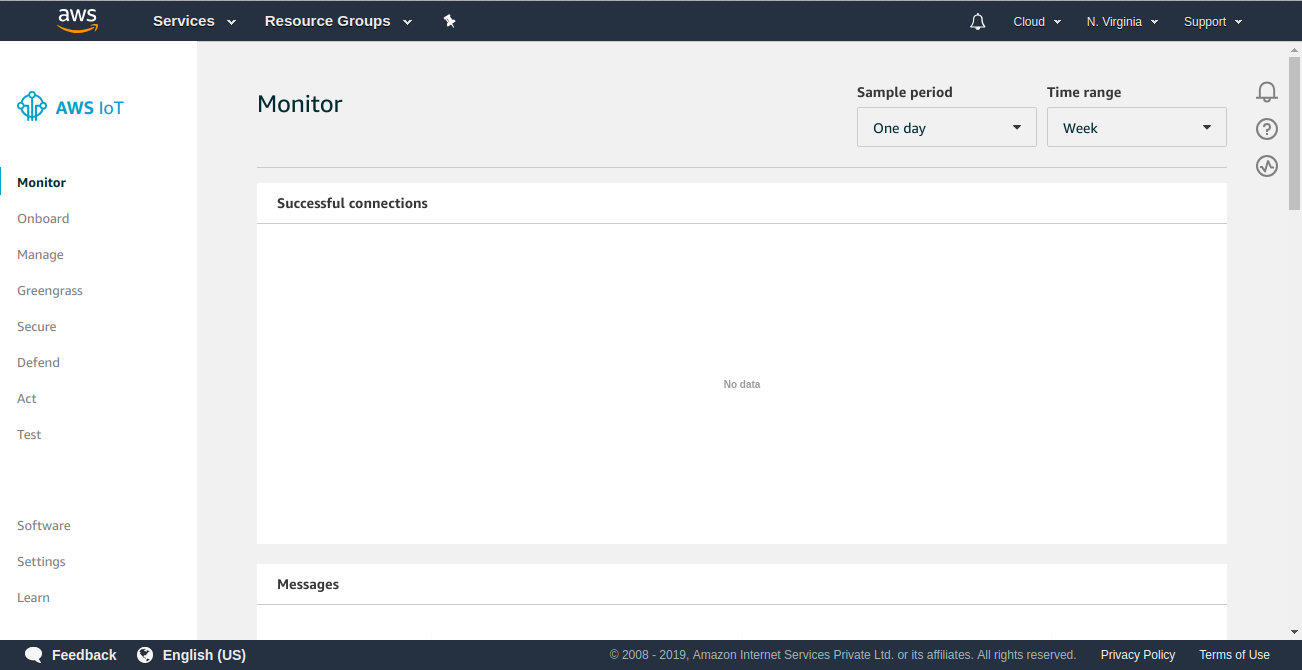
***GOAL 5: ARDUINO CODE.***

***GOAL 1: SENDING DATA FROM IOT SENSORS TO AWS IOT.***

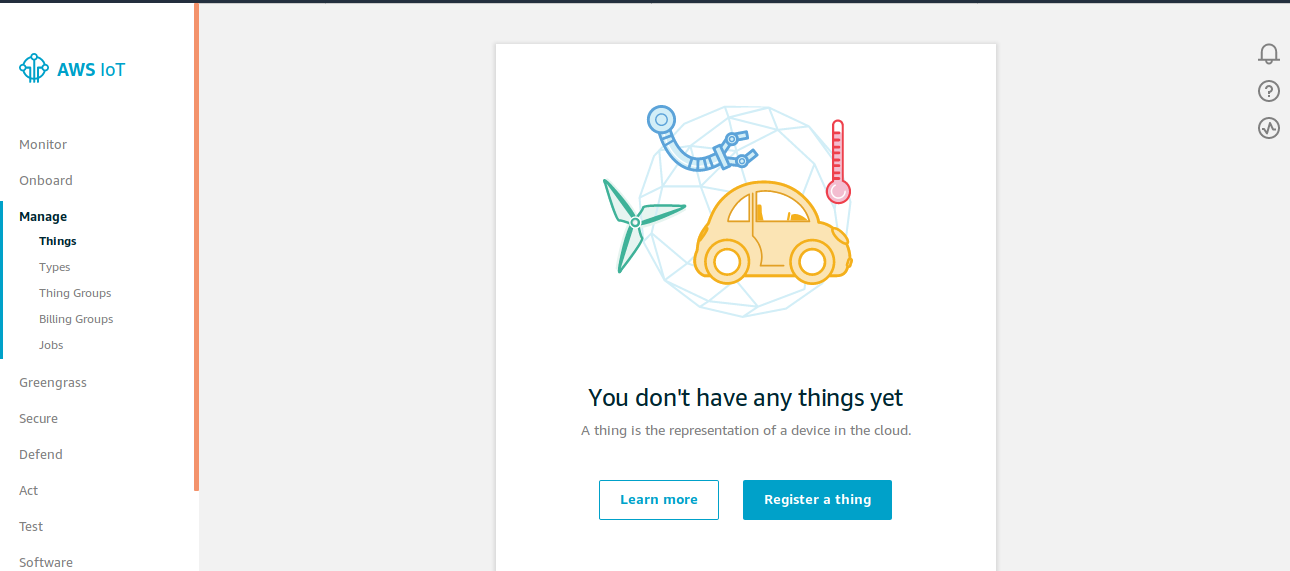
**STEP 1: LOGIN TO AN AWS ACCOUNT.**



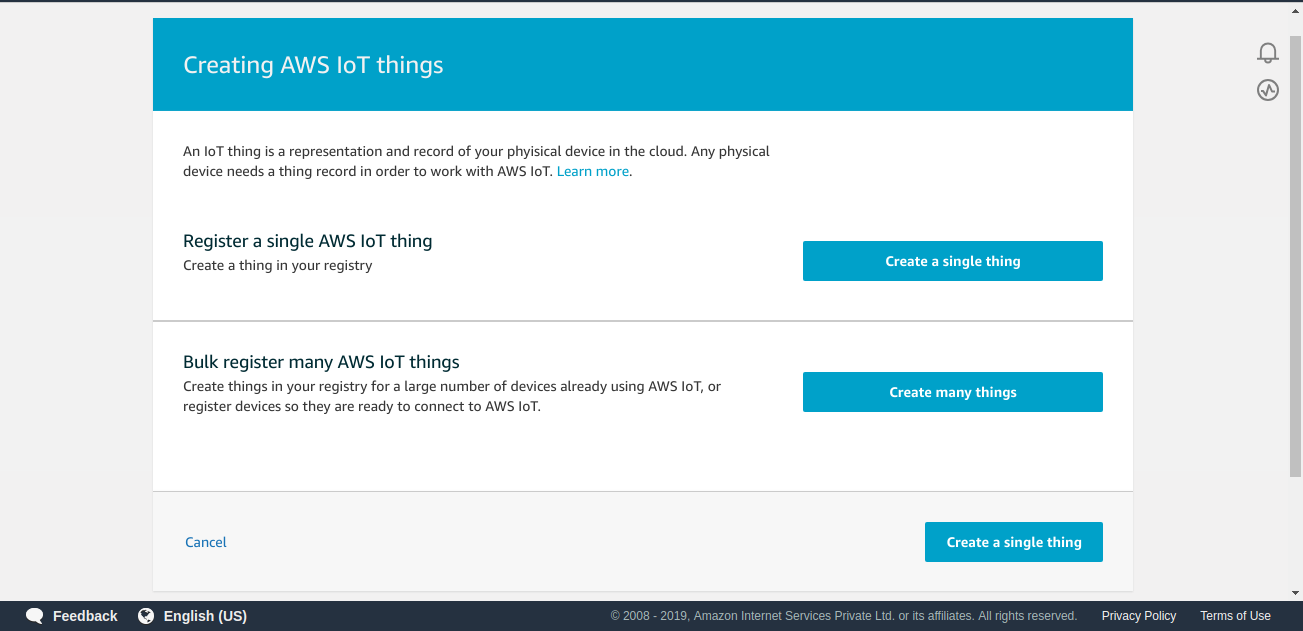
**STEP 2: GO TO AWS IOT CORE.**



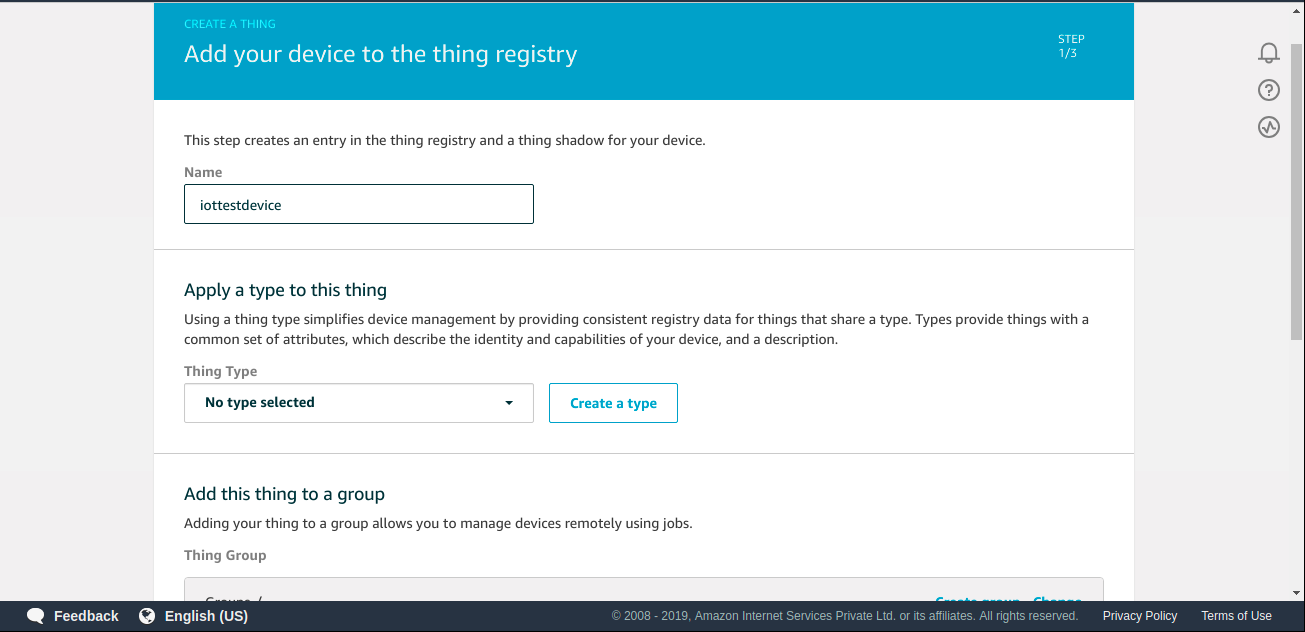
**STEP 3: GO TO MANAGE -> THING AND REGISTER A THING.**



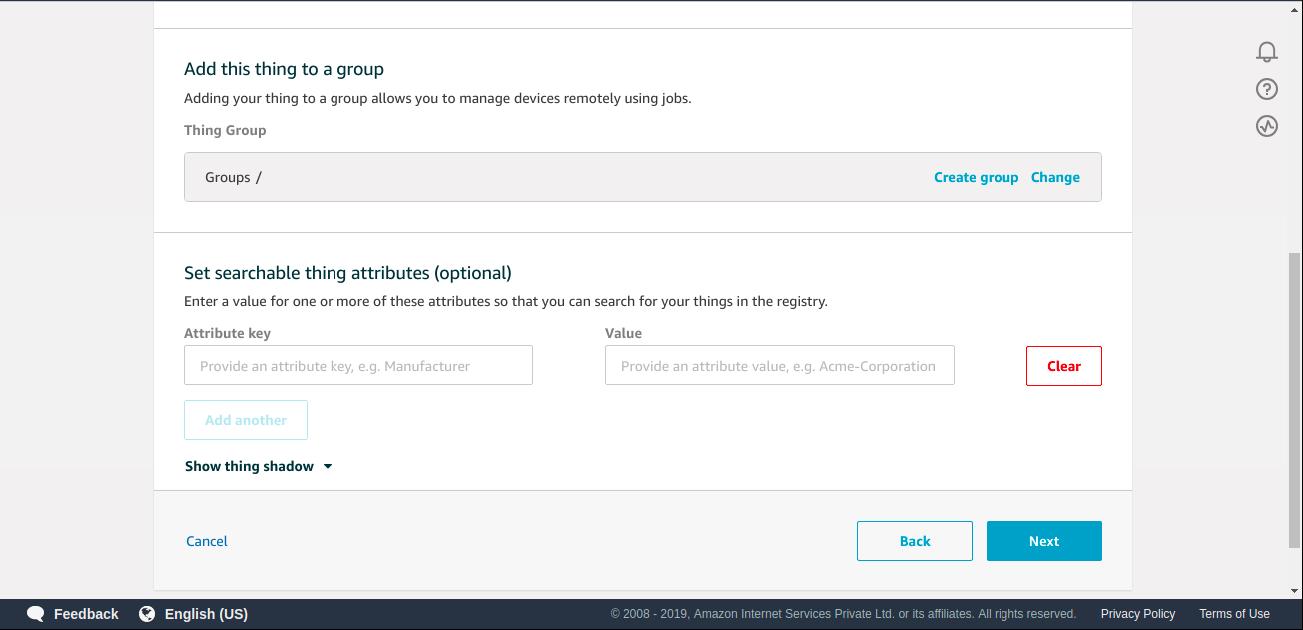
**STEP 4: CREATE A SINGLE THING.**



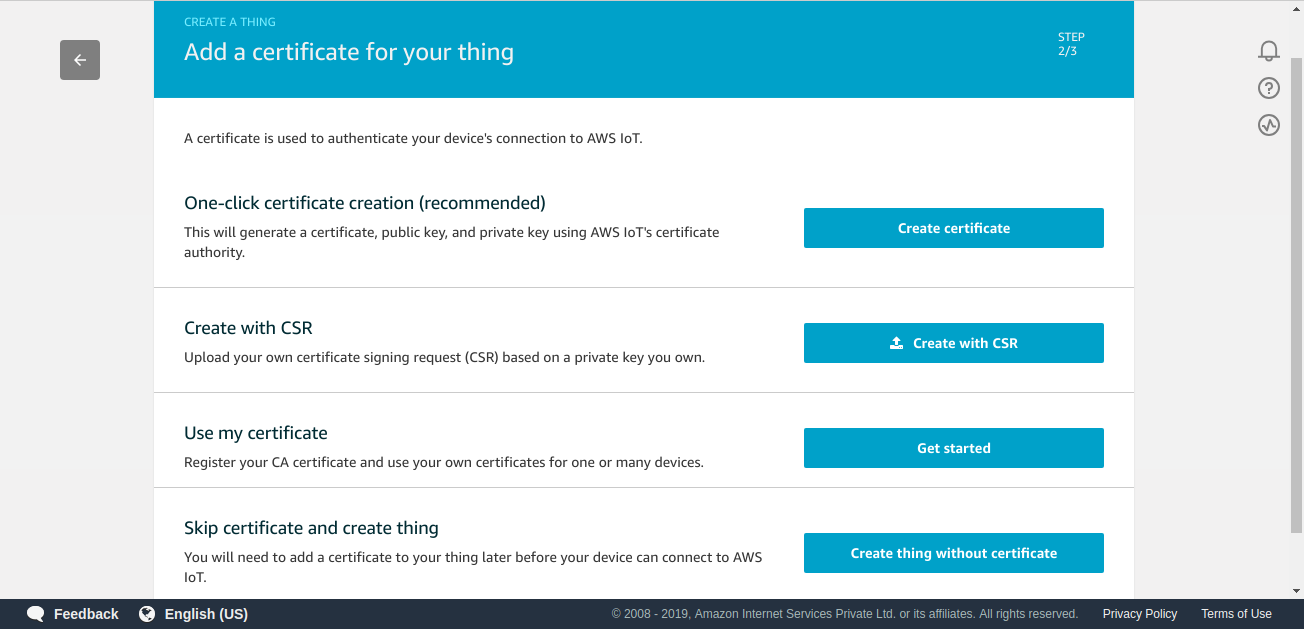
**STEP 5: GIVE THE NAME OF THING TO BE CREATED.**

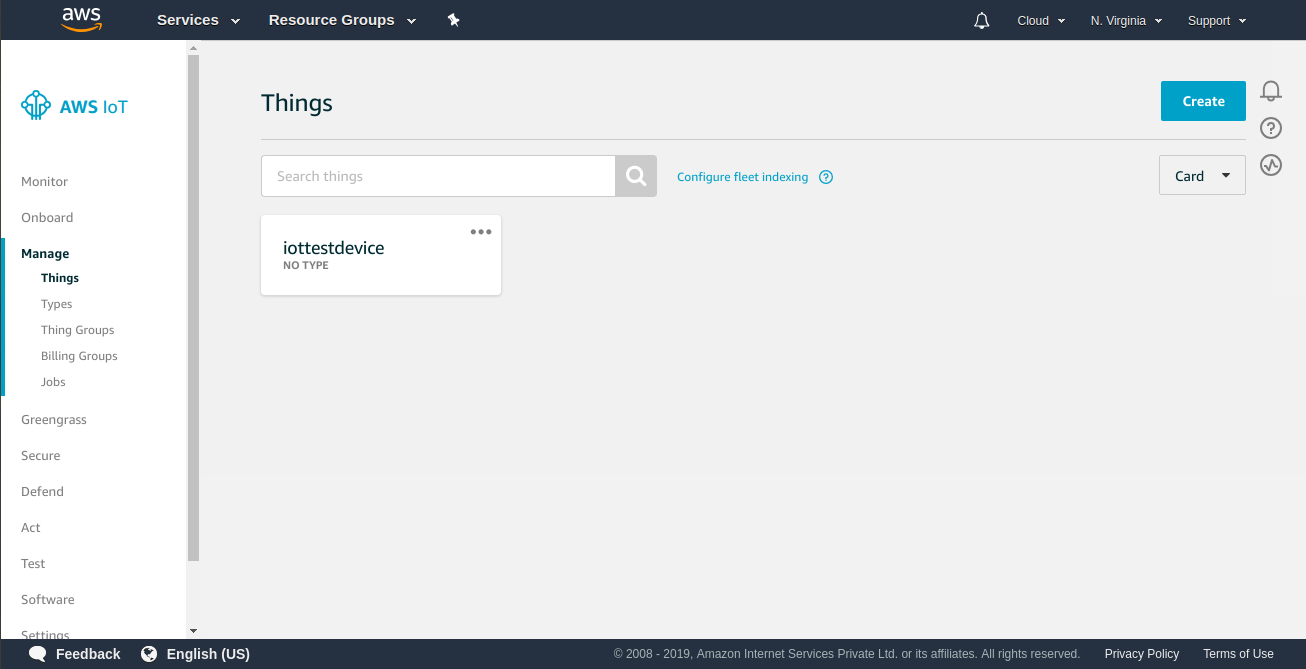


**STEP 6: SELECT THE GROUP AND GO TO NEXT.**

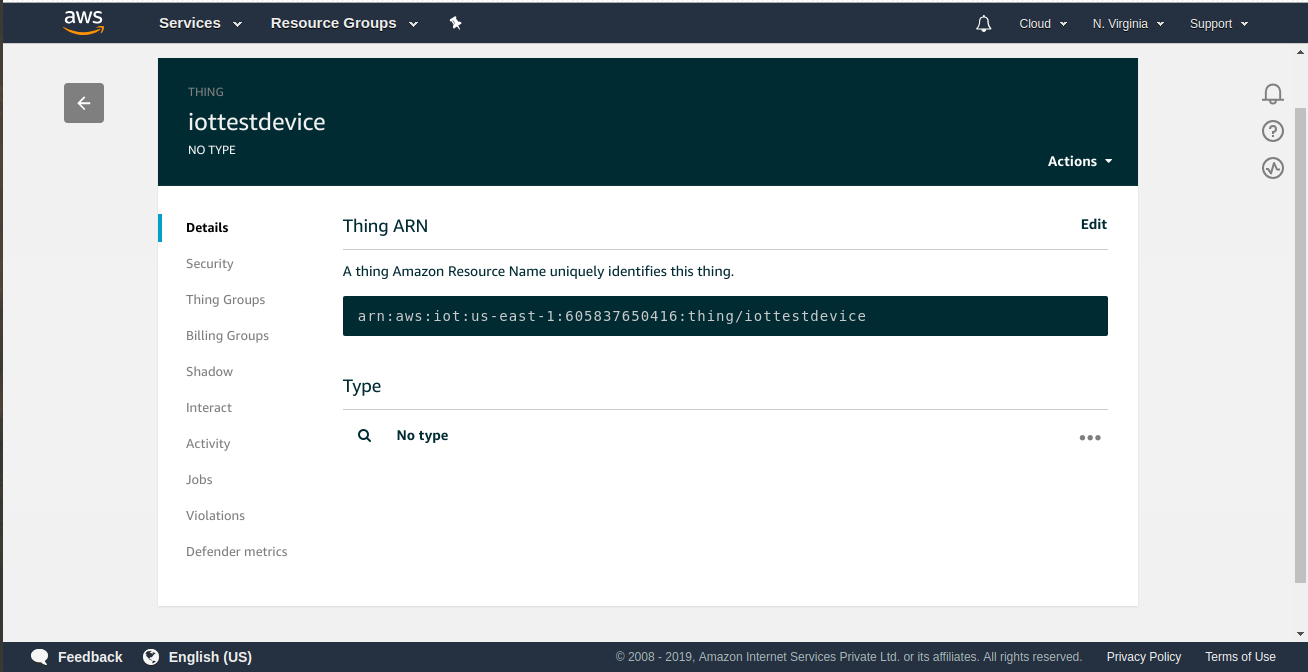


**STEP 7: SELECT CREATE THING WITHOUT SHADOW.**

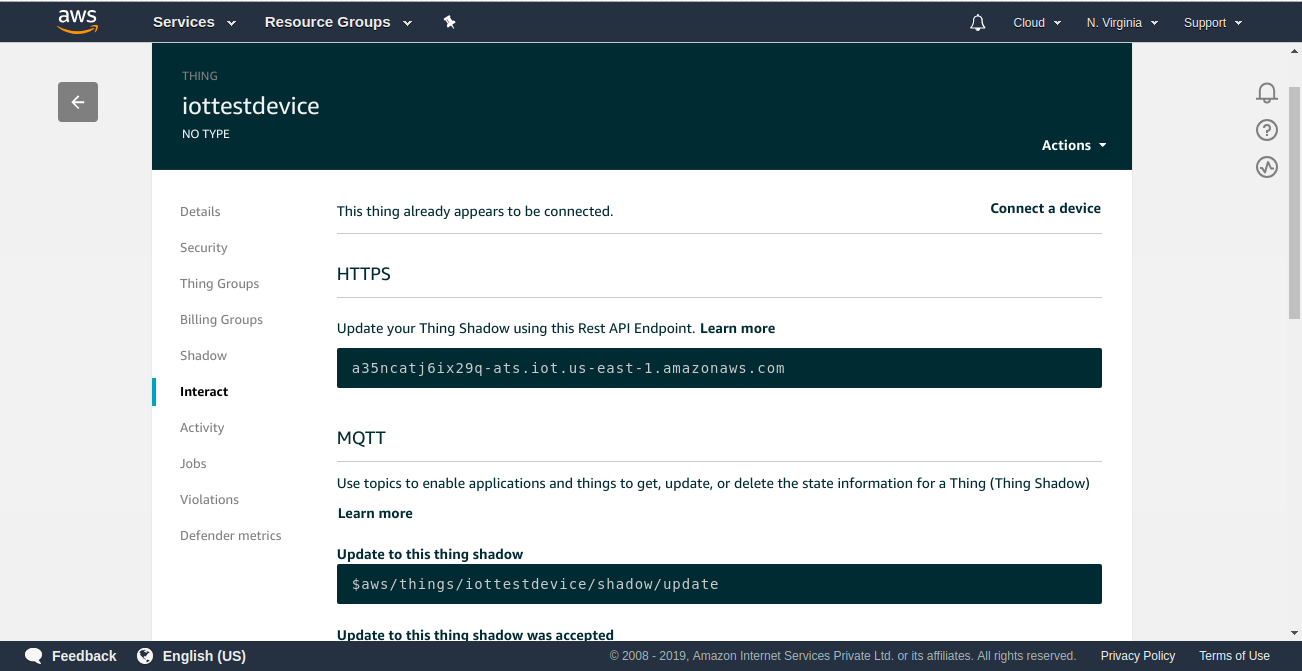


**STEP 8: A THING WILL BE CREATED.**

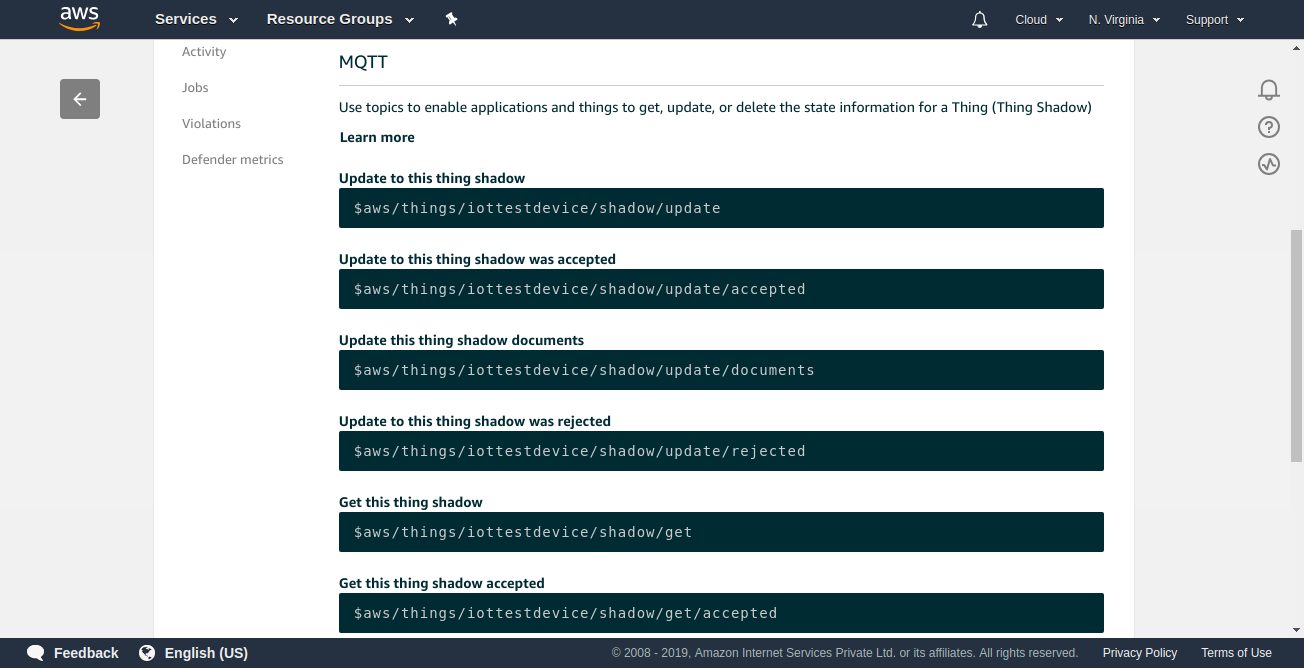
**STEP 9: DETAILS OF THE THING.**

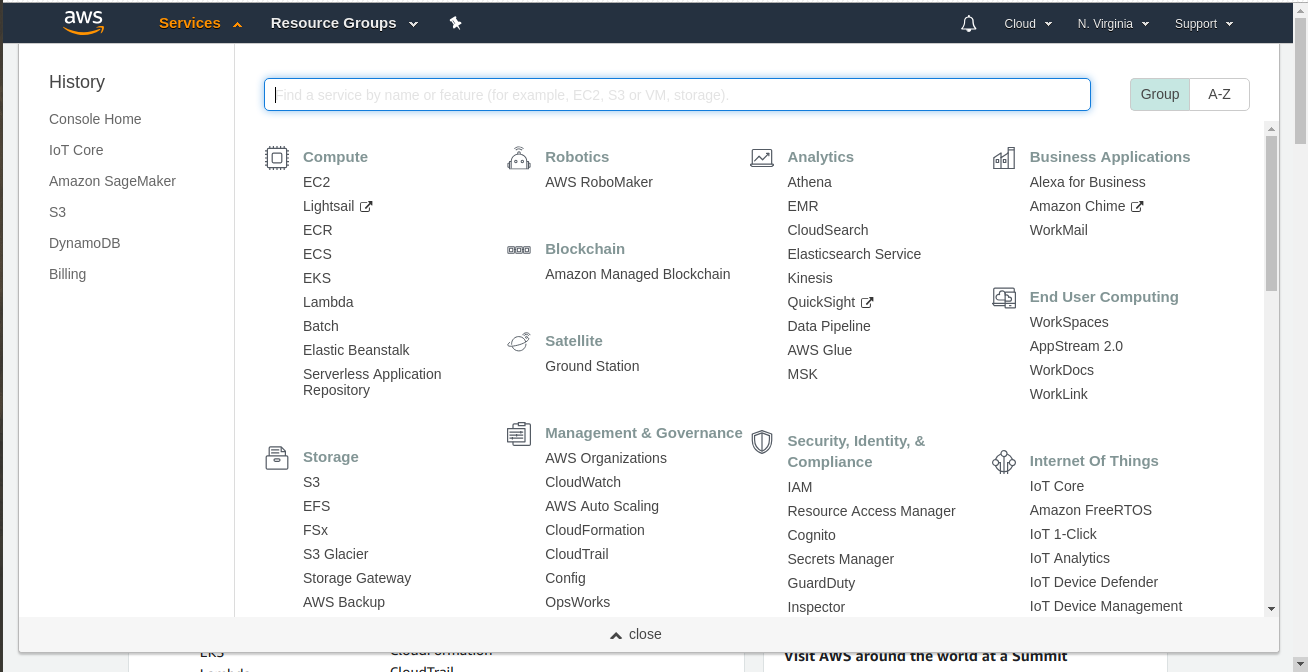


**STEP 10: GO TO INTERACT FOR FURTHER DETAILS.**

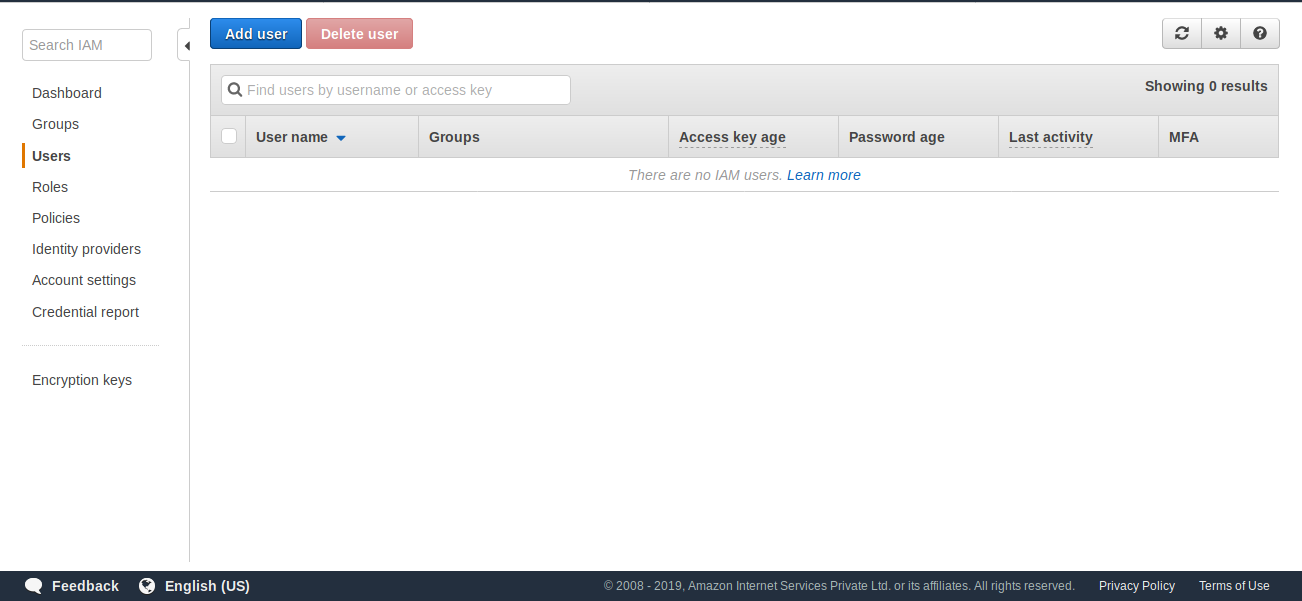


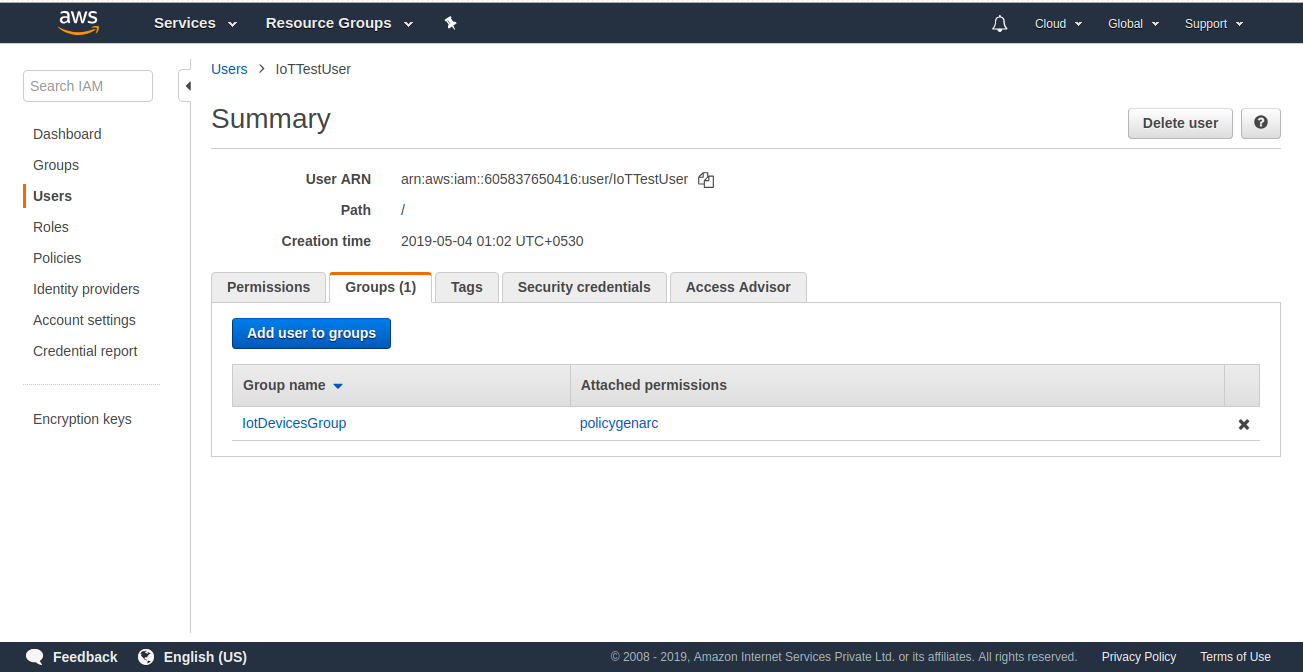
**STEP 11: ALL DETAILS OF SHADOW ARE PRESENT.**



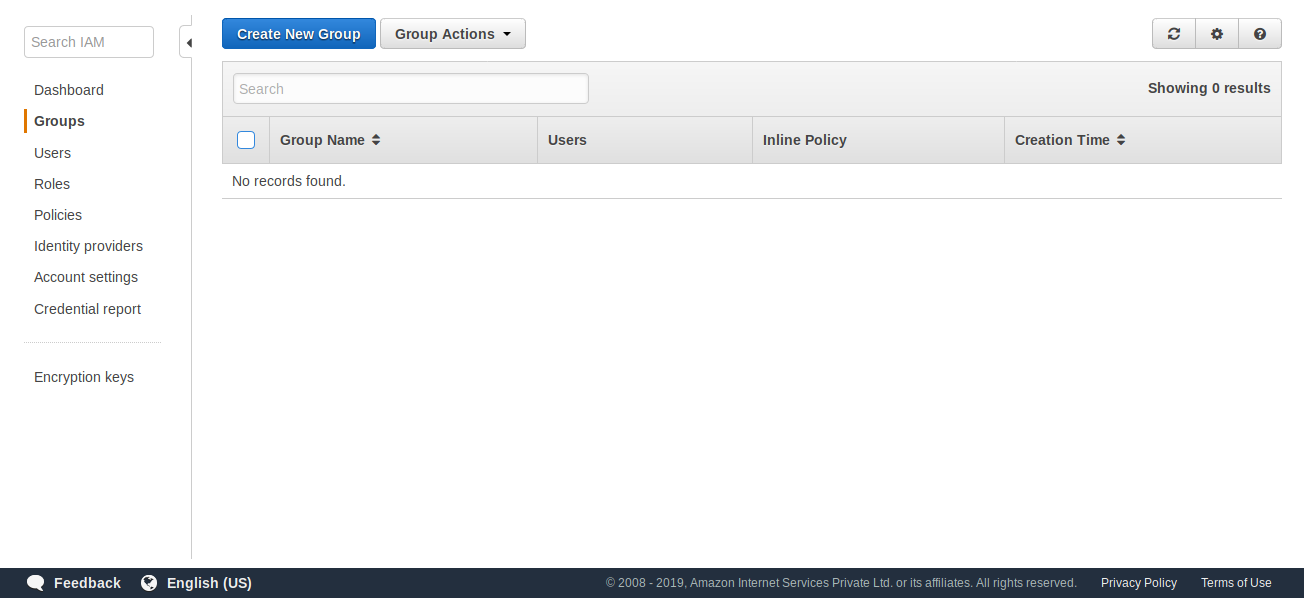
**STEP 12:GO TO SERVICES AND SELECT IAM.** 

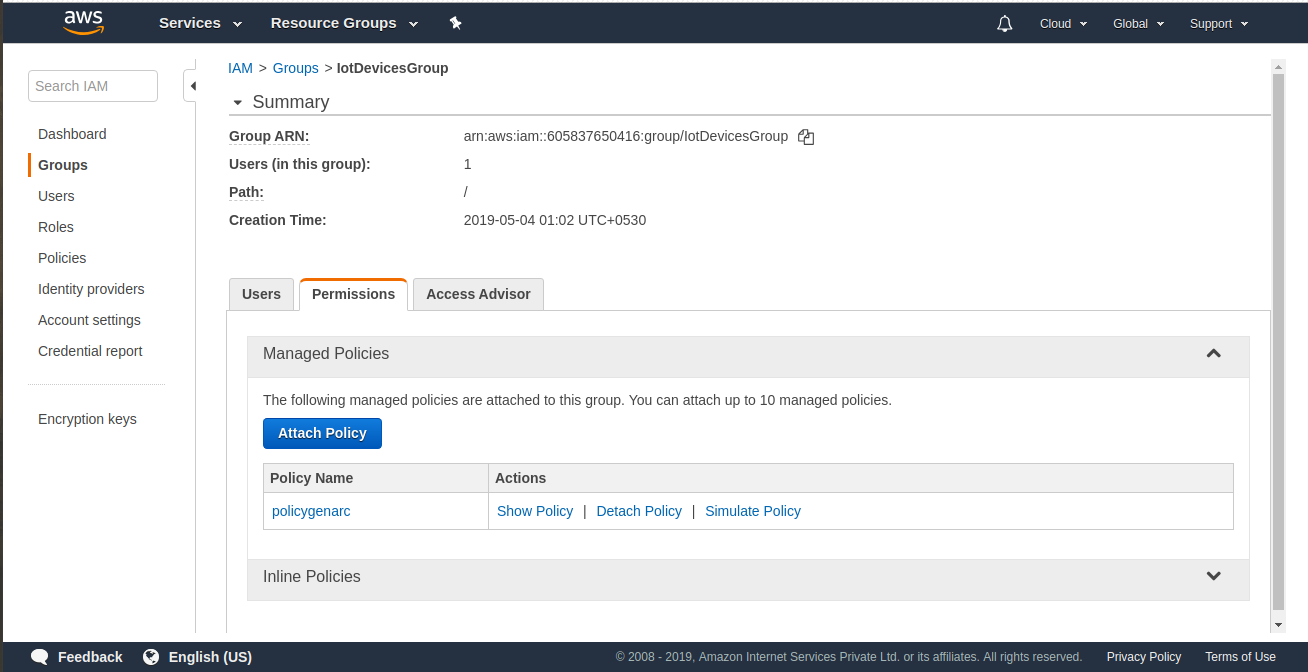
**STEP 13:CREATE A IAM USER .**



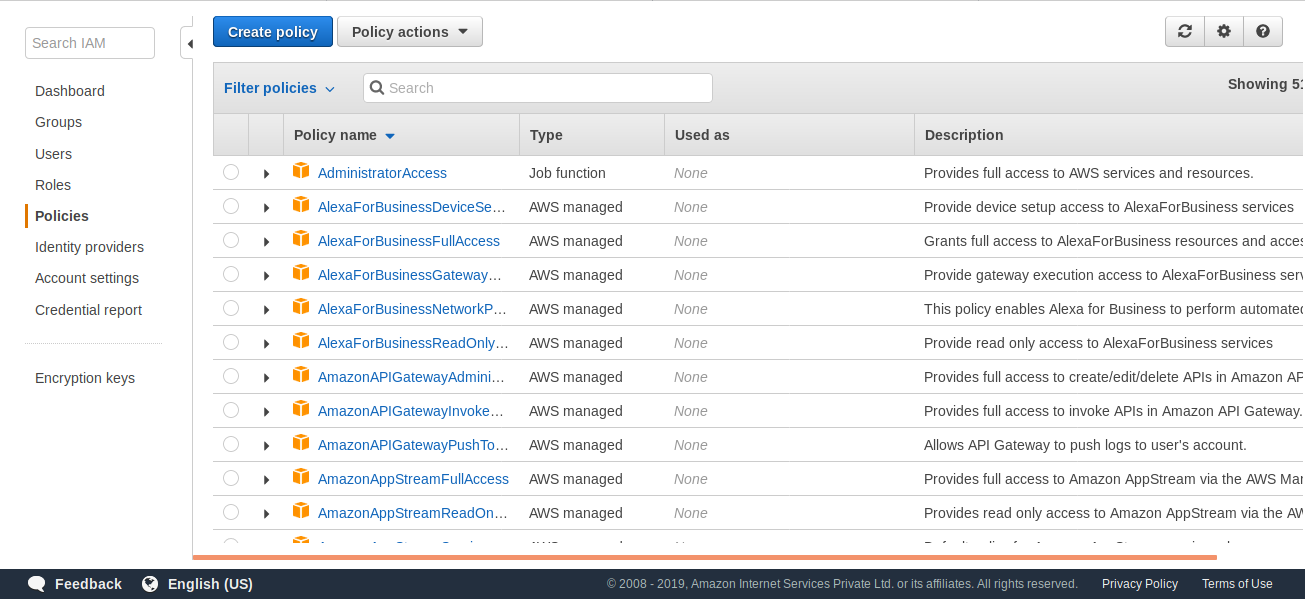
**STEP 14: USER IS CREATED.**

**STEP 15: CREATE IAM GROUP**

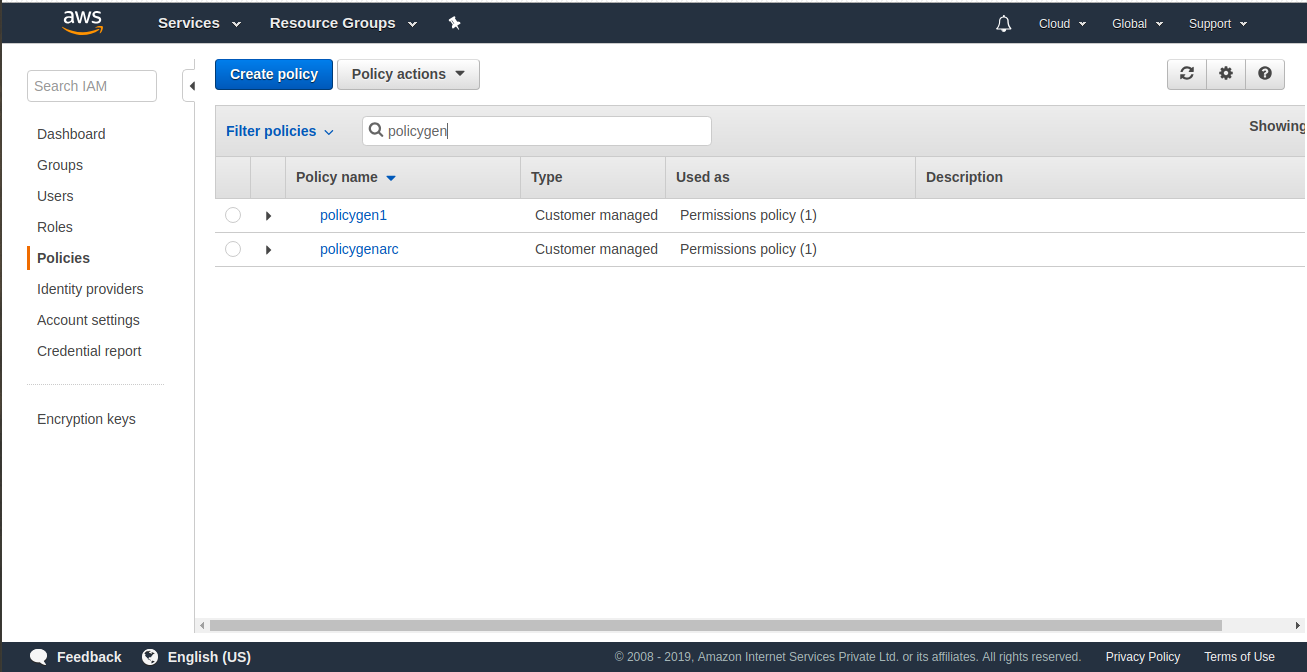


**STEP 16: IAM GROUP IS CREATED.**

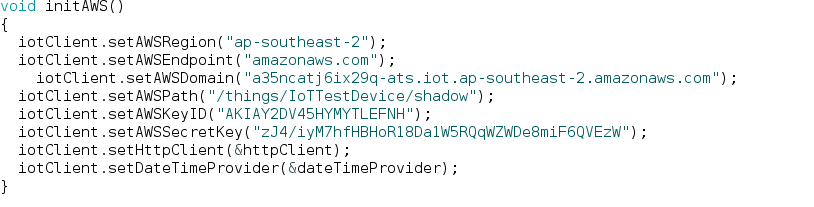
**STEP 17:CREATE IAM POLICY.**



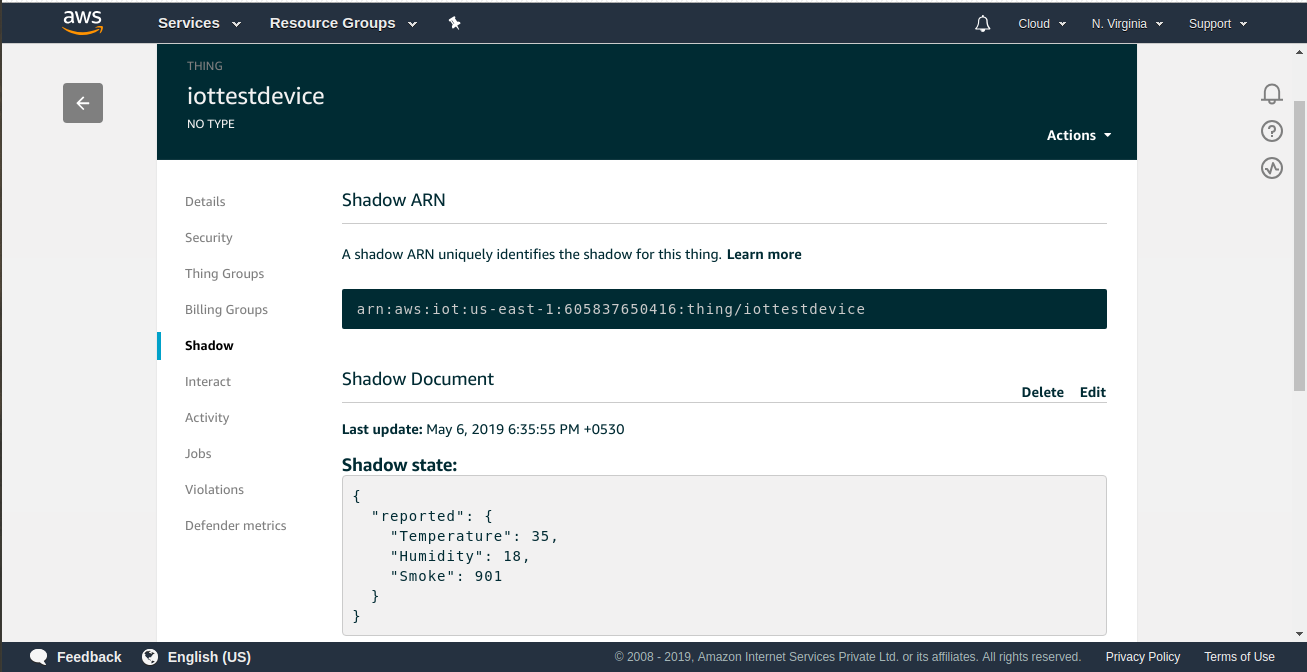
**STEP 18: IAM POLICY IS CREATED.**



**STEP 19: UPDATE THE CODE ACCORDINGLY.**



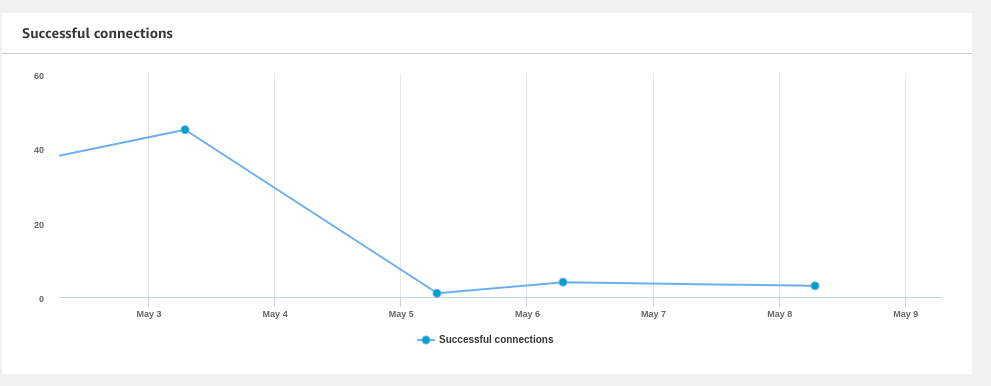
**STEP 20:RUN THE CODE AND MONITOR SHADOW STATE OF IOT CORE.**

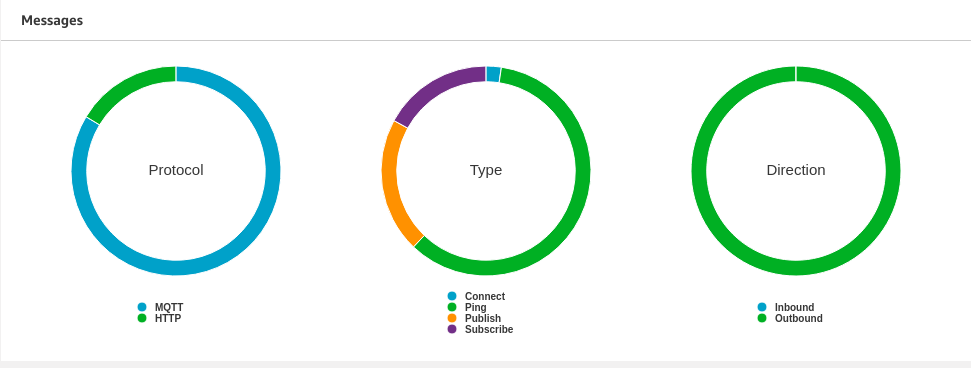


**STEP 21: CHECK THE METADATA FOR FURTHER INFO.**

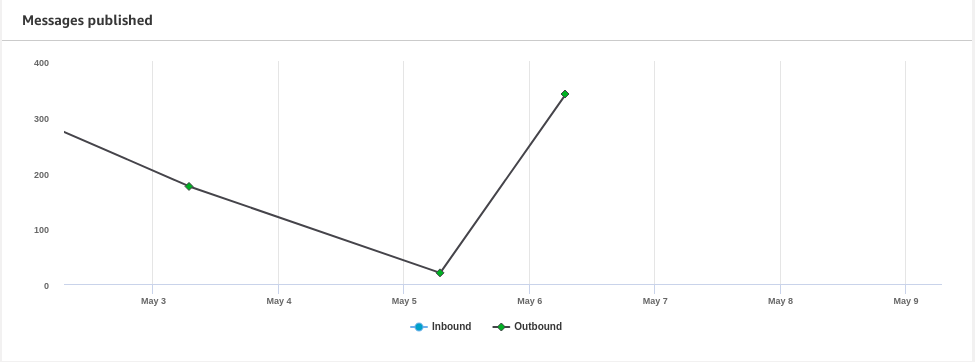


**STEP 22: OUTPUT GRAPH**

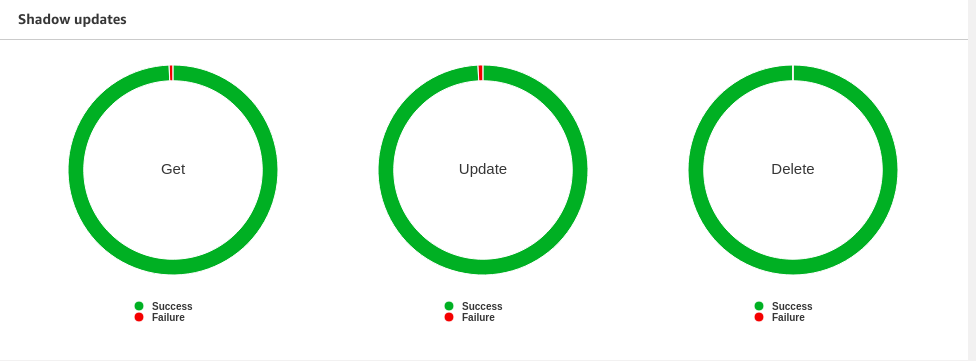


**STEP 23:OUTPUT GRAPH.**

**STEP 24:OUTPUT GRAPH FOR INBOUND AND OUTBOUND.**

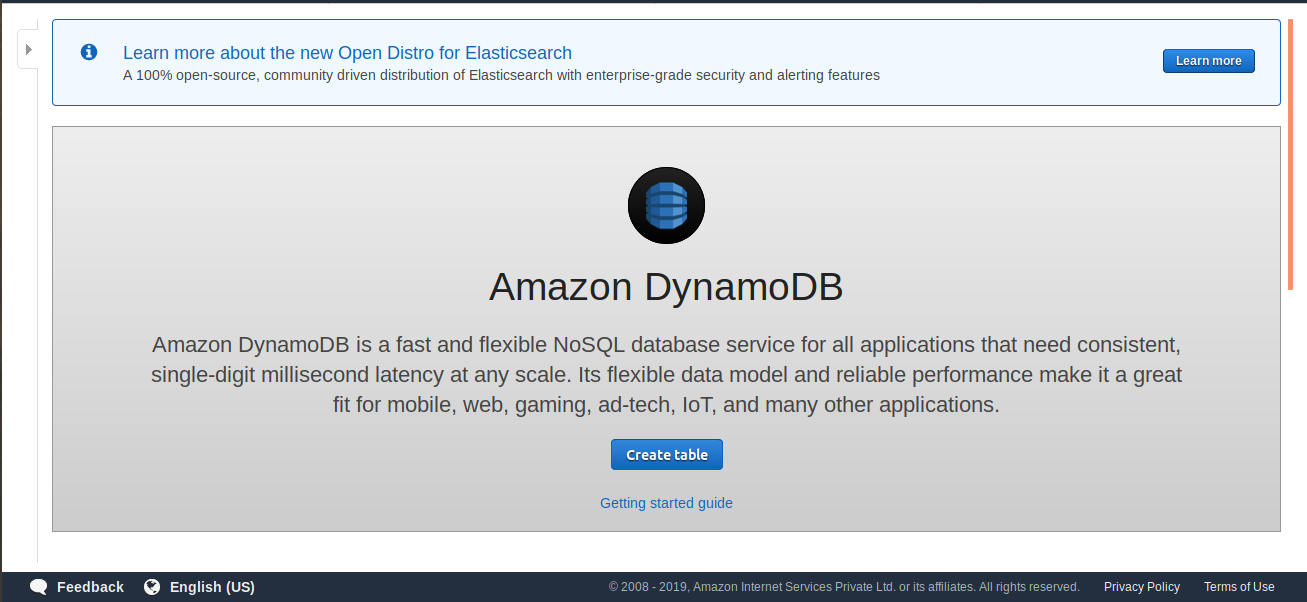


**STEP 25: OUTPUT GRAPH FOR SUCCESS AND FALIURE .**

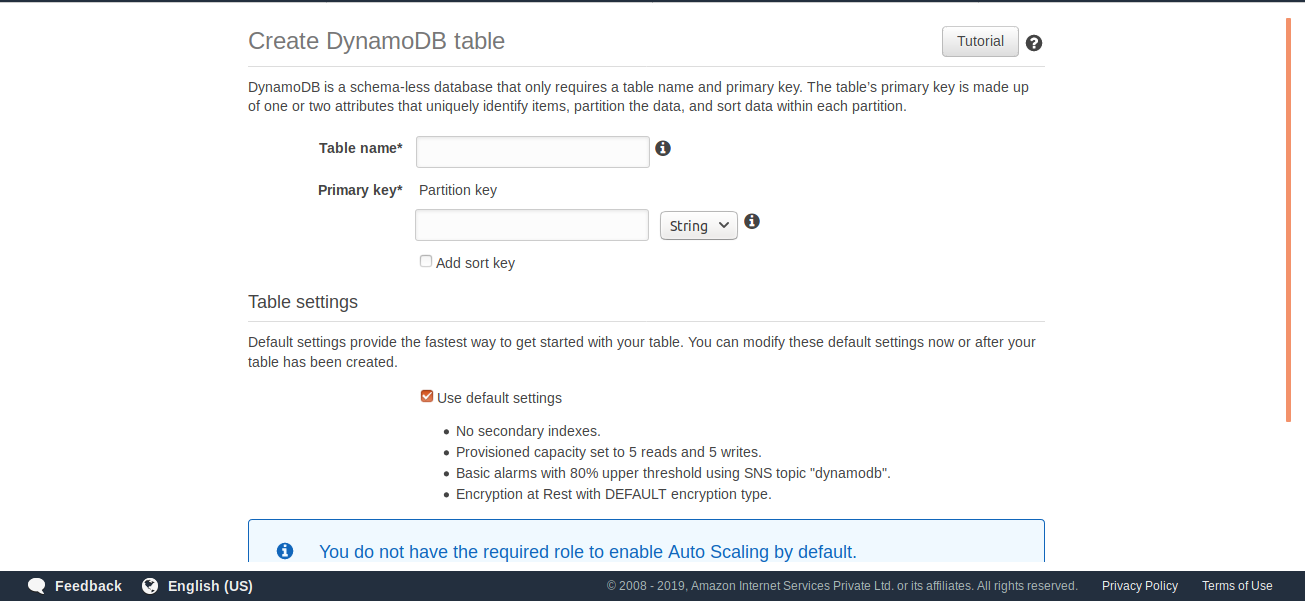


***GOAL 2: SENDING DATA FROM AWS IOT TO DYNMODB DATABASE.***

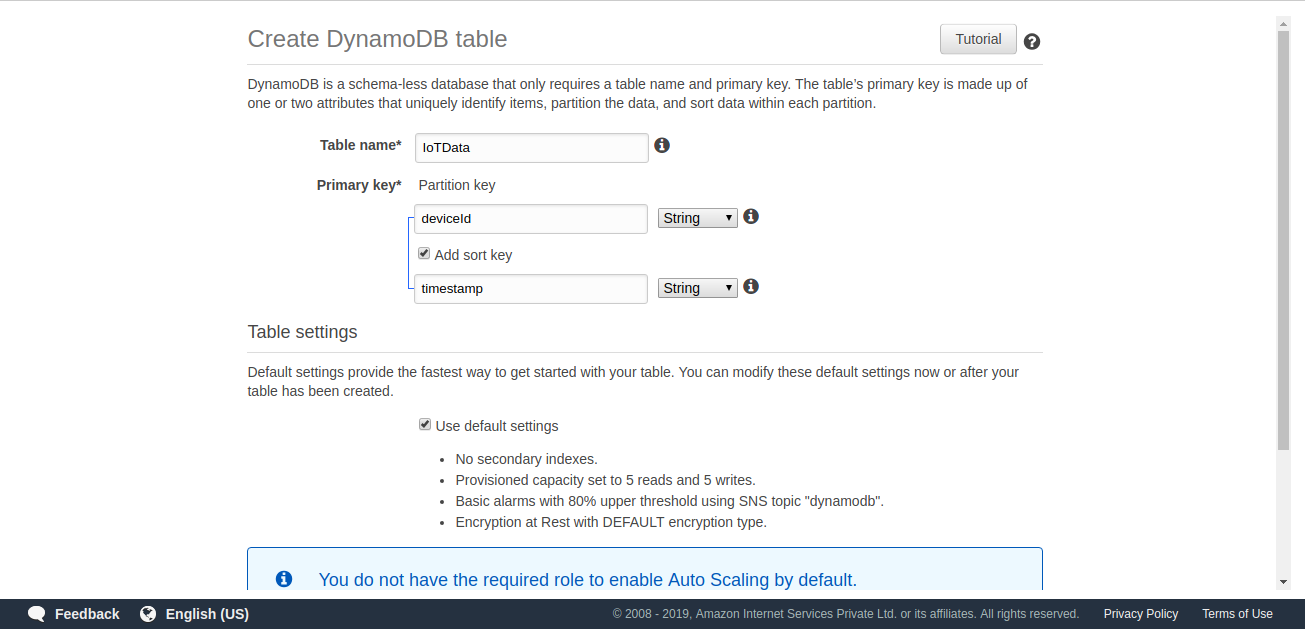
**STEP 26: GO TO SERVICES AND SELECT DYNAMODB DATABASE.**



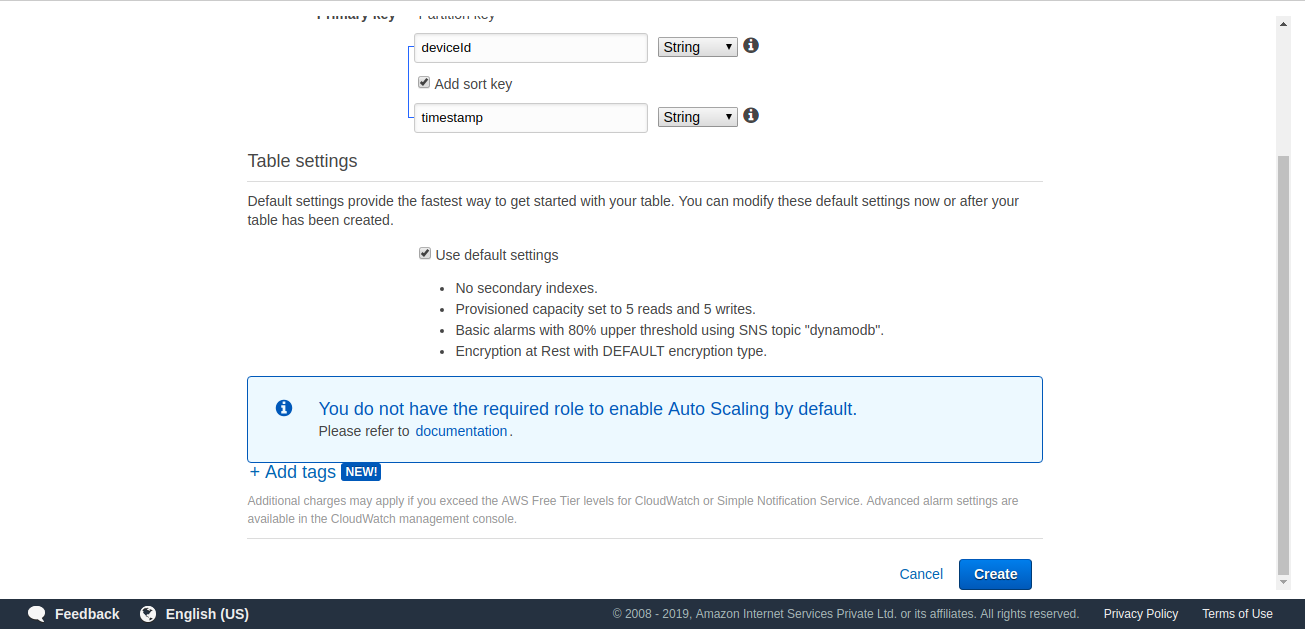
**STEP 27: CREATE A TABLE.**



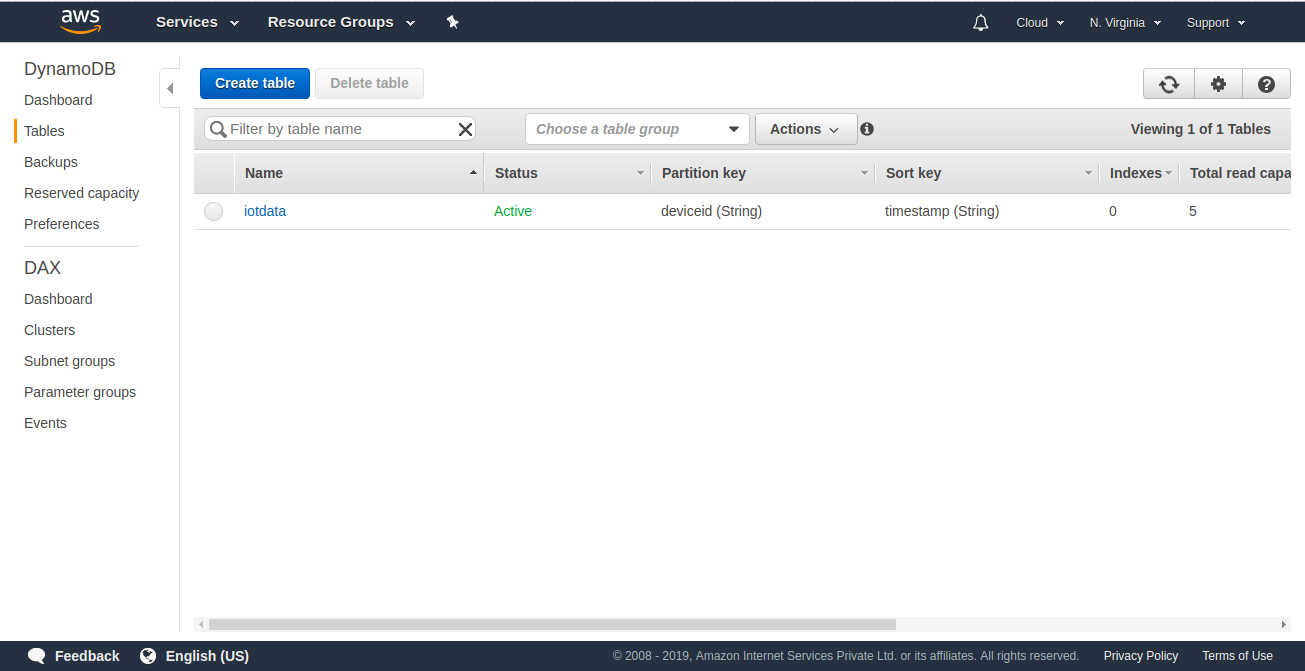
**STEP 28:FILL THE DETAILS FOR TABLE.**



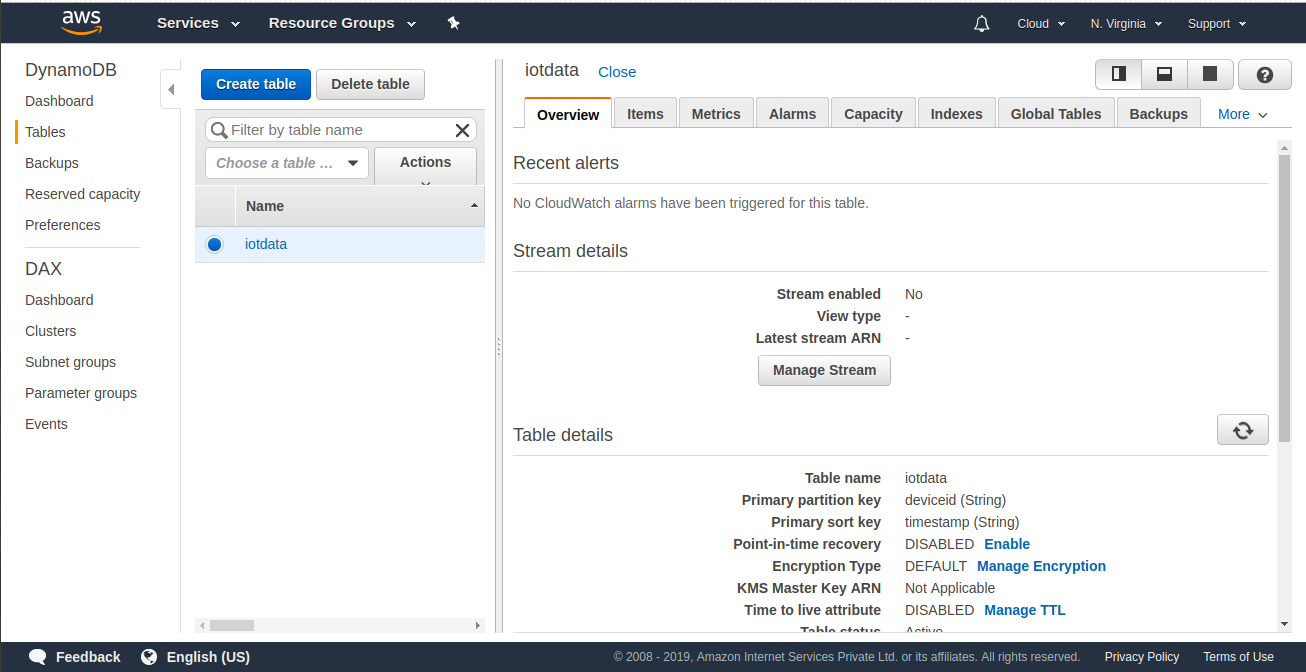
**STEP 29: SELECT CREATE OPTION.**



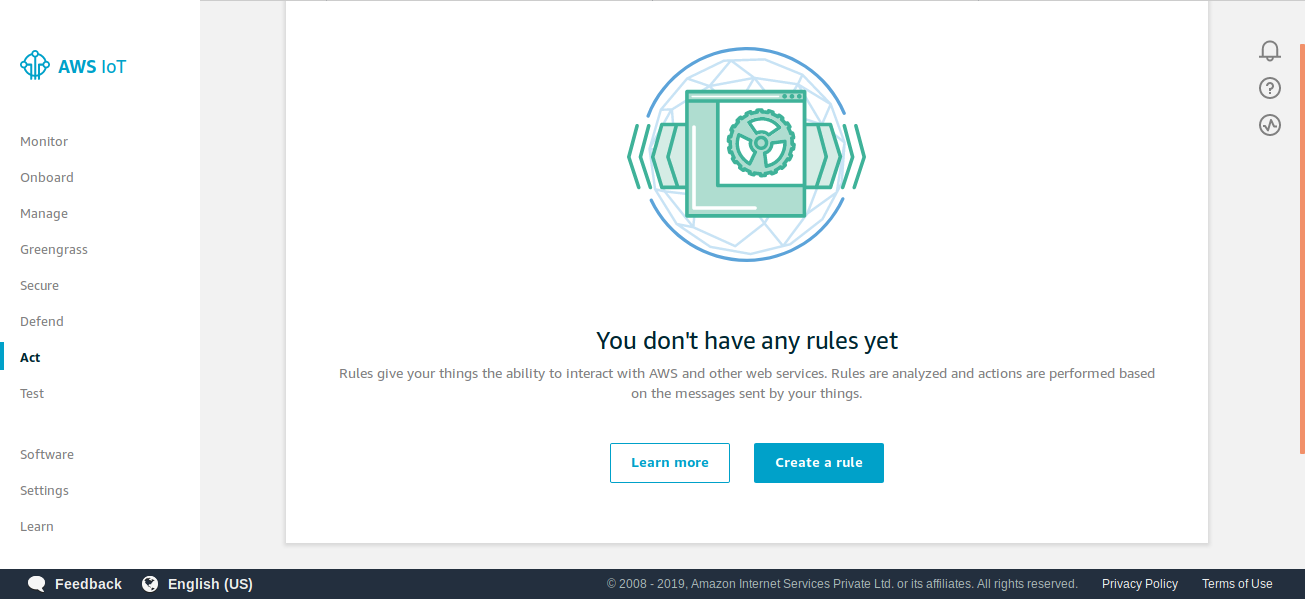
**STEP 30:TABLE IS CREATED.**



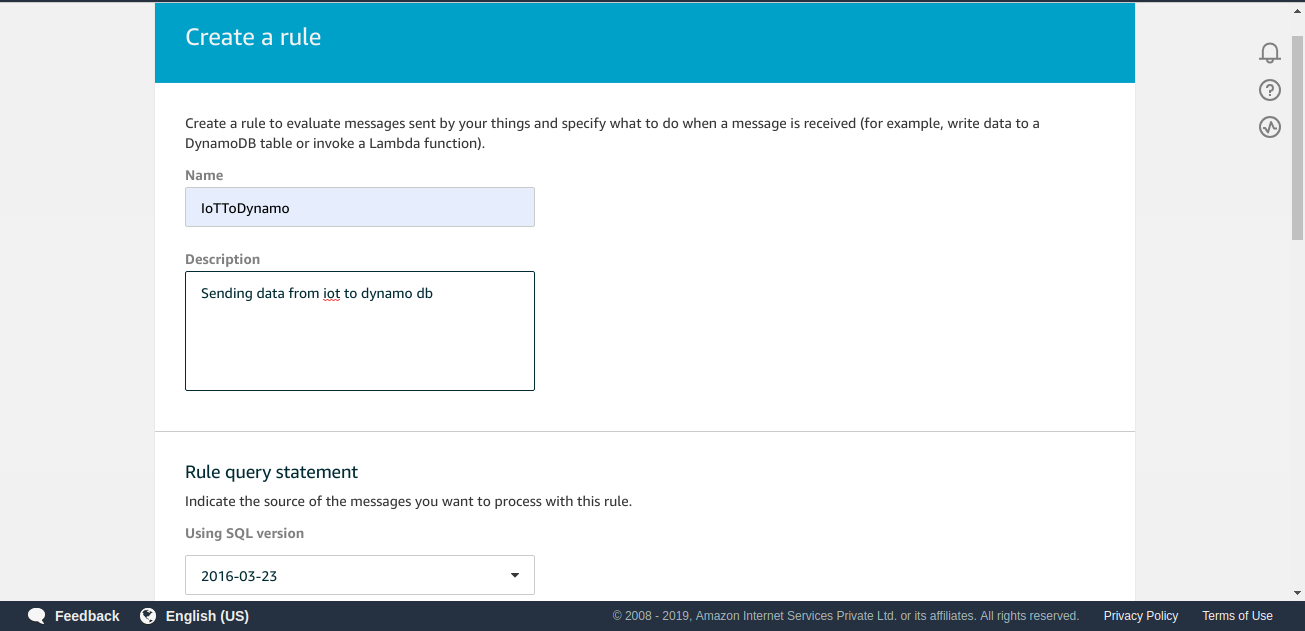
**STEP 31: GO TO OVERVIEW OF TABLE.**



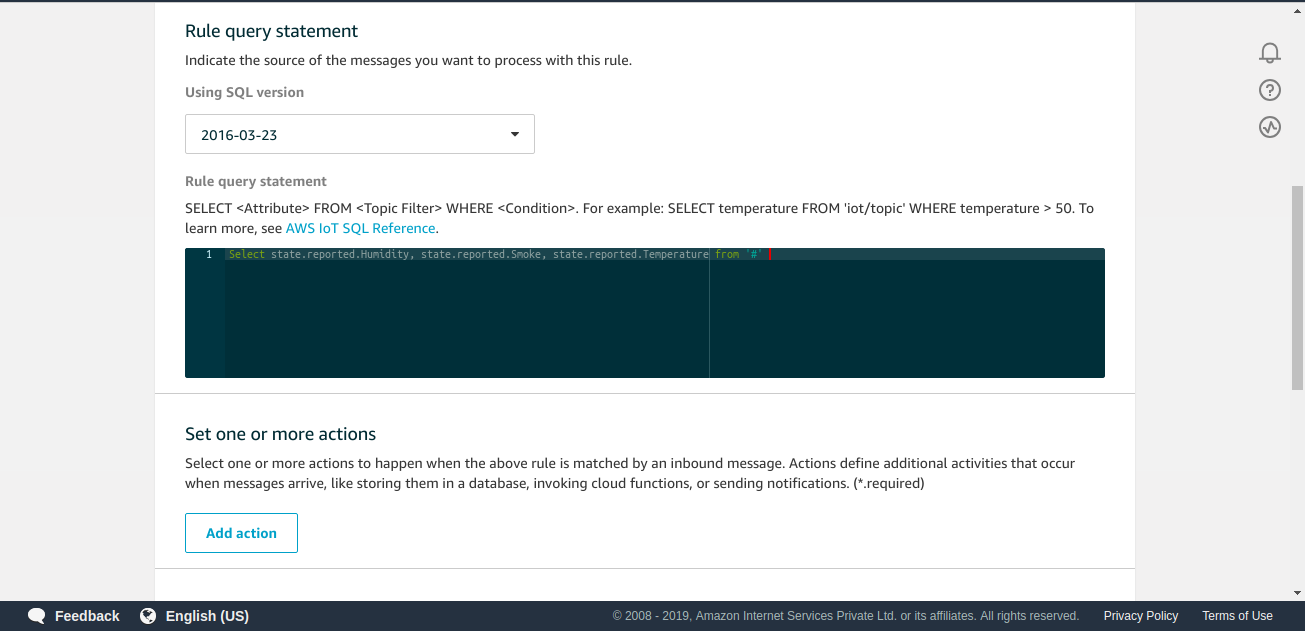
**STEP 32:CREATE AN IOT RULE IN IOT SECTION.**



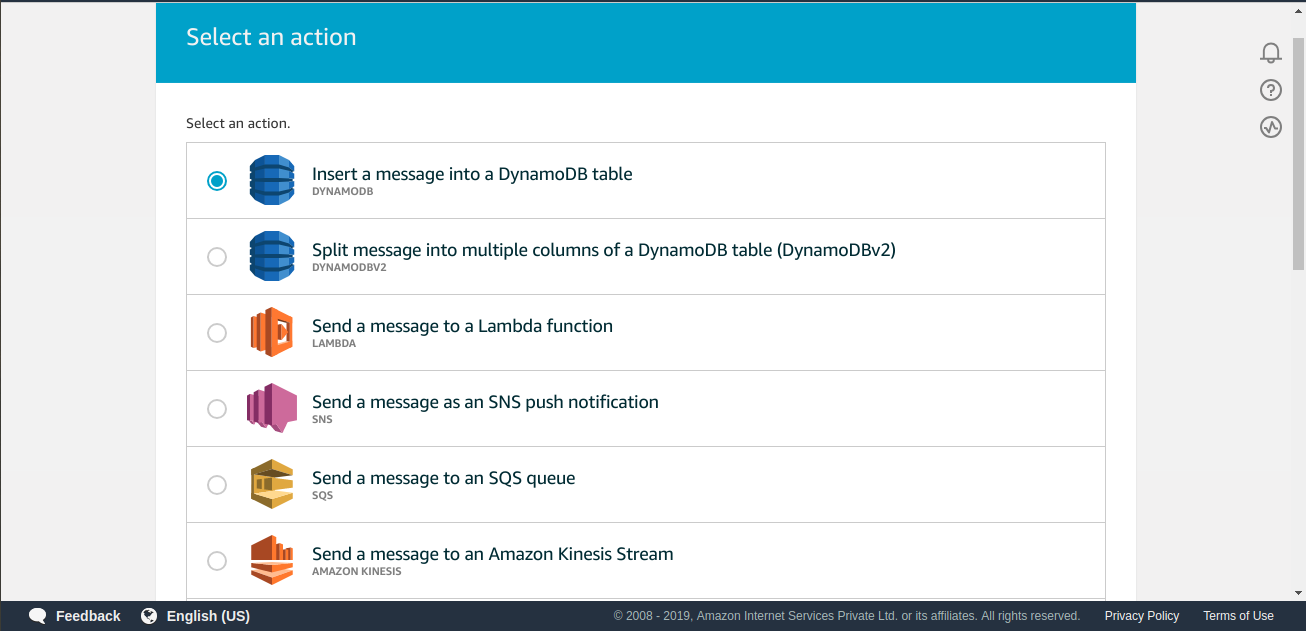
**STEP 33:GIVE NAME AND DESCRIPTION FOR IOT RULE.**



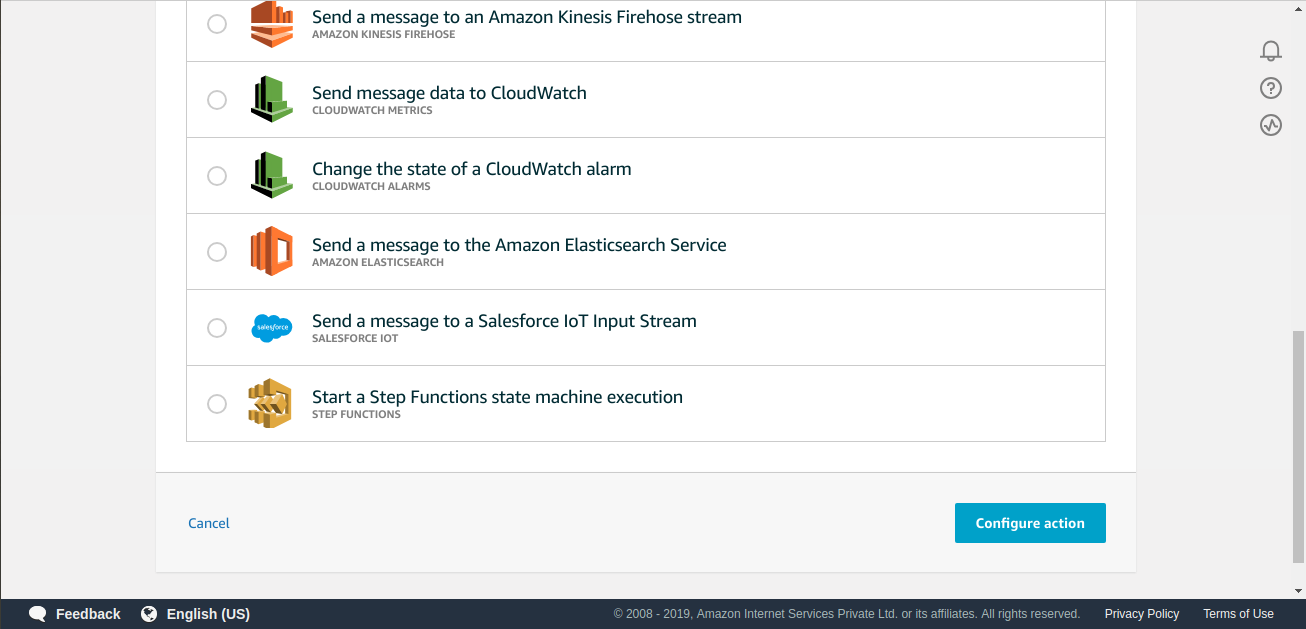
**STEP 34: WRITE THE SQL QUERY FOR THE SAME.**



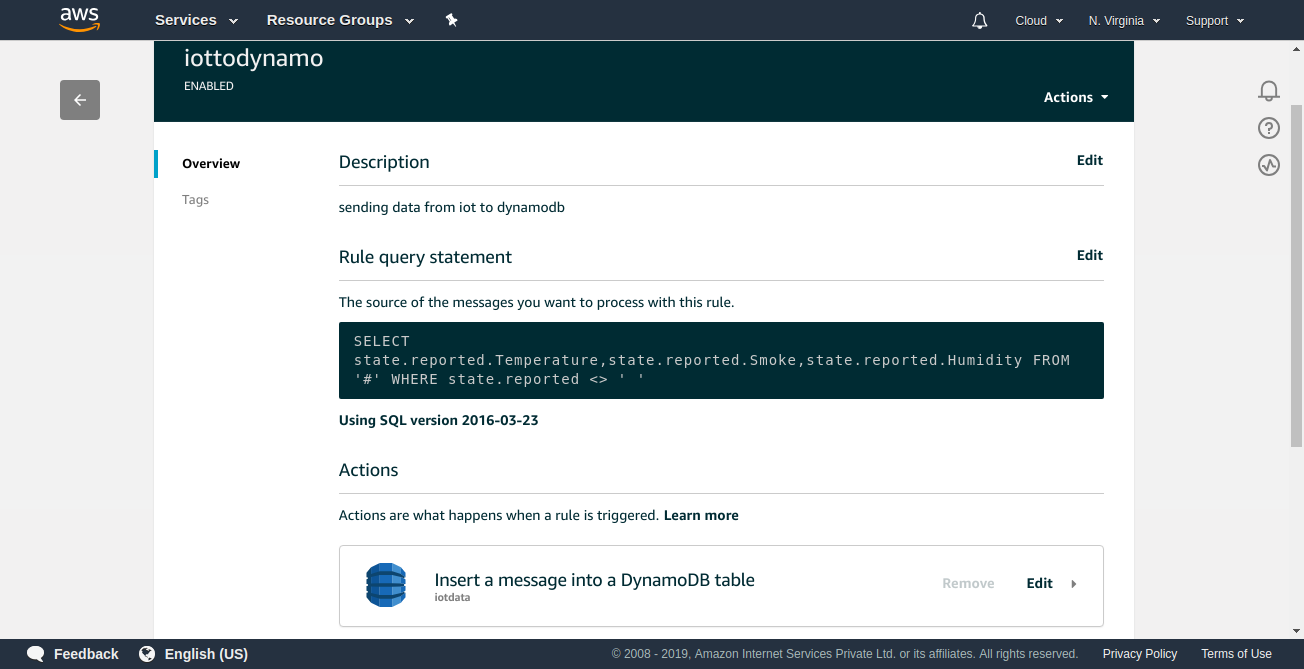
**STEP 35:ADD THE ACTION.**



**STEP 36:CONFIGURE THE ACTION.**



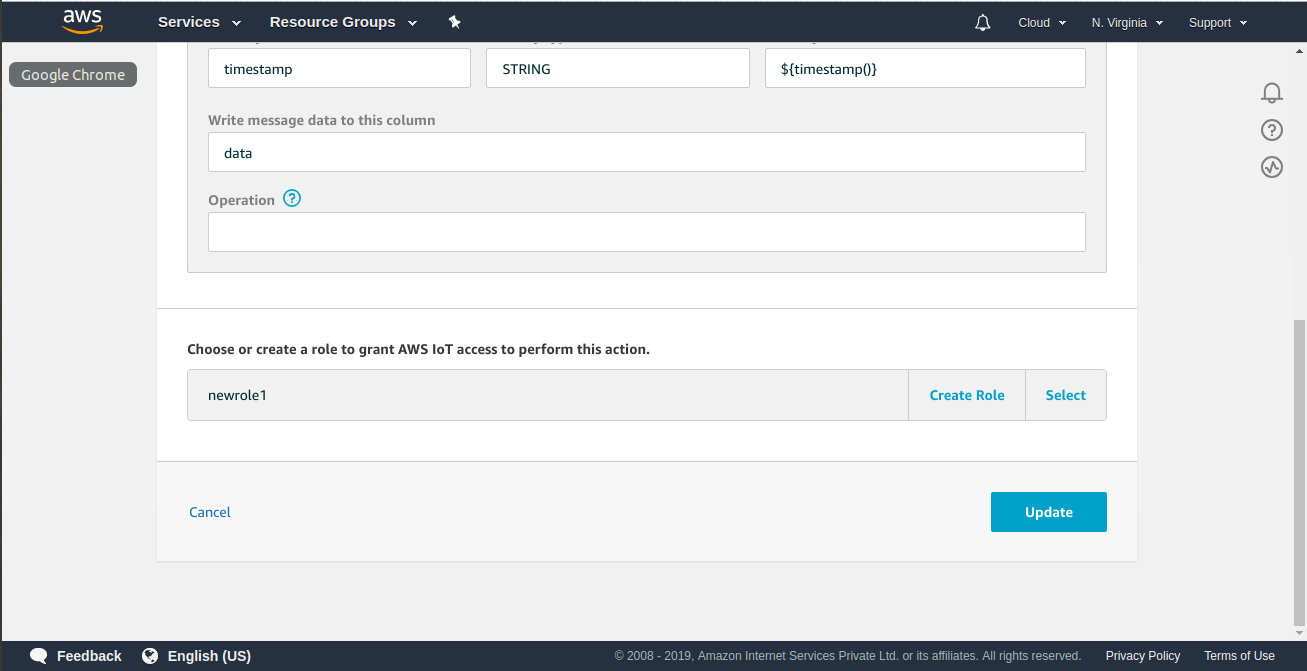
**STEP 37:ACTION HAS BEEN CREATED.**



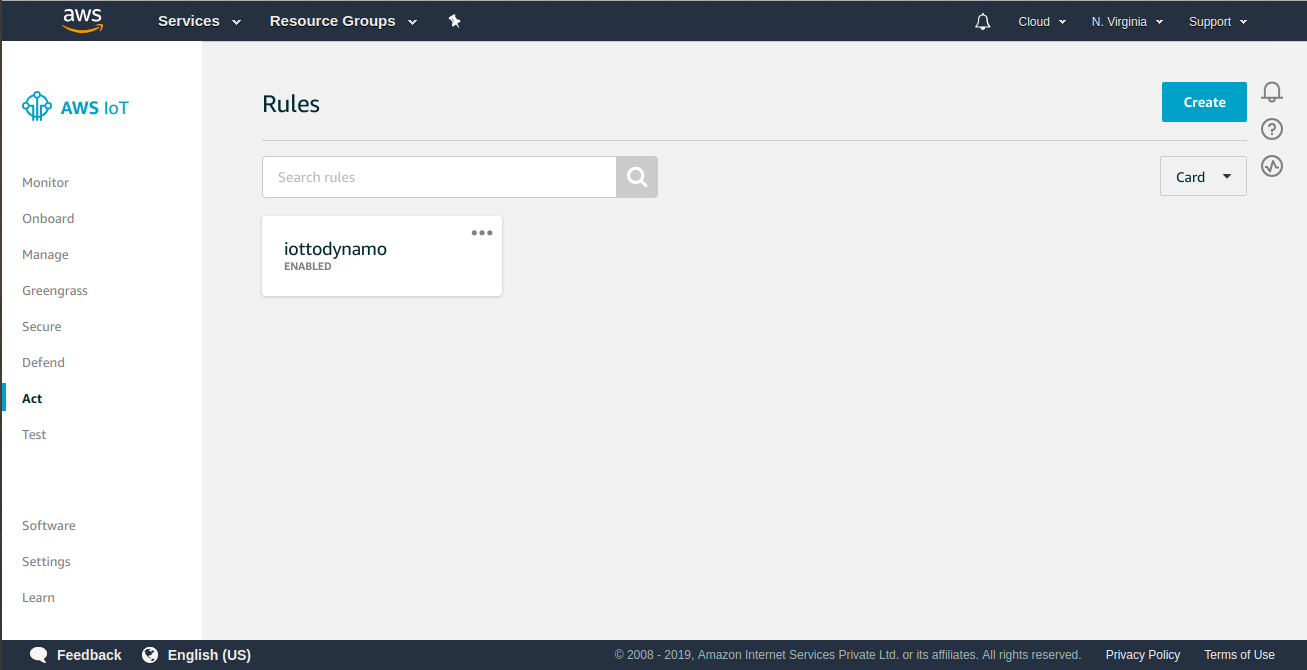
**STEP 38:SELECT TABLE AND GIVE DETAILS.**



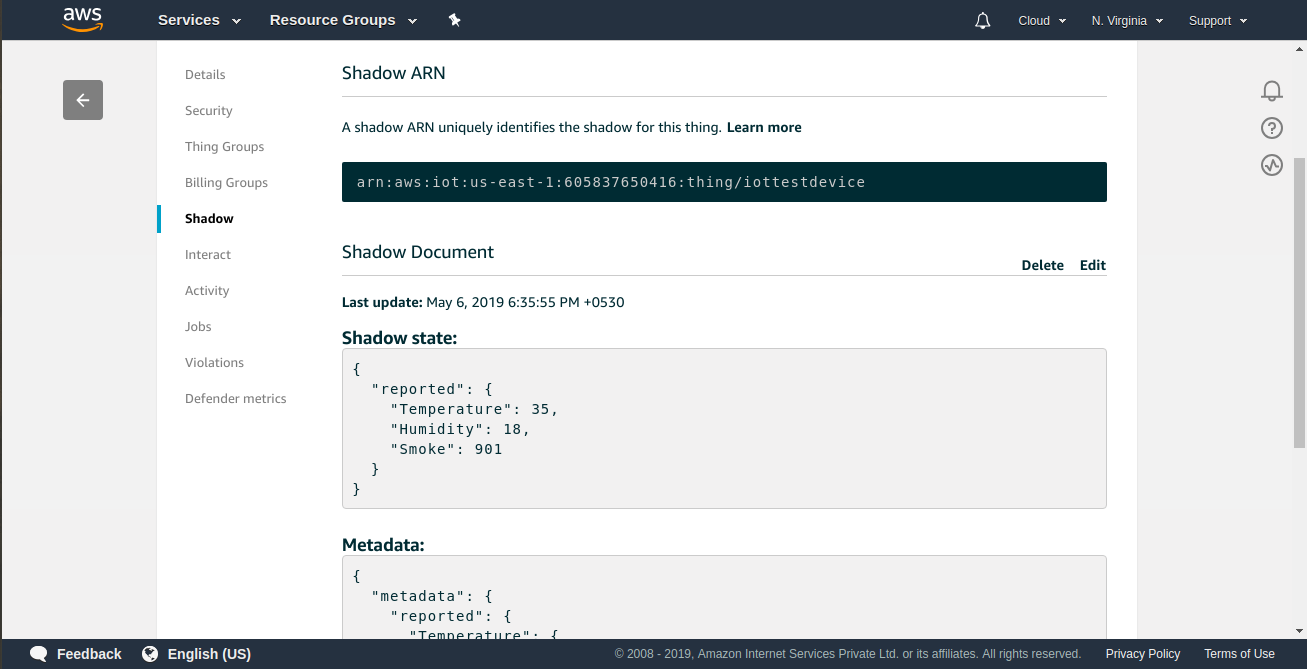
**STEP 39: GO TO UPDATE .**



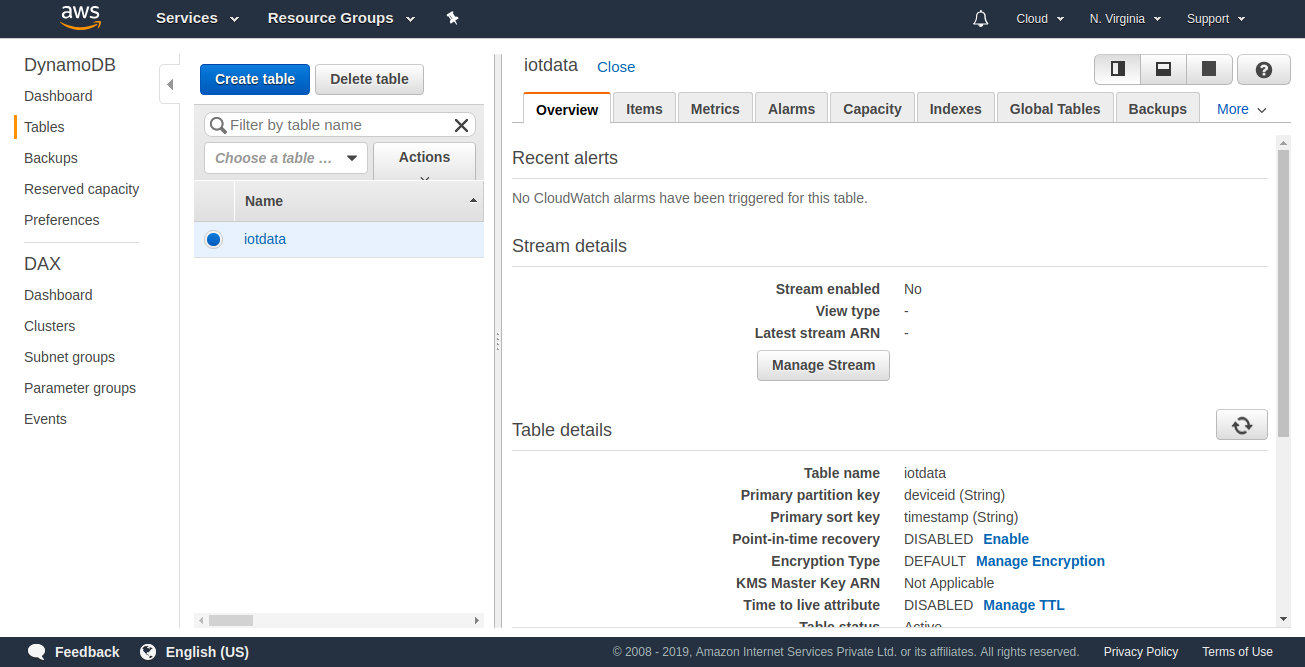
**STEP 40:RULE WILL BE CREATED.**



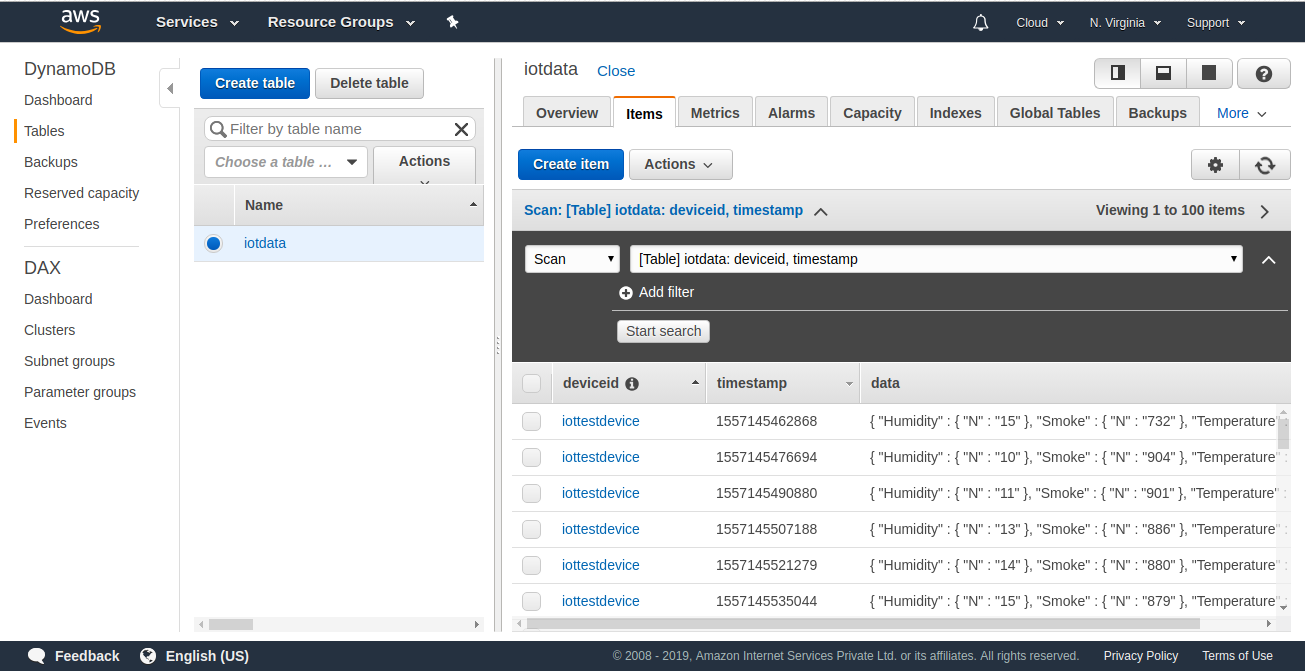
**STEP 41:LOAD THE ARDUINO CODE AND CHECK DATA IN SHADOW STATE.**



**STEP 42:GO TO DYNAMODB TABLE.**



**STEP 43:CHECK THE TABLE.**



**STEP 44: DATA IS UPDATED IN TABLE IN JSON FORMAT.**



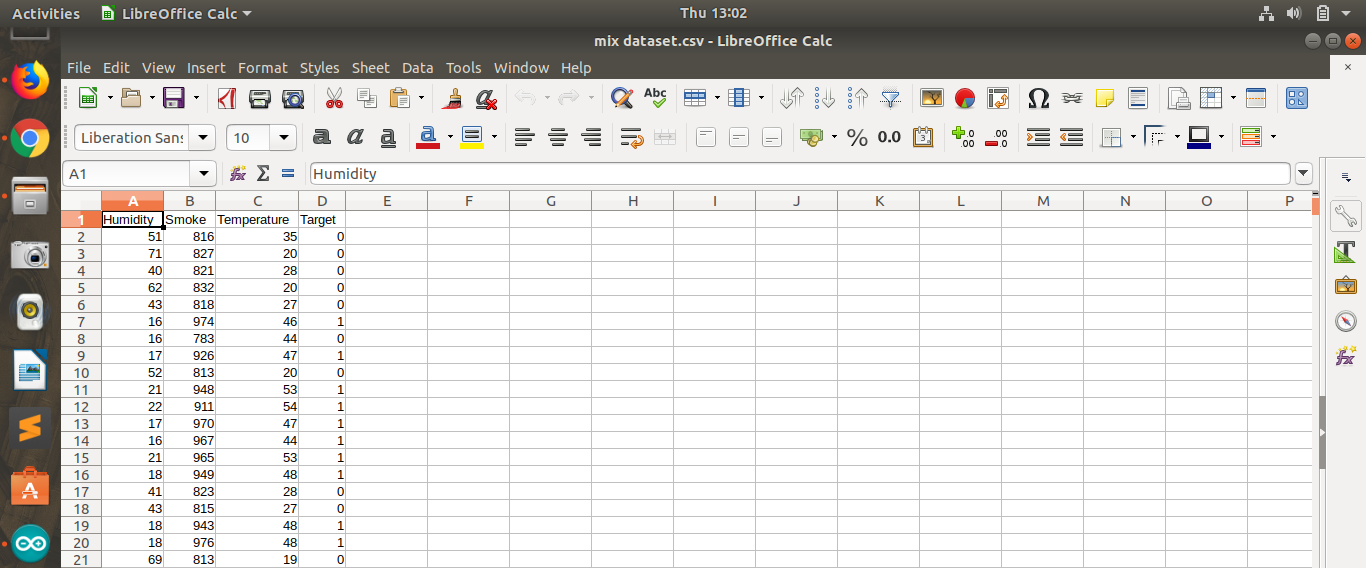
**STEP 45: DATA FORMAT.**

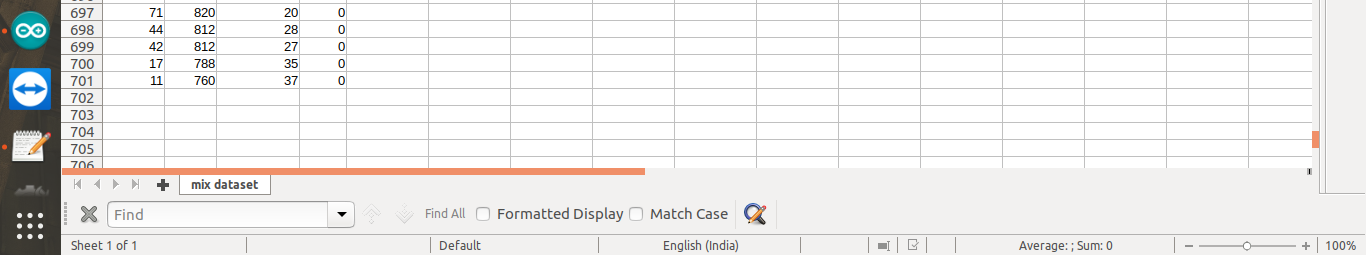


***GOAL 3: MAINTAINING CSV FILE IN***

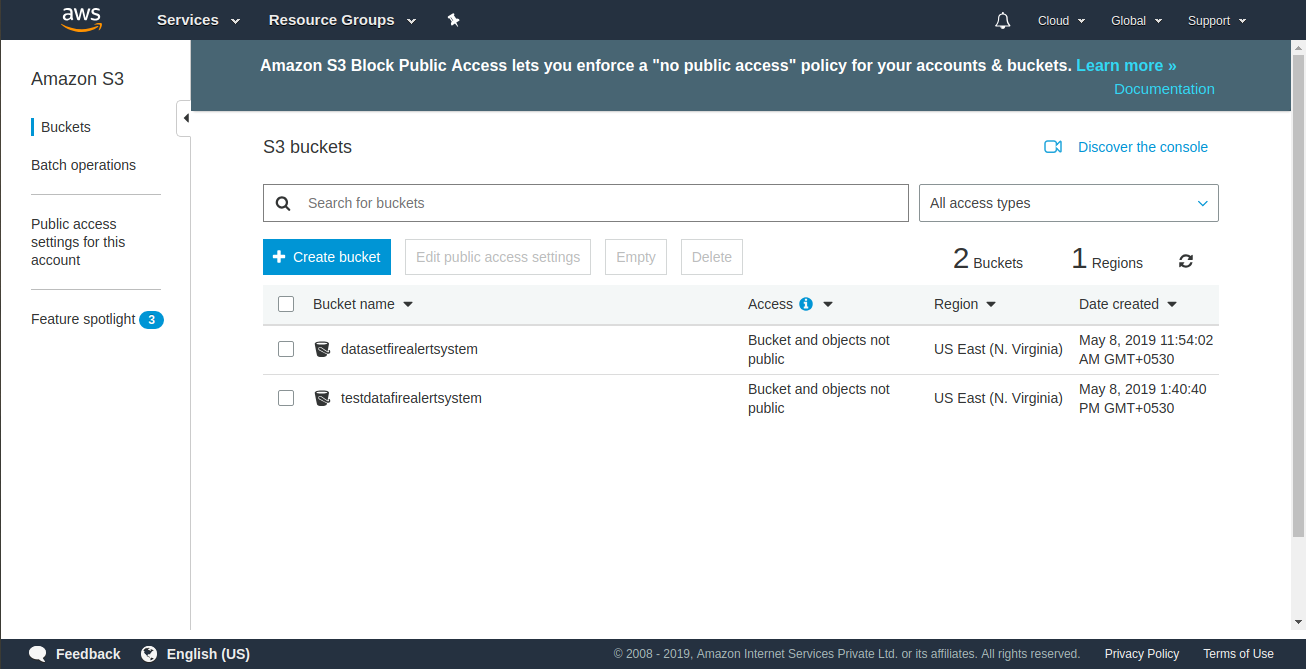
***S3 BUCKET.***

**STEP 46: CSV FILE OF DATASET.**

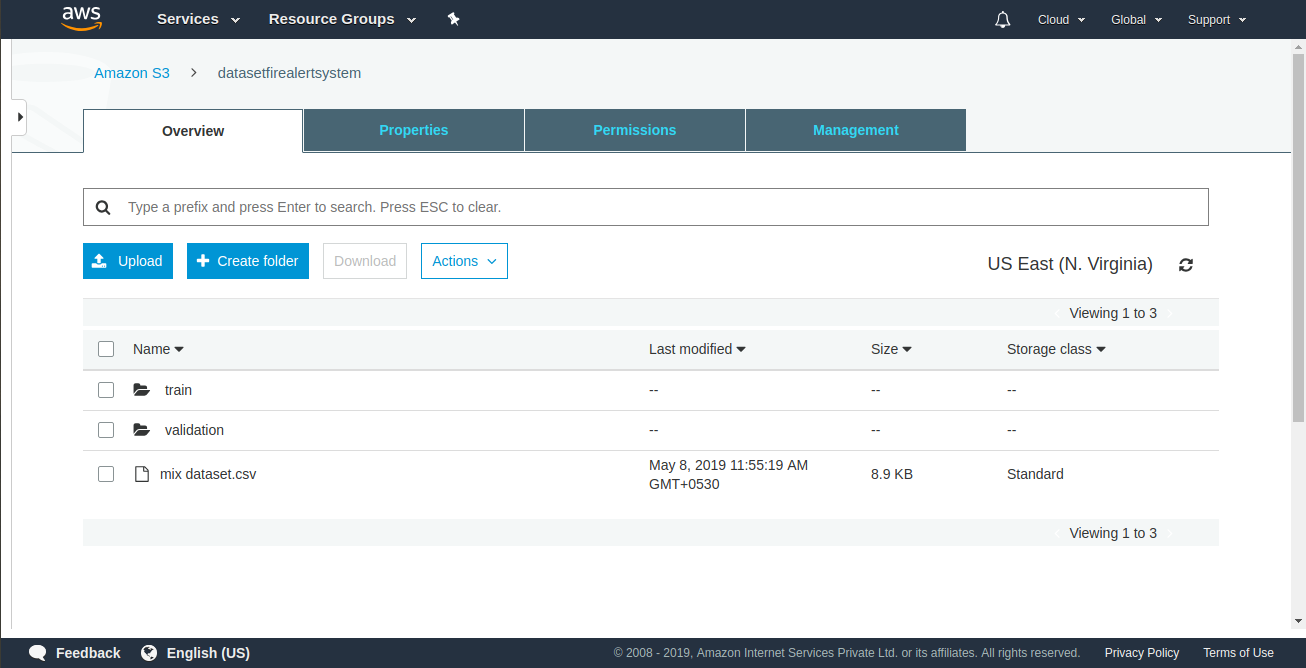




**STEP 47: CREATE A S3 BUCKET AND UPLOAD THE CSV FILE IN S3 BUCKET.**

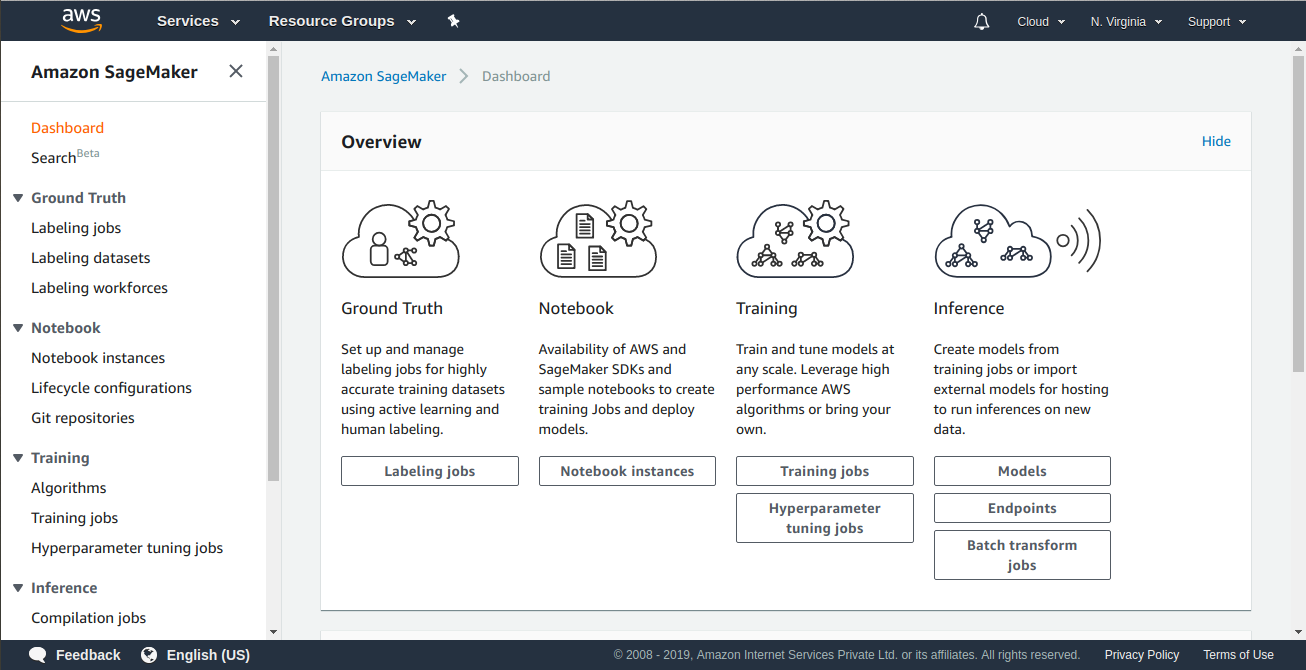


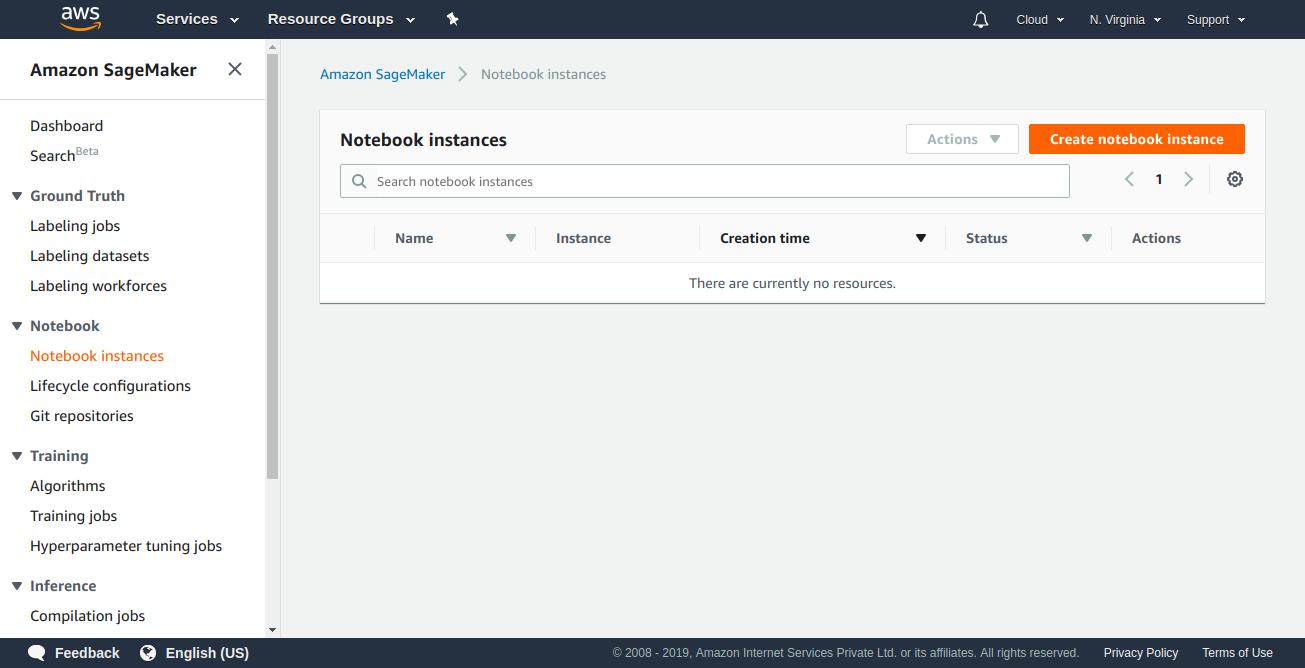
**STEP 48: TRAIN AND VALIDATION DATASET.**



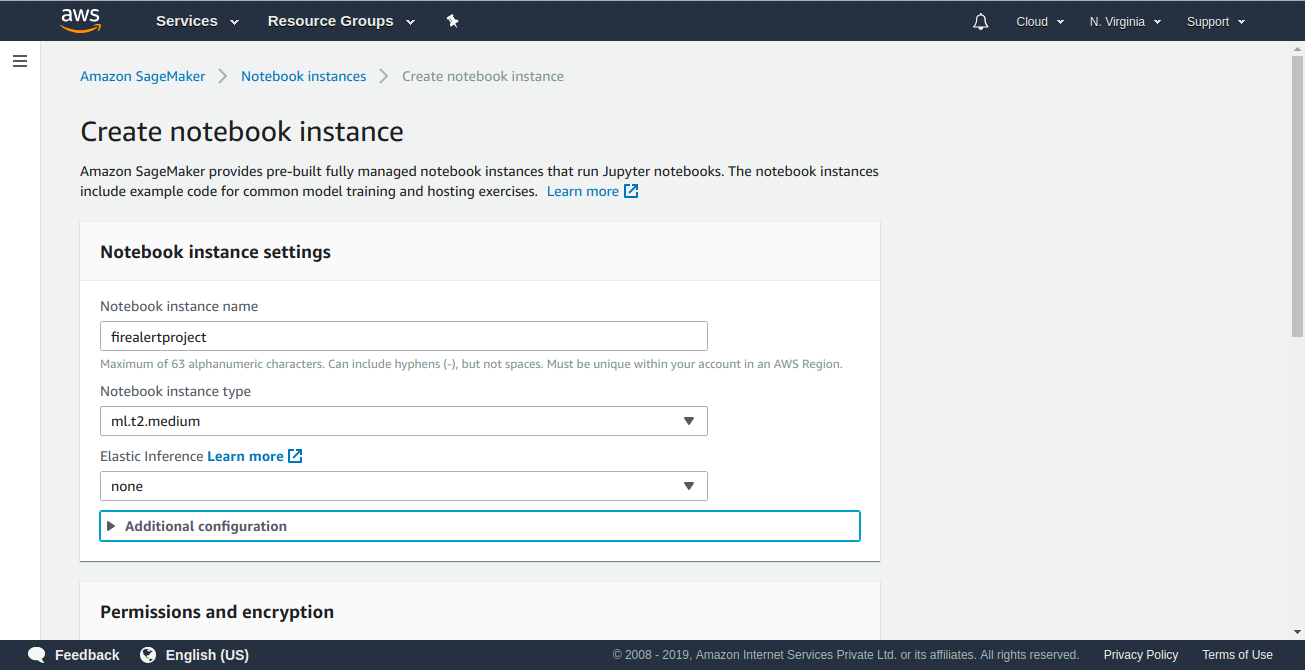
***GOAL 4: APPLYING MACHINE LEARNING ALGO. THROUGH AWS SAGEMAKER.***

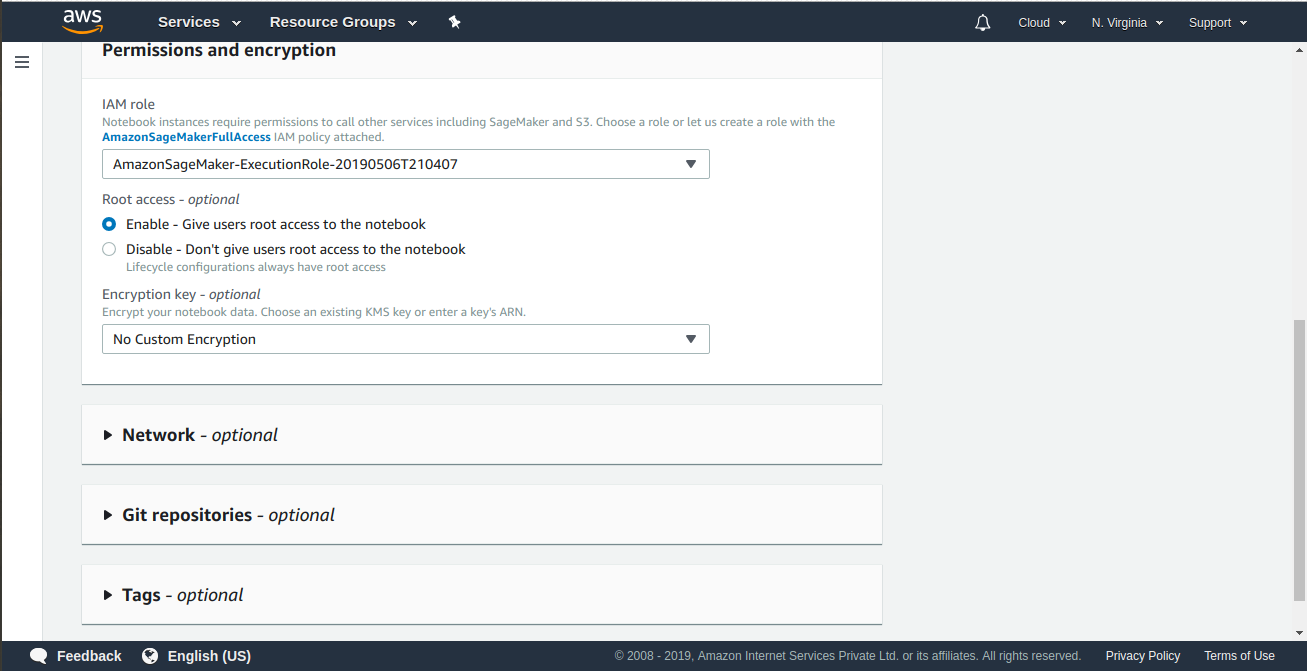
**STEP 49: AWS SAGEMAKER.**

**STEP 50: OPEN NOTEBOOK INSTANCES AND SELECT CREATE OPTION .**

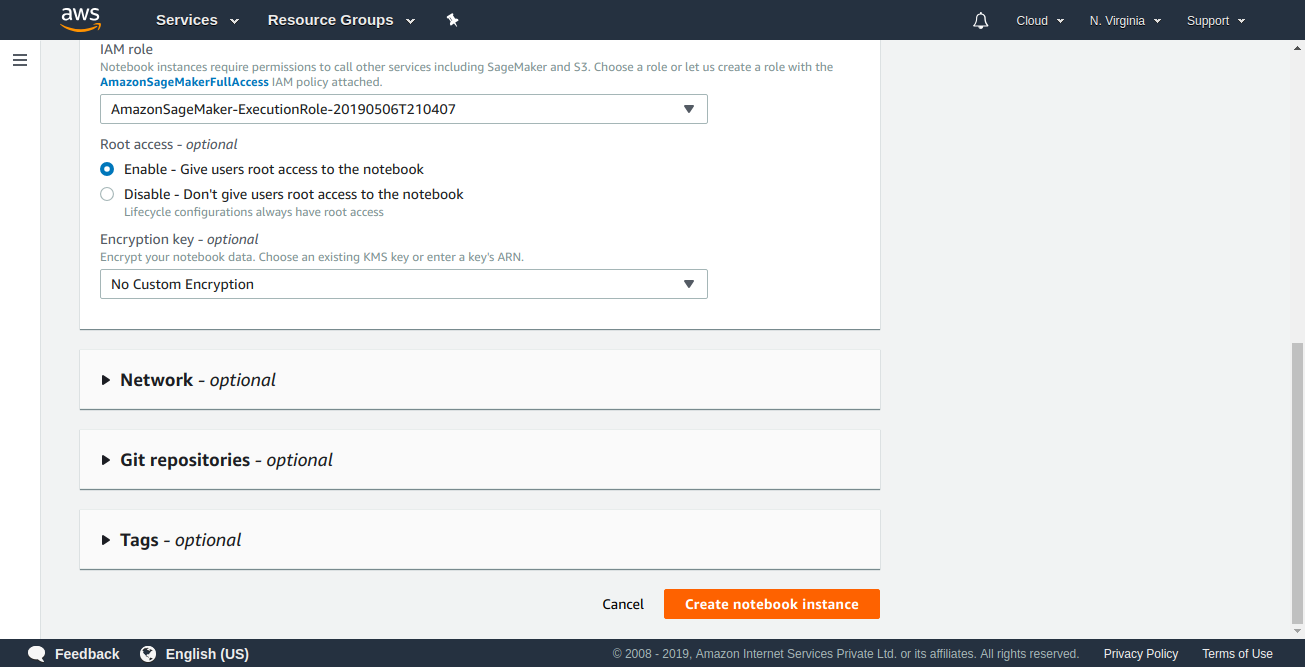
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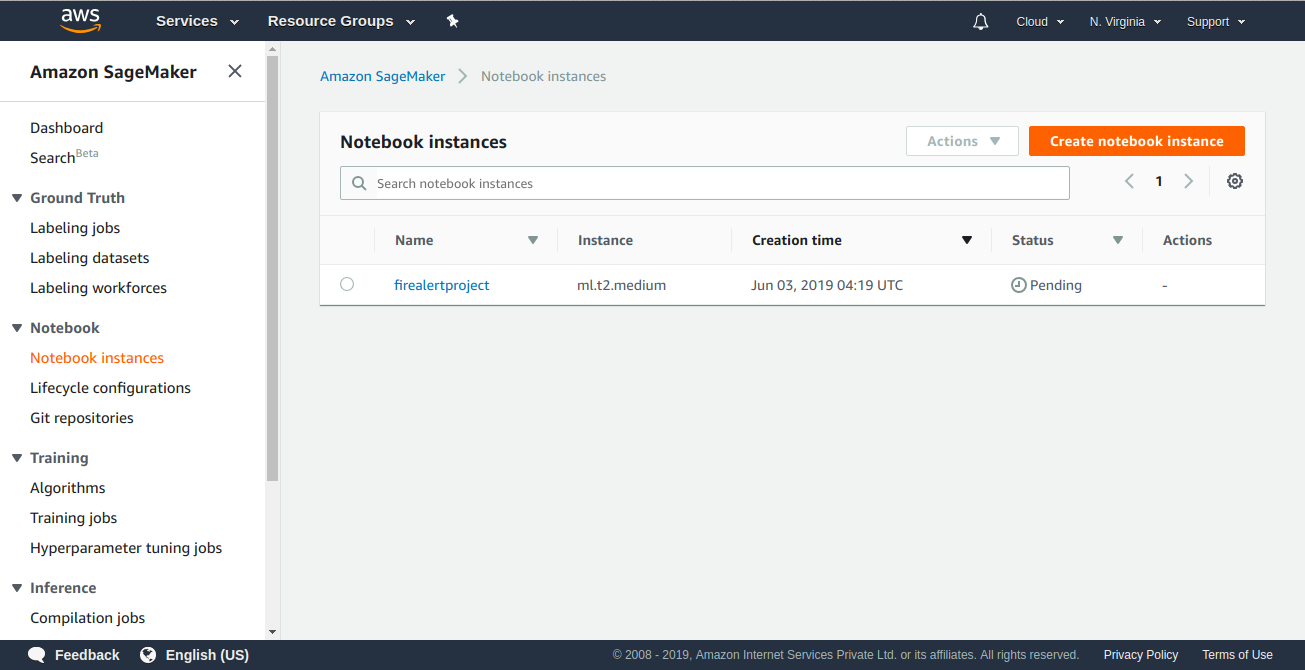
**STEP 51: GIVE THE NAME OF NOTEBOOK INSTANCE.**

**STEP 52: RELATED PERMISSION FOR NOTEBOOK INSTANCE.**

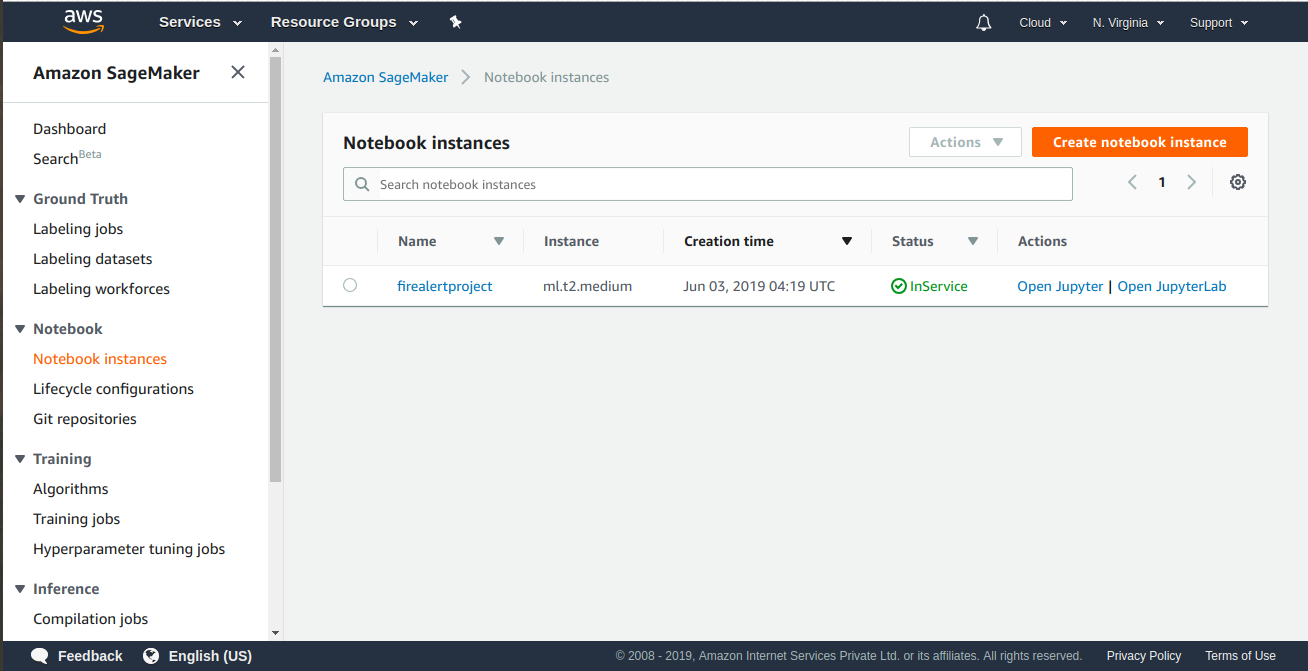
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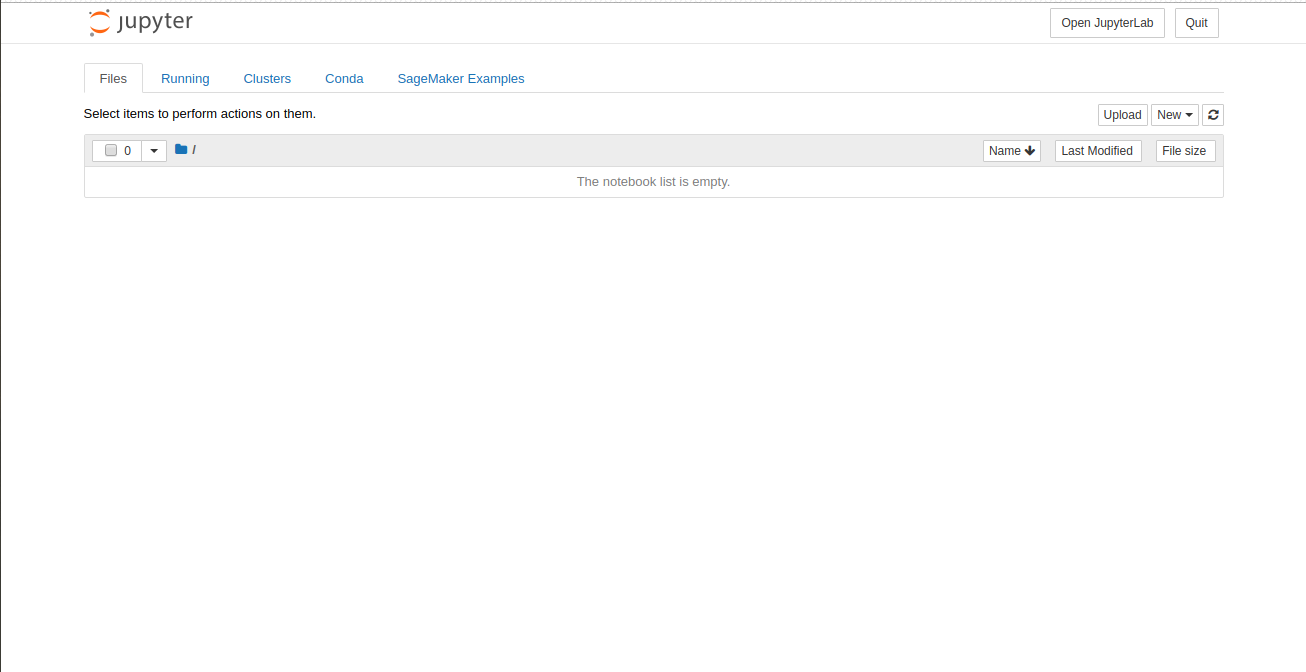
**STEP 53: SELECT CREATE NOTEBOOK INSTANCE.**

**STEP 54:NOTEBOOK INSTANCE IS CREATING.**

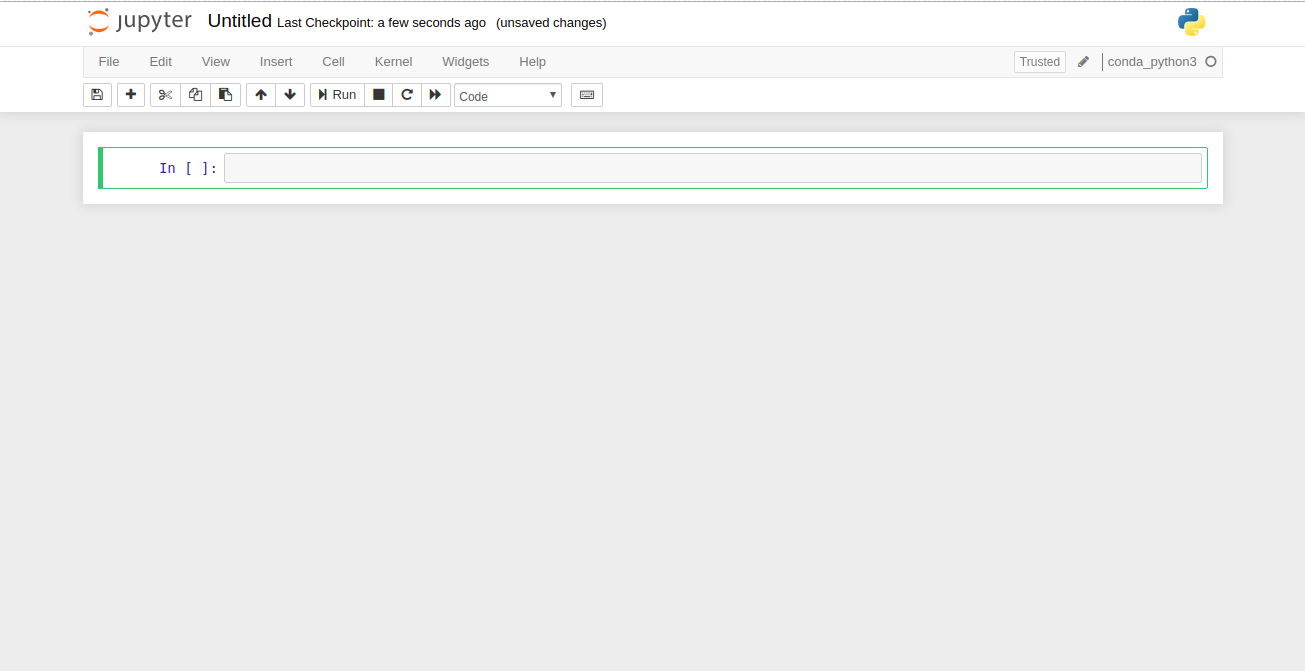
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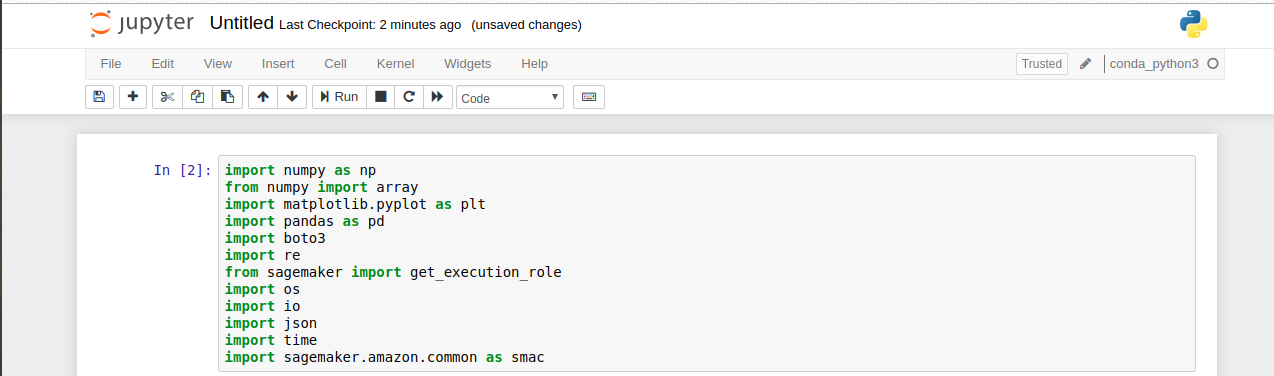
**STEP 55: NOTEBOOK INSTANCE IS CREATED.**

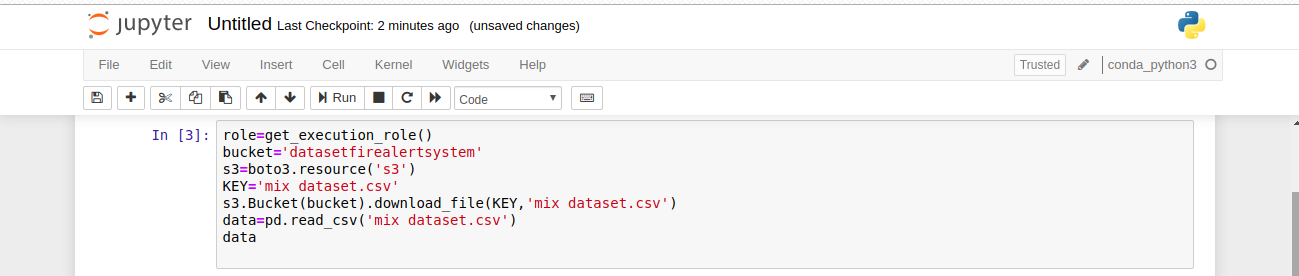
**STEP 56: OPEN JUPYTER FOR NOTEBOOK INSTANCE AND OPEN IN CONDA\_PYTHON 3.**

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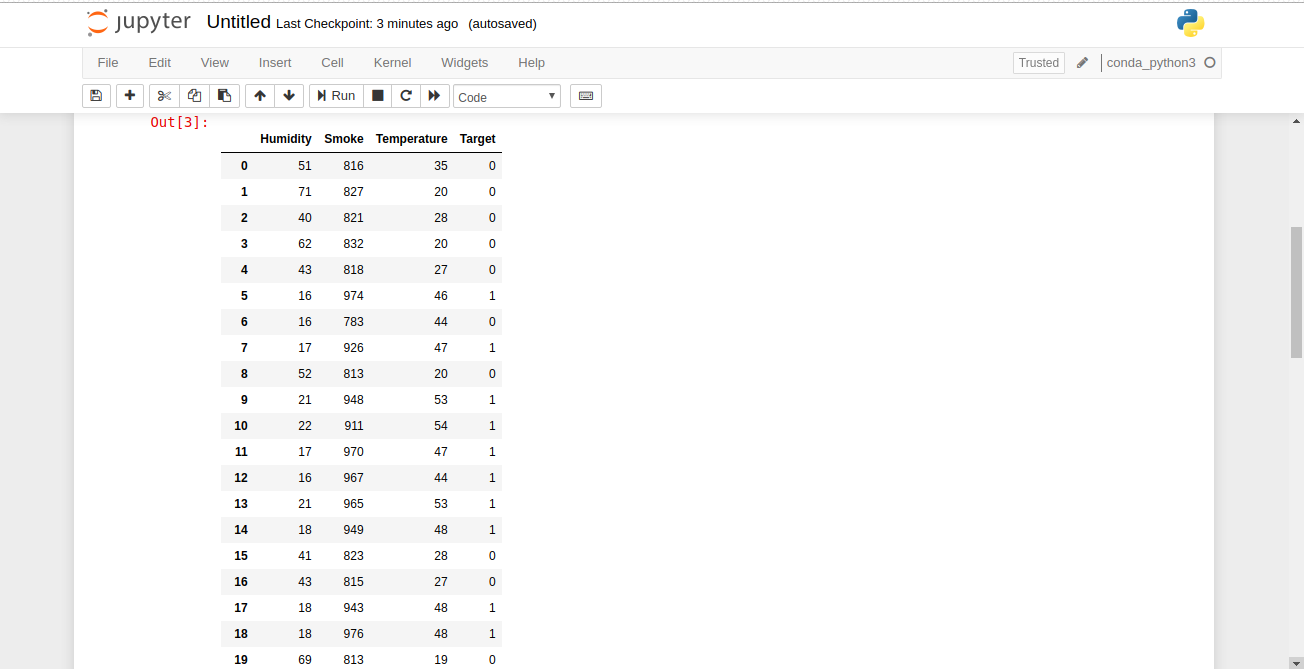
**STEP 57: JUPYTER CONDA\_PYTHON IS CREATED.**

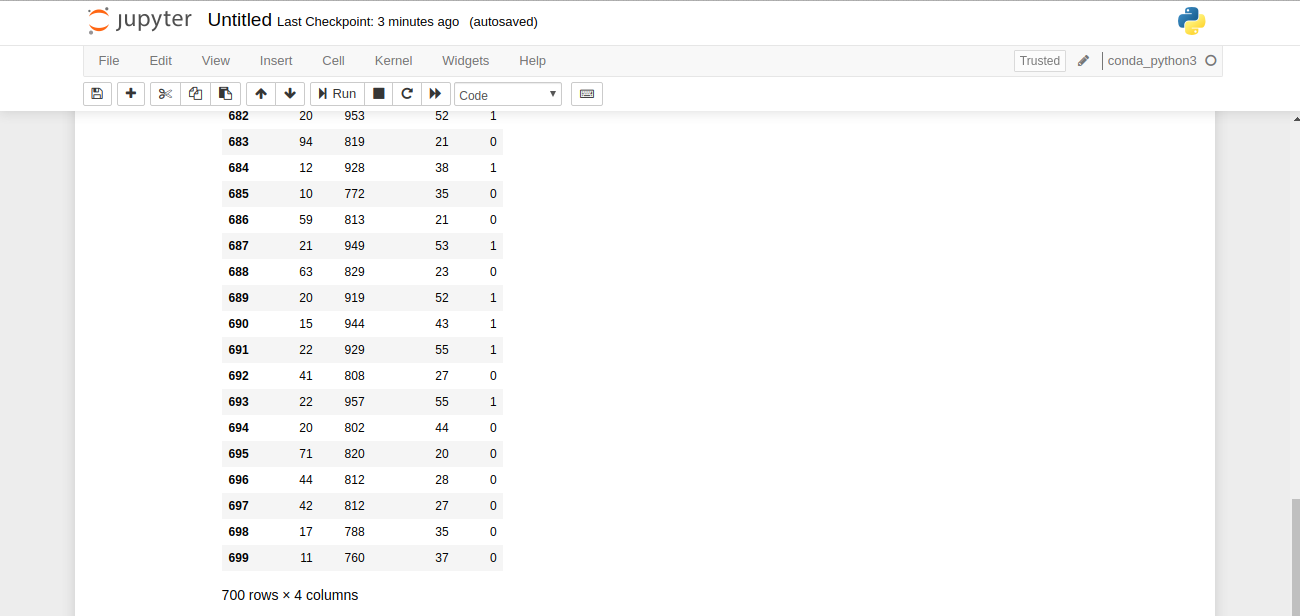
**STEP 58: SELECT THE CODE FOR IMPORTING THE LIBRARIES AND RUN IT.**

**STEP 59: EXPORTING THE DATA AND PRINTING IT.**

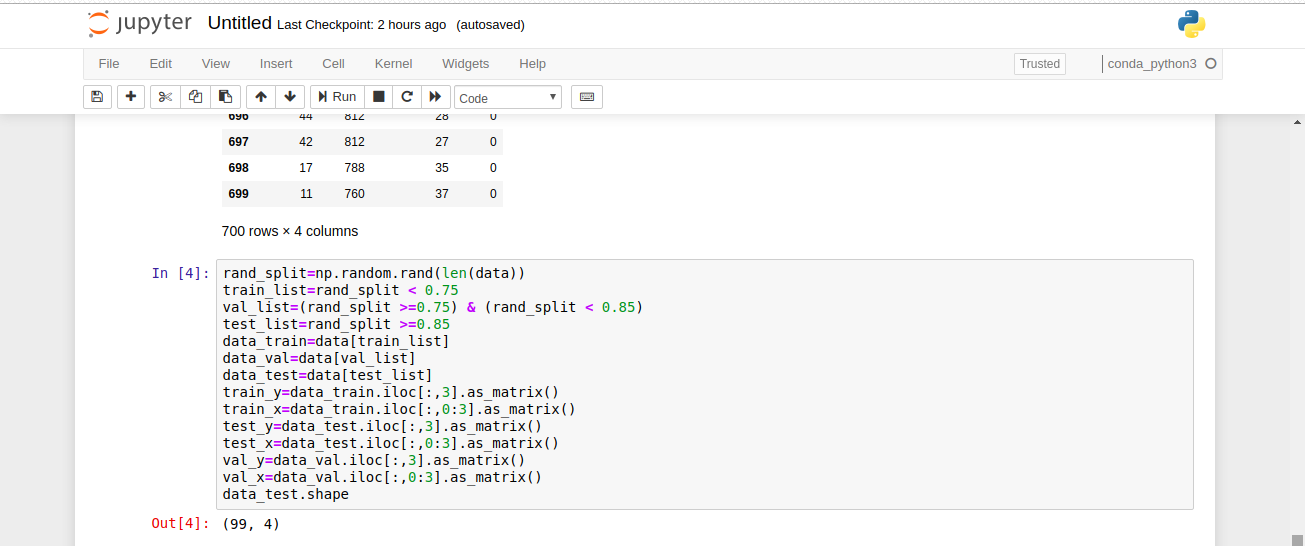
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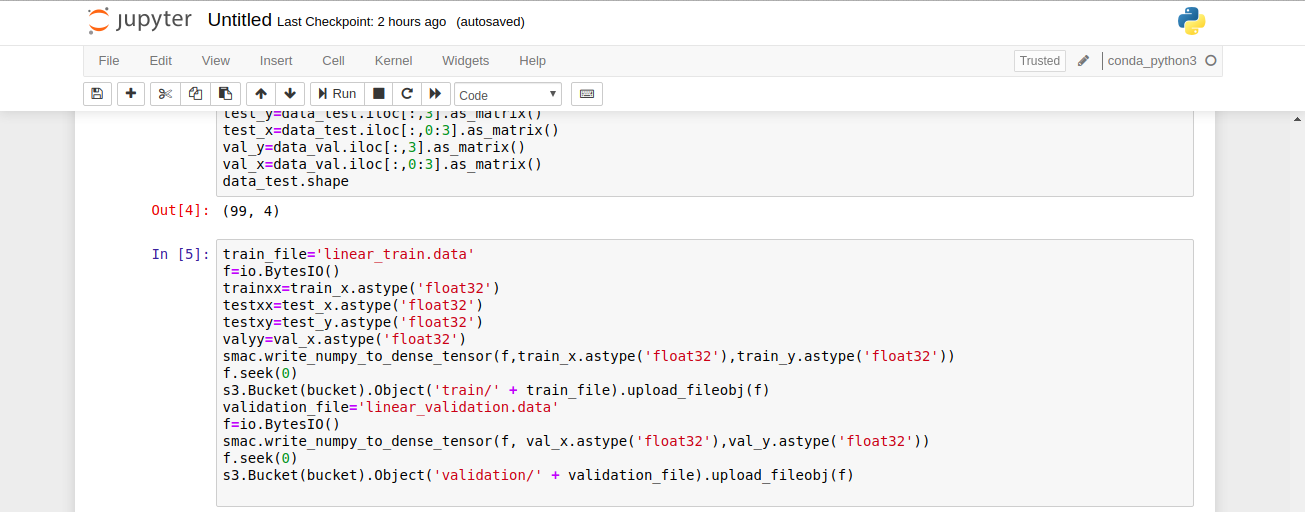
**STEP 60: CSV FILE DATA.**

**STEP 61: DATASET.**

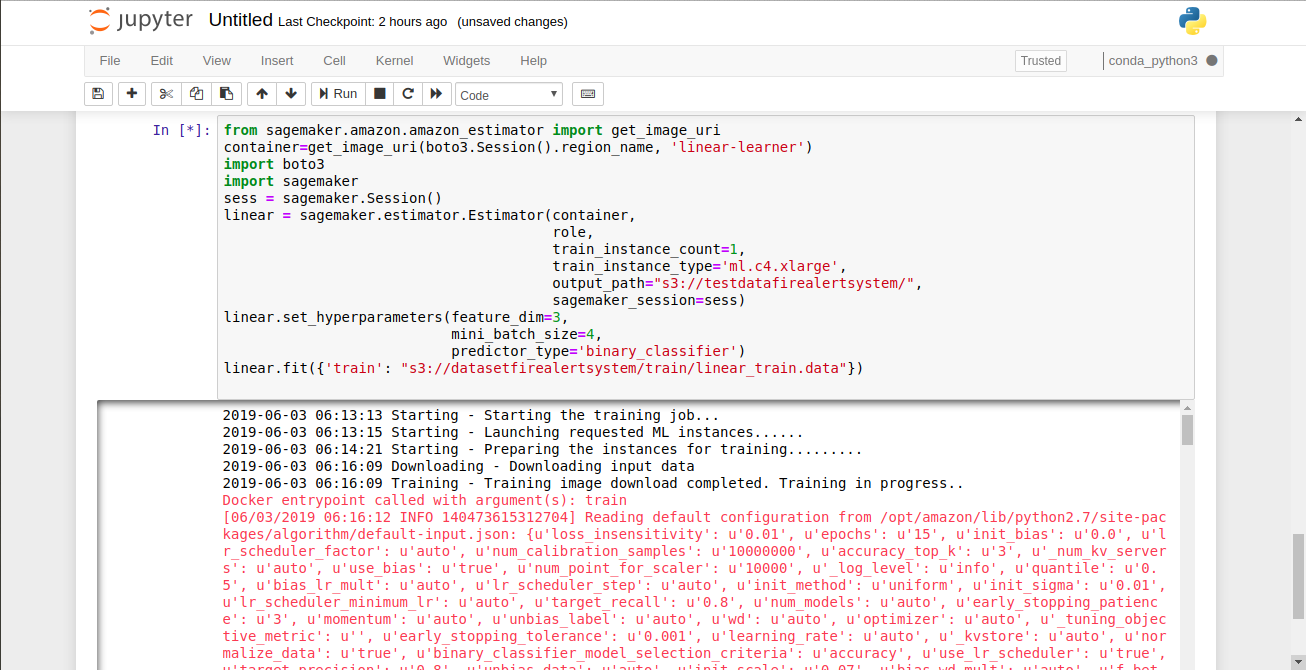
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**STEP 62: SPLITING THE TRAINING DATASET.**

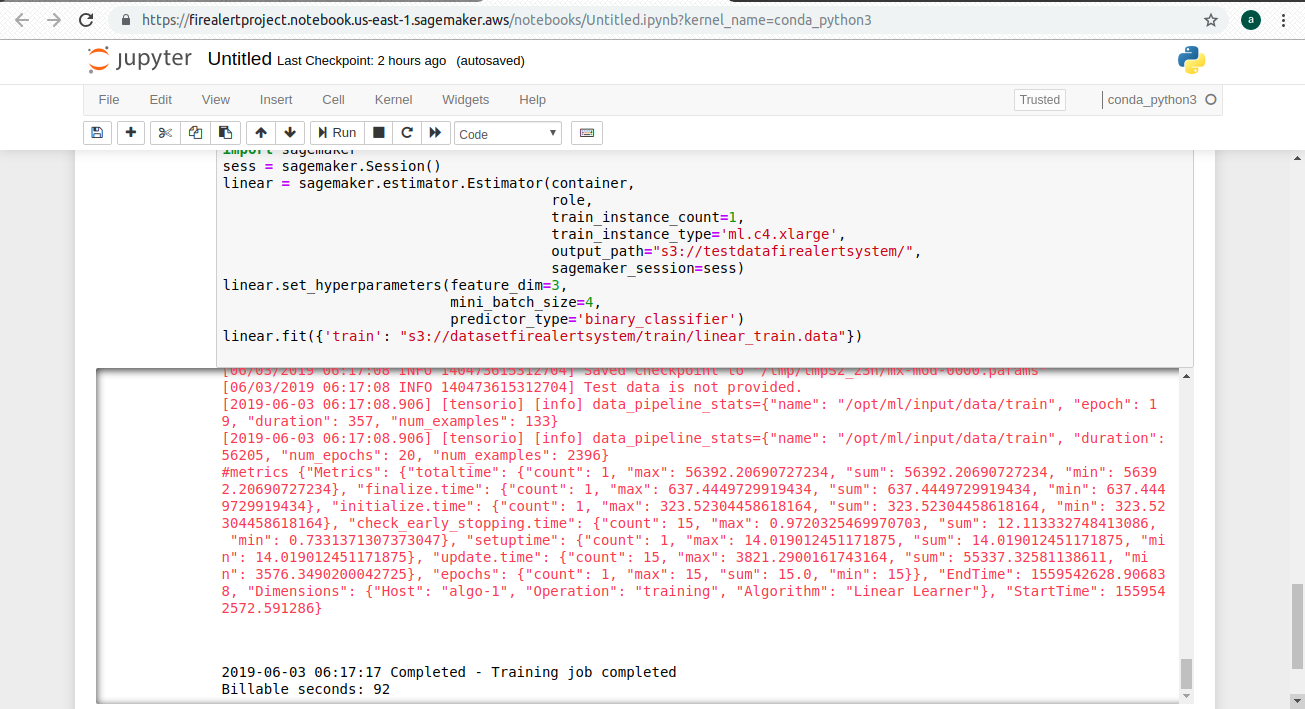
**STEP 63: MAINTAINING THE FILE INS3 BUCKET.**

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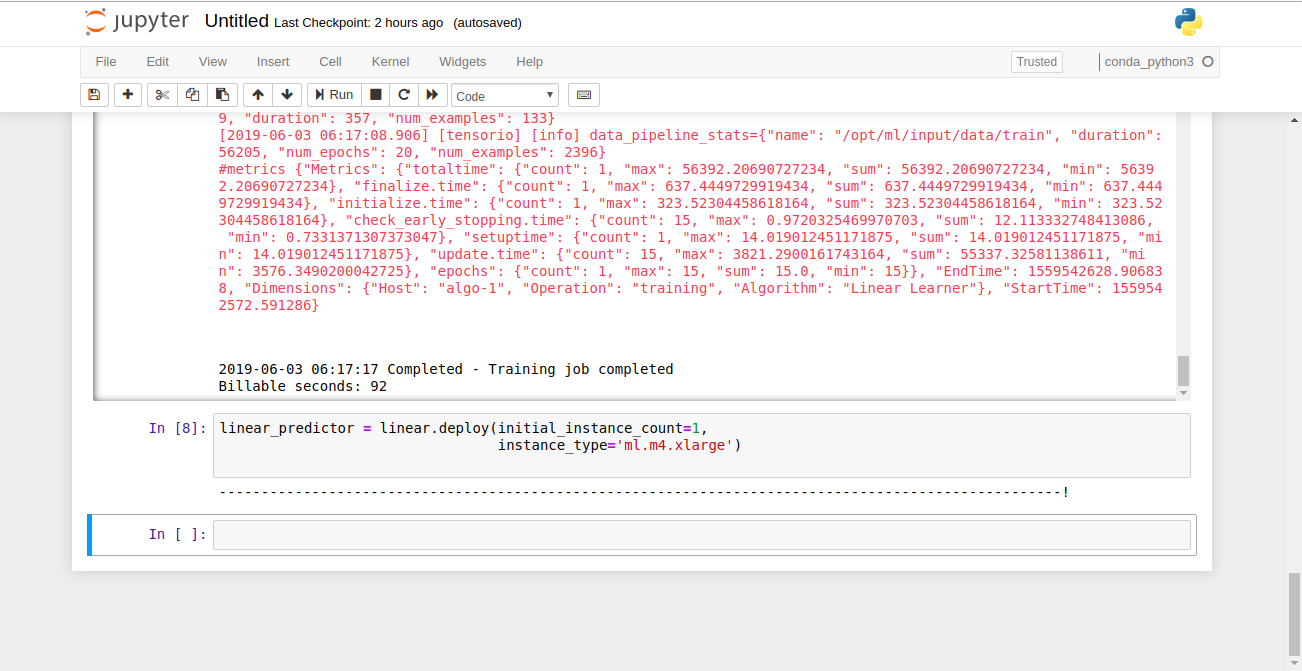
**STEP 64: TRAINING THE DATASET.**

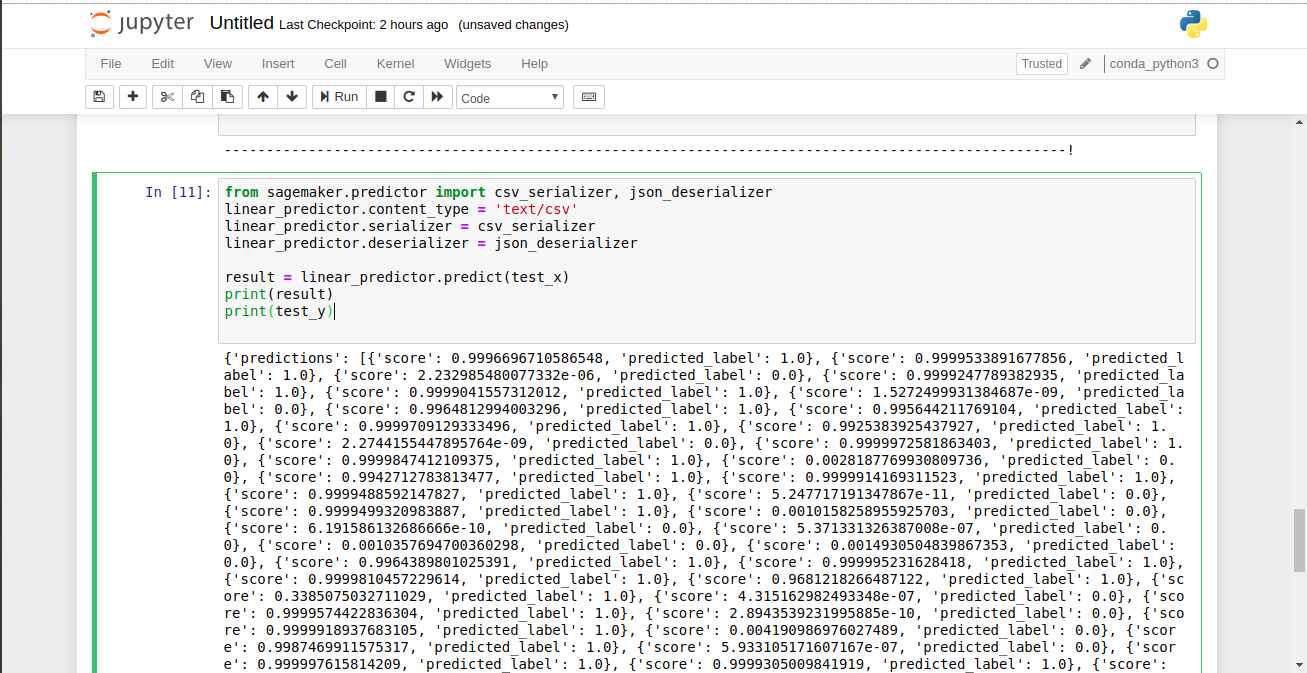
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**STEP 65: TRAINING THE JOB COMPLETED.**

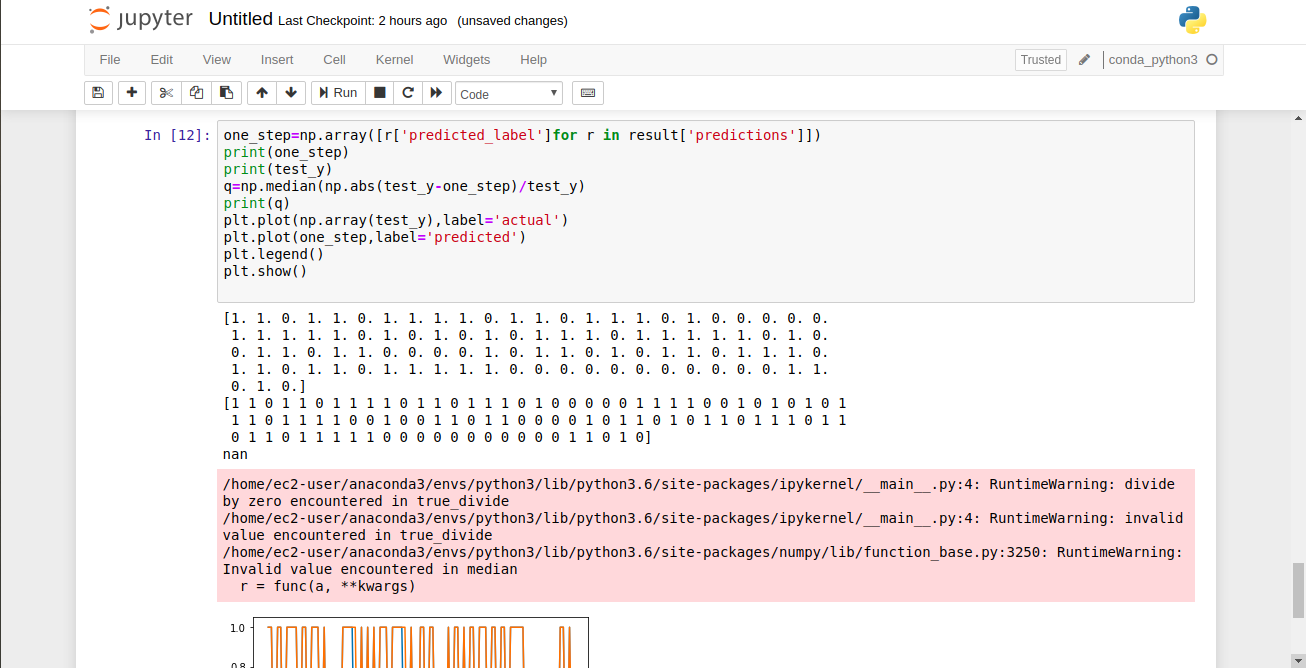
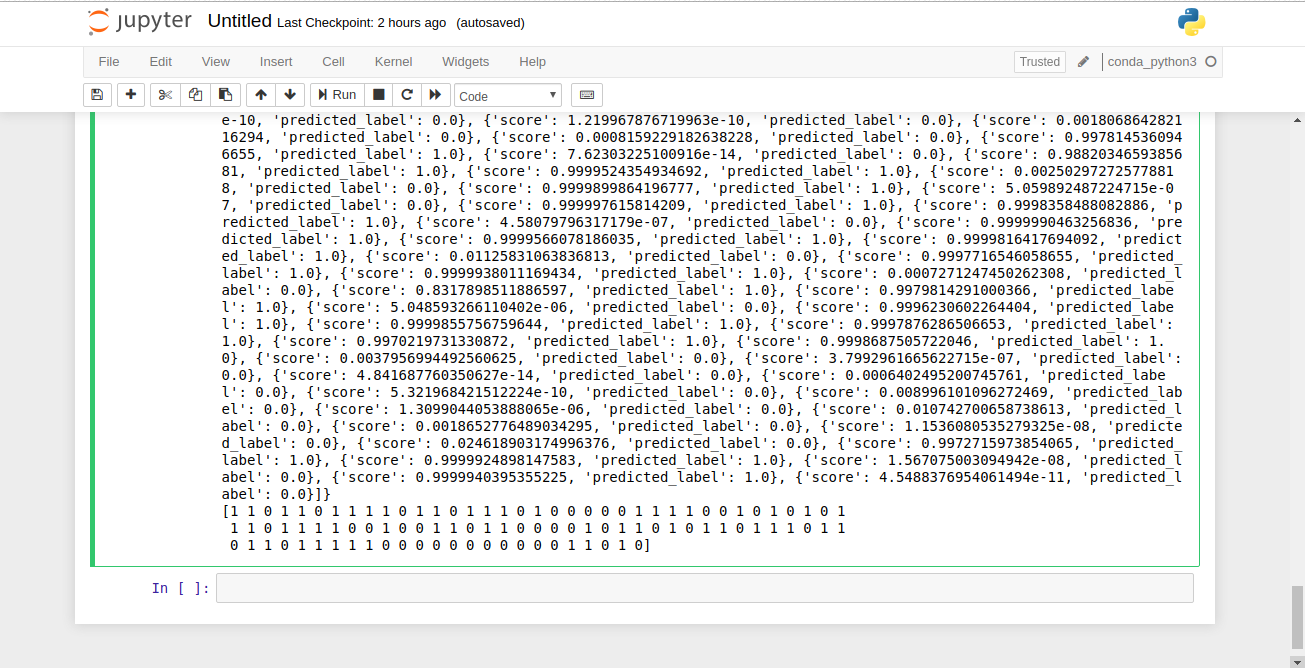
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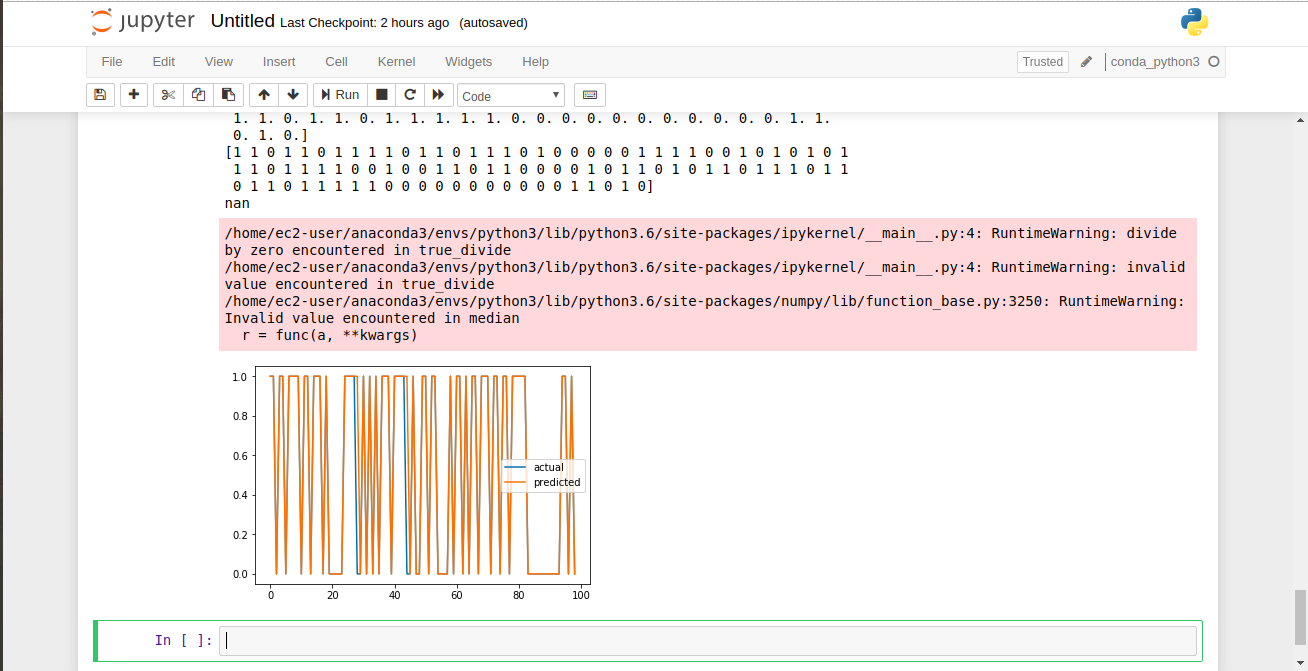
**STEP 66: INTIALIZING THE LINEAR PREDICTOR.**

**STEP 67: PRINTING THE ACTUAL AND PREDICTED LABEL.**

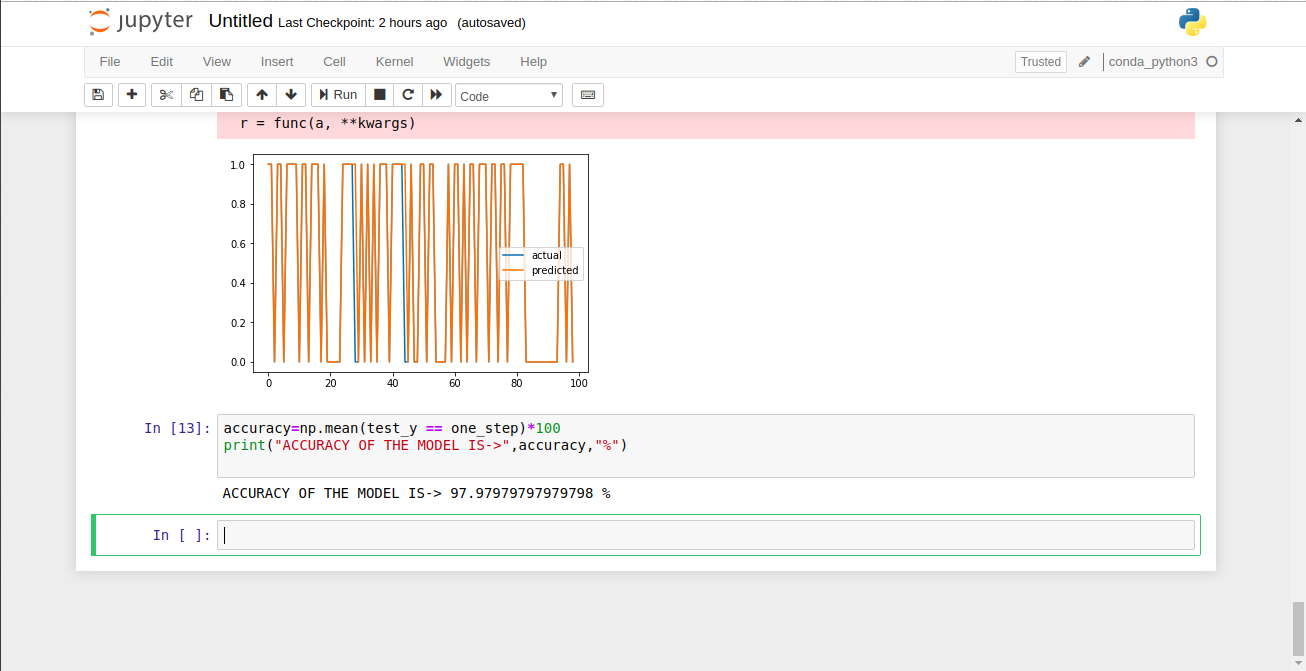
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**STEP 68: PRINTING THE ACTUAL AND PREDICTED VALUE.**

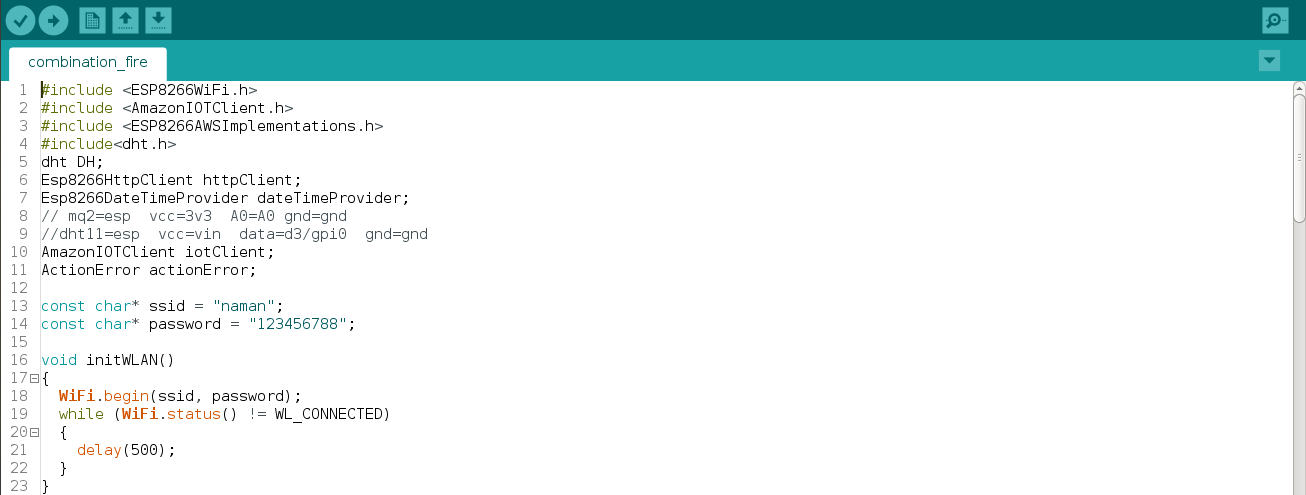
**STEP 69: PLOTING THE GRAPH.**

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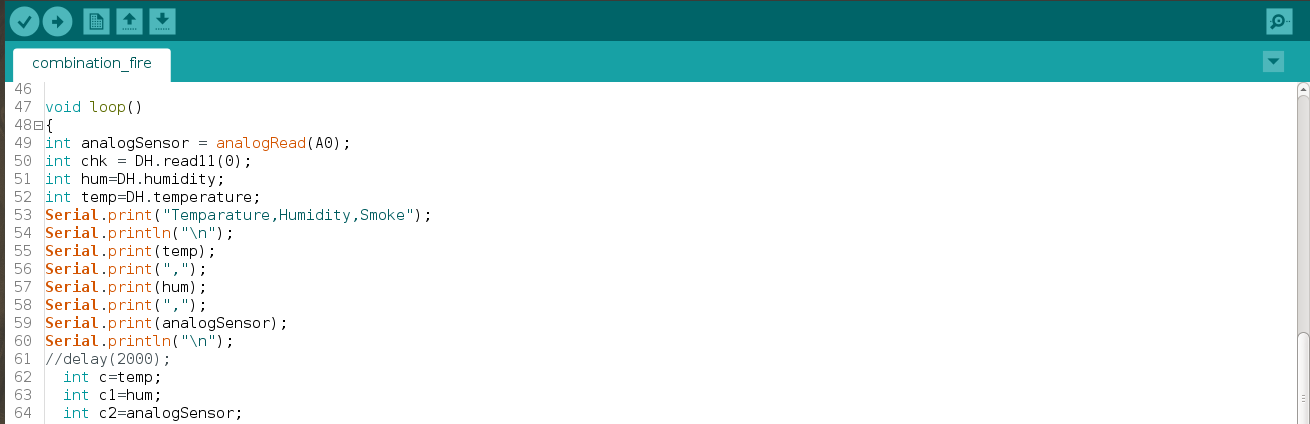
**STEP 70: FINDING THE ACCURACY OF THE MODEL.**

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***GOAL 5. ARDUINO CODE.***

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