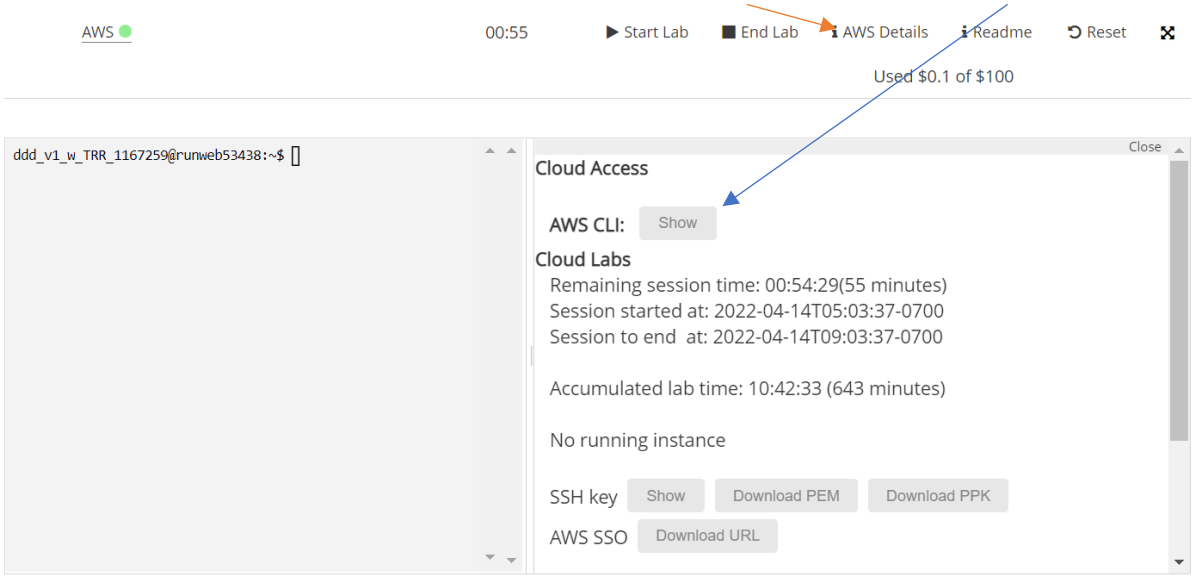
SPARKIFY 3 – Upload logs to S3 using Boto3

<<TASK 0>> Create an instance and add AWS credentials

1. Create an Amazon Linux instance (as done in Sparkify 1)
2. SSH into the instance
3. In AWS academy; where you launched the AWS; click on AWS Details and then click show AWS CLI



4. In SSH; go to home if not already there (cd ~)
5. Create new folder:
   mkdir .aws
6. Create a new file
   vim .aws/credentials
7. paste entire AWS CLI content – as it is – save and quit
   [you **need to modify the credentials file on every launch** since AWS CLI is not constant]

<<TASK 1>> Install Boto3

1. create a virtual python environment (if not already exists) and activate it
   [python3 -m venv venv
   source venv/bin/activate]
2. pip install boto3
3. to check if installation successful, run python [type python3] then follow these steps:
   - import boto3
   - s3 = boto3.resource('s3')
   - for bucket in s3.buckets.all():
     print(bucket.name)
   - you should be able to see all the buckets in your s3*

```
>>> import boto3
>>> s3 = boto3.resource('s3')
>>> for bucket in s3.buckets.all():
...     print(bucket.name)
...
aws-logs-352275169258-us-east-1
dsci6007yshah
>>>
```

* If you face any issues (eg - access denied); confirm that your credentials file was created properly

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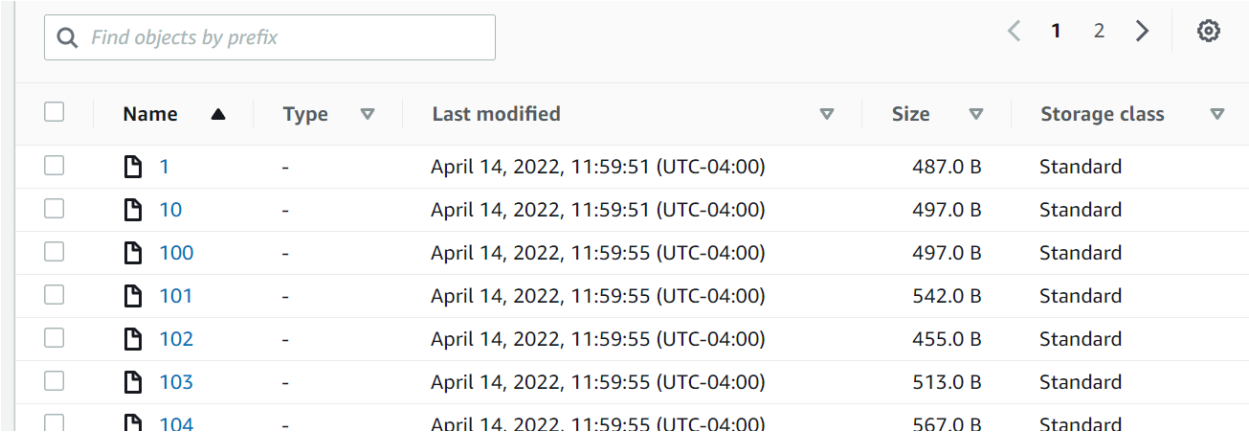
<<TASK 2>> Upload logs to S3

0. to be able to upload the log files; make sure the log files actually exist in your instance
   [already present from Sparkify 1; if not exists, follow steps from TASK 2 in Sparkify 1 tutorial]
   [if you are transferring files here;
   make sure to deactivate your python venv – activate again after transferring]
1. Create a .py file to upload log files to S3 bucket
   - Import all required packages
   - Create bucket
   - Upload files
2. Run the file – python3 fileForUpload.py
3. Go to S3 [choose the bucket you created]
   and confirm that your files have been uploaded
   [see screenshot below – object names are according to key value given in the put_object method]



uploadToS3.py

```
import os
import boto3
import json
import logging
from botocore.exceptions import ClientError


def create_bucket(bucket_name, region=None):
    """Create an S3 bucket in a specified region

    If a region is not specified, the bucket is created in the S3 default
    region (us-east-1).

    :param bucket_name: Bucket to create
    :param region: String region to create bucket in, e.g., 'us-west-2'
    :return: True if bucket created, else False
    """

    # Create bucket
    try:
        if region is None:
            s3_client = boto3.client("s3")
            s3_client.create_bucket(Bucket=bucket_name)
        else:
            s3_client = boto3.client("s3", region_name=region)
            location = {"LocationConstraint": region}
            s3_client.create_bucket(
                Bucket=bucket_name, CreateBucketConfiguration=location
            )
    except ClientError as e:
        logging.error(e)
        return False
    return True


def upload_logData():
    # where the log data resides in the instance
    dire = r"/home/ec2-user/log_data/"
    s3 = boto3.client("s3")
    bucket = "dsci6007yshah1"
    # key is the file name - I have just used numbers
    key = 1
    for filename in os.listdir(dire):
        with open(dire + filename, encoding="utf-8") as f:
            for jsonObj in f:
                dic = json.loads(jsonObj)
                dic = json.dumps(dic)
                s3.put_object(Body=dic, Bucket=bucket, Key=str(key))
                key += 1


# make sure to give a unique (non existing) bucket name
create_bucket("dsci6007yshah1")
upload_logData()
```