AWS ASSIGNMENT: 2
DATA INGESTION LAB

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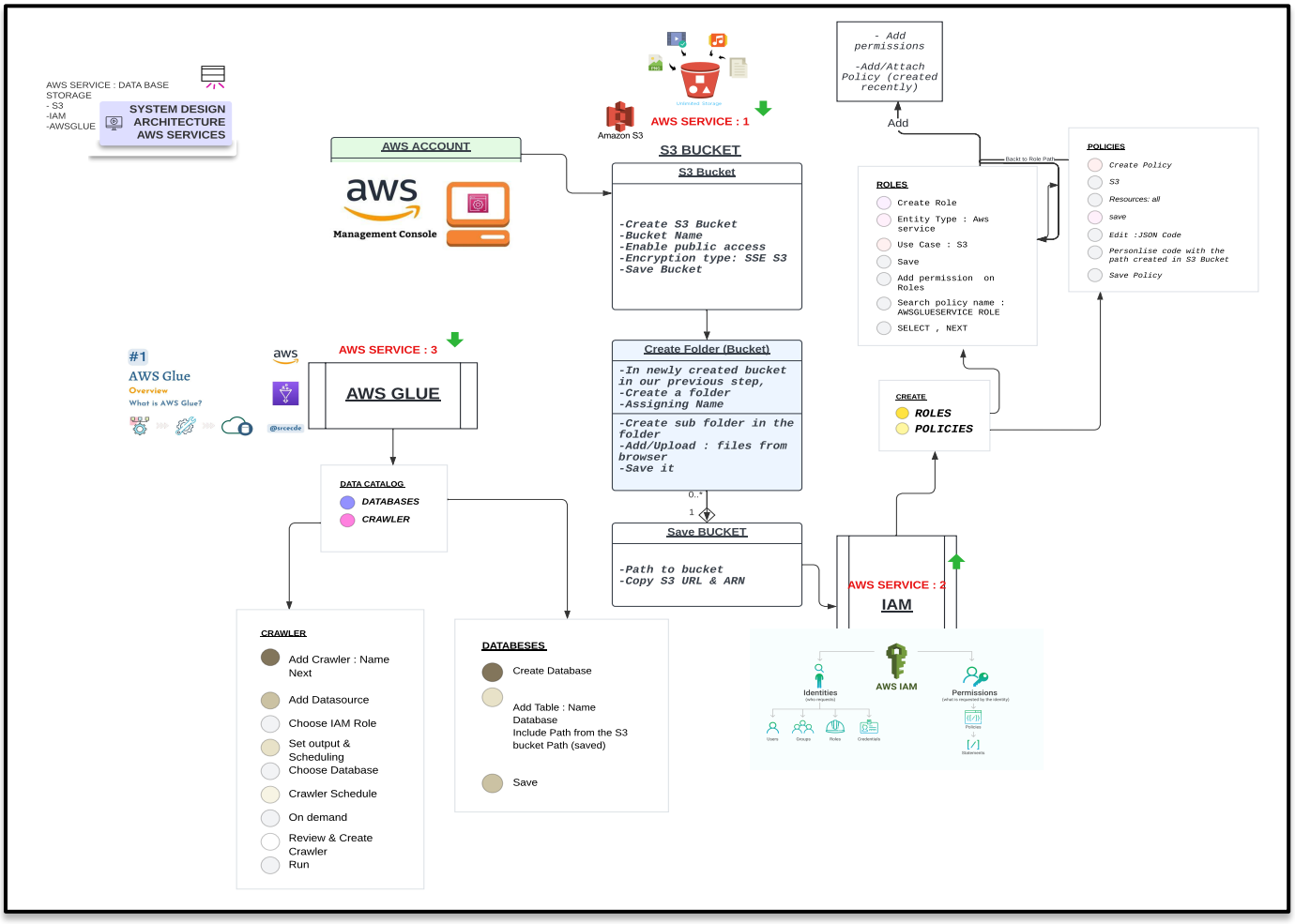
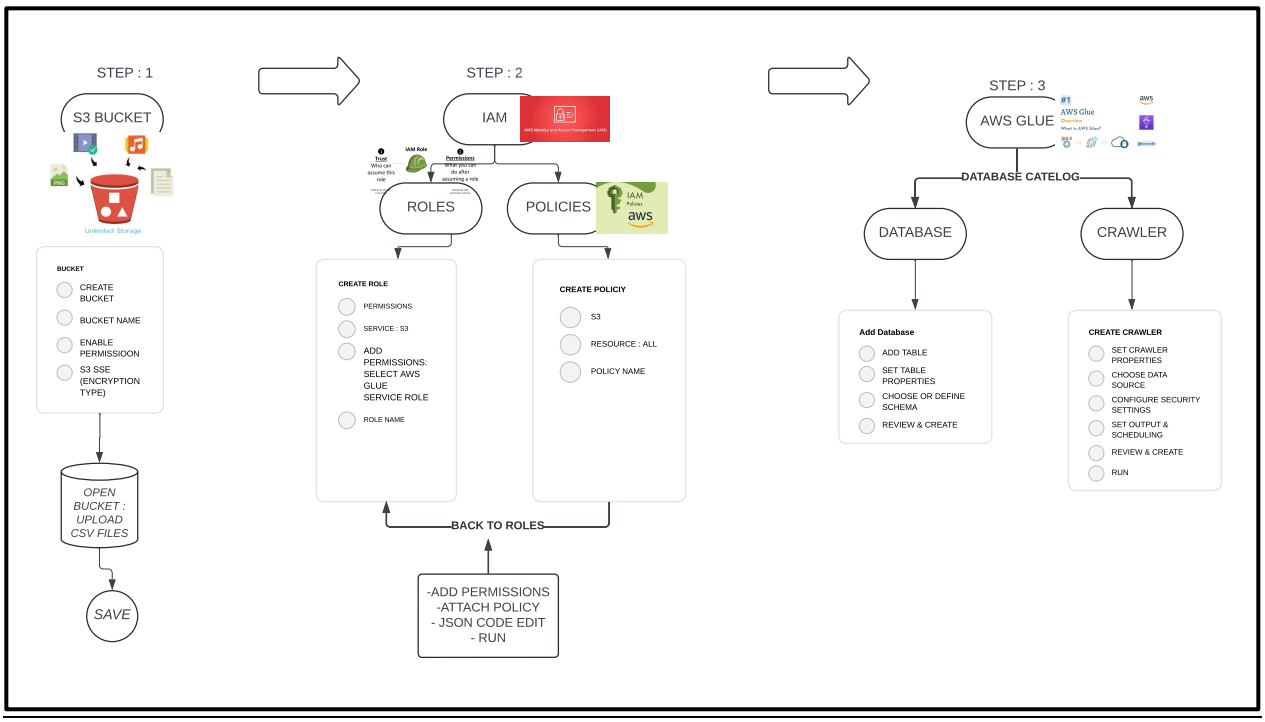
1.





2.)

1. IAN (Instance Access Number):
It's a unique identifier for a virtual machine (instance) in Amazon Web Services (AWS).
Example: A virtual server (instance) running a website on AWS. Its IAN would be like a digital address, allowing you to access and manage that specific instance.

2. ARN (Amazon Resource Name):
It's a unique identifier for any resource in AWS, like a database, bucket, or service.
Example: While creating a new S3 bucket in AWS, it gets assigned an ARN. This ARN uniquely identifies that bucket across all of AWS, making it easy to reference and manage.

3. Crawler (AWS Glue Crawler):

It's a tool in AWS Glue that automatically discovers and catalogs data from various sources like databases and files.
Example: When data is scattered across different databases and files in the AWS environment. A crawler automatically scans and organizes this data, making it easier to analyze and work with.

3.)

In AWS, JSON (JavaScript Object Notation) is used as a format for storing and exchanging data between different services and components. It's like a universal language that AWS services understand. JSON is made up of key-value pairs, where each key is a string and each value can be a string, number, boolean, array, or another JSON object.

Following code that was used during the last class

```
{
   "Version": "2012-10-17",
   "Statement": [
      {
         "Action": [
            "s3:AbortMultipartUpload",
            "s3:DeleteObject",
            "s3:DeleteObjectTagging",
            "s3:DeleteObjectVersion",
            "s3:DeleteObjectVersionTagging",
            "s3:Describe*",
            "s3:Get*",
            "s3:List*",
            "s3:PutAnalytics*",
            "s3:PutBucketAcl",
            "s3:PutBucketCORS",
            "s3:PutBucketLogging",
            "s3:PutBucketNotification",
            "s3:PutBucketPolicy",
            "s3:PutBucketTagging",
            "s3:PutBucketVersioning",
            "s3:PutBucketWebsite",
            "s3:PutEncryptionConfiguration",
            "s3:PutInventoryConfiguration",
            "s3:PutMetricsConfiguration",
            "s3:PutObject",
            "s3:PutObjectAcl",
            "s3:PutObjectTagging",
```

```
            "s3:PutObjectVersionTagging"
        ],
        "Resource": [
            "arn:aws:s3:::query-result-65d41890",
            "arn:aws:s3:::glue-bucket-65d41890",
            "arn:aws:s3:::query-result-*/*",
            "arn:aws:s3:::glue-bucket-*/*"
        ],
        "Effect": "Allow"
    },
    {
        "Action": [
            "s3:Describe*",
            "s3:Get*",
            "s3:List*"
        ],
        "Resource": [
            "arn:aws:s3:::global-electric-car/us/washington/",
            "arn:aws:s3:::global-electric-car/us/washington/*"
        ],
        "Effect": "Allow"
    }
  ]
}
```

- This JSON code represents an AWS IAM (Identity and Access Management) policy document. It defines permissions for accessing various actions on Amazon S3 buckets and objects.
- Contains one or more individual statements, each granting a set of permissions.
- Specifies the actions that are allowed. These actions are related to managing objects and buckets in Amazon S3, such as listing objects, putting objects, deleting objects, etc.
- Specifies the AWS resources (S3 buckets and objects) to which the actions apply. It uses ARNs (Amazon Resource Names) to specify the resources. The wildcard (*) is used to match multiple resources.
- Specifies whether the permissions are allowed or denied. In this case, "Allow" indicates that the actions specified in the statement are permitted for the specified resources.
- This policy grants permissions for various S3 actions on specific buckets and objects

- The first statement allows a broad set of actions (`"s3:*"`) on two specific S3 buckets

(`"arn:aws:s3:::query-result-65d41890"` and `"arn:aws:s3:::glue-bucket-65d41890"`)

as well as any objects within those buckets. It also allows similar actions on any objects in buckets matching the patterns

`"arn:aws:s3:::query-result-*/*"` and `"arn:aws:s3:::glue-bucket-*/*"`.

- The second statement allows read-only

(`"s3:Describe*"`, `"s3:Get*"`, `"s3:List*"`)

access to objects in a specific path

(`"arn:aws:s3:::global-electric-car/us/Washington/"`)

within an S3 bucket, as well as any objects within that path.