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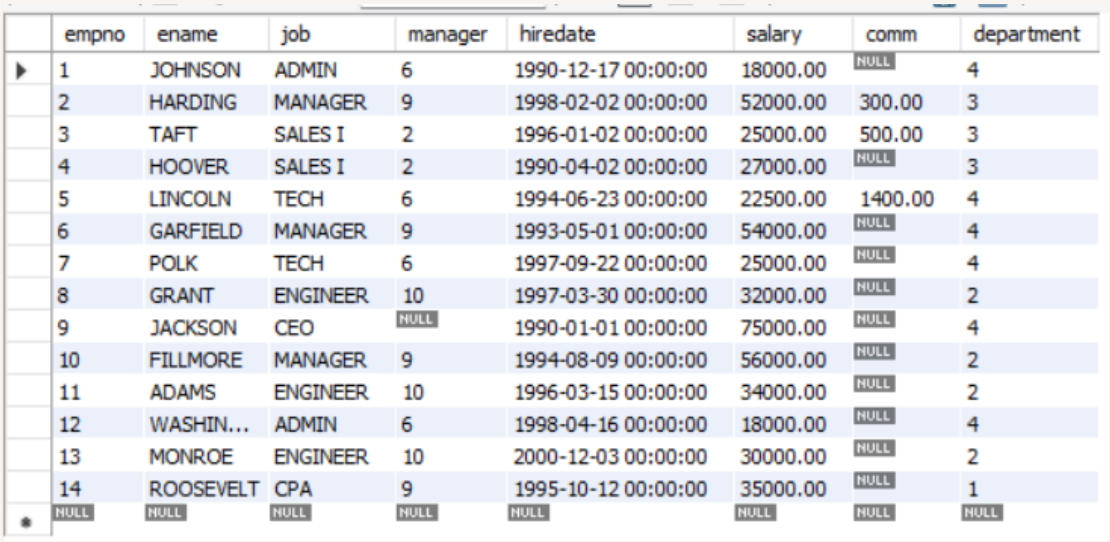
# Visualise a Relational Database

RU **Rubanpreet Singh**



| empno | ename | job | manager | hiredate | salary | comm | department |
|---|---|---|---|---|---|---|---|
| 1 | JOHNSON | ADMIN | 6 | 1990-12-17 00:00:00 | 18000.00 | NULL | 4 |
| 2 | HARDING | MANAGER | 9 | 1998-02-02 00:00:00 | 52000.00 | 300.00 | 3 |
| 3 | TAFT | SALES I | 2 | 1996-01-02 00:00:00 | 25000.00 | 500.00 | 3 |
| 4 | HOOVER | SALES I | 2 | 1990-04-02 00:00:00 | 27000.00 | NULL | 3 |
| 5 | LINCOLN | TECH | 6 | 1994-06-23 00:00:00 | 22500.00 | 1400.00 | 4 |
| 6 | GARFIELD | MANAGER | 9 | 1993-05-01 00:00:00 | 54000.00 | NULL | 4 |
| 7 | POLK | TECH | 6 | 1997-09-22 00:00:00 | 25000.00 | NULL | 4 |
| 8 | GRANT | ENGINEER | 10 | 1997-03-30 00:00:00 | 32000.00 | NULL | 2 |
| 9 | JACKSON | CEO | NULL | 1990-01-01 00:00:00 | 75000.00 | NULL | 4 |
| 10 | FILLMORE | MANAGER | 9 | 1994-08-09 00:00:00 | 56000.00 | NULL | 2 |
| 11 | ADAMS | ENGINEER | 10 | 1996-03-15 00:00:00 | 34000.00 | NULL | 2 |
| 12 | WASHIN... | ADMIN | 6 | 1998-04-16 00:00:00 | 18000.00 | NULL | 4 |
| 13 | MONROE | ENGINEER | 10 | 2000-12-03 00:00:00 | 30000.00 | NULL | 2 |
| 14 | ROOSEVELT | CPA | 9 | 1995-10-12 00:00:00 | 35000.00 | NULL | 1 |
| NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |

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# Introducing Today's Project!

## What is Amazon RDS?

Amazon RDS, or Amazon Relational Database Service, is a managed relational database service by AWS that simplifies the setup, operation, and scaling of a relational database for use in applications.

## How I used Amazon RDS in this project

Today, I created a RDS instance with two tables in it and populated data in it using a remote connection in MySQL workbench. Then, I visualized the data using Amazon QuickSight.

## One thing I didn't expect in this project was...

using MySQL workbench to create tables and insert data into RDS instance. Until now, I only used it for managing local SQL databases.

## This project took me...

This project took me around 90 minutes.

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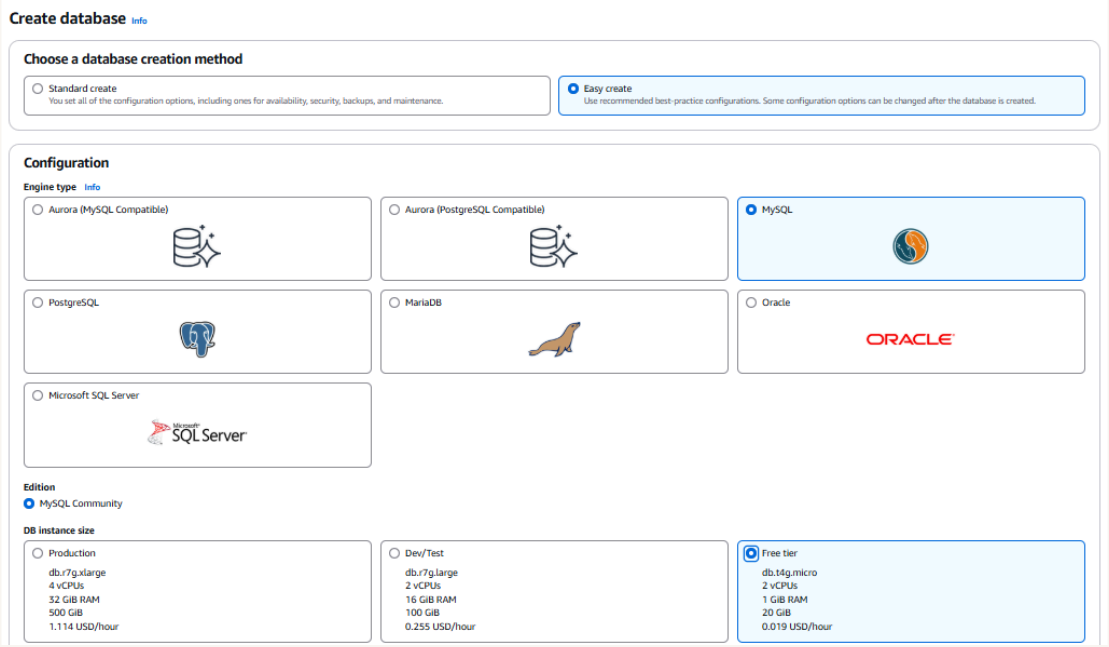
# In the first part of my project...

## Creating a Relational Database

I created my relational database by visiting my RDS console and choosing MySQL as the engine type. I also created credentials for logging into my database.



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# Understanding Relational Databases

A relational database is a type of database that organizes data into tables. It is similar to a spreadsheet where data is stored in form of rows and columns.

## MySQL vs SQL

SQL is a standard programming language used for managing relational databases. MySQL is a relational database management system that uses SQL as the language for interacting with the database.

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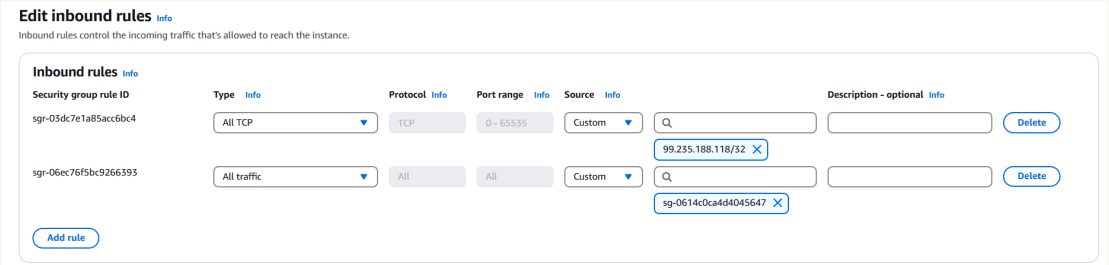
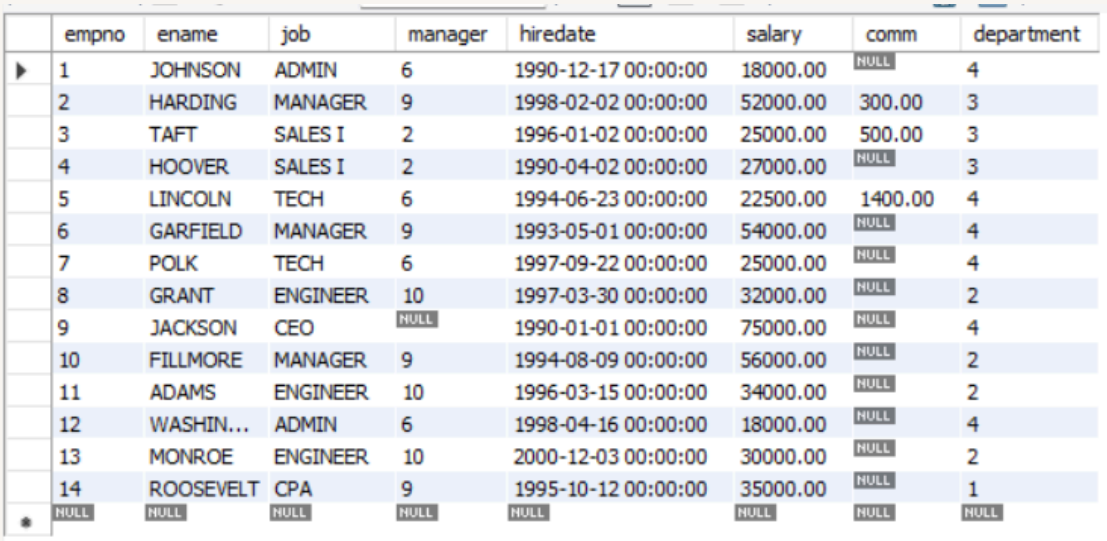
# Populating my RDS instance

The first thing I did was make my RDS instance public because I will be accessing it from my local machine using MySQL Workbench. I will also specify all the allowed connections in my security group.

I had to update the default security group for my RDS schema because it does not allow traffic from anywhere by default which prevents us from accessing it from our computer.



# Using MySQL Workbench



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| NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |

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To populate my database I connected MySQL Workbench and RDS instance. Then, I created a schema with two tables: newhire, department. I executed insert queries to insert data into the tables.

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# Connecting QuickSight and RDS

To connect my RDS instance to QuickSight, I created a new dataset in QuickSight that uses RDS as the datasource and then provided my credentials for the database to validate the connection.

This solution is risky because RDS instance is publicly accessible and anybody can access it which makes it vulnerable to access by anyone and steal the data.

## A better strategy

First, I made a new security group so that I can attach QuickSight to the security group and allow traffic from this group to access the RDS instance.

Next, I connected my new security group to QuickSight by adding a VPC connection in QuickSight. I specified the security group in the VPC connection setup page.

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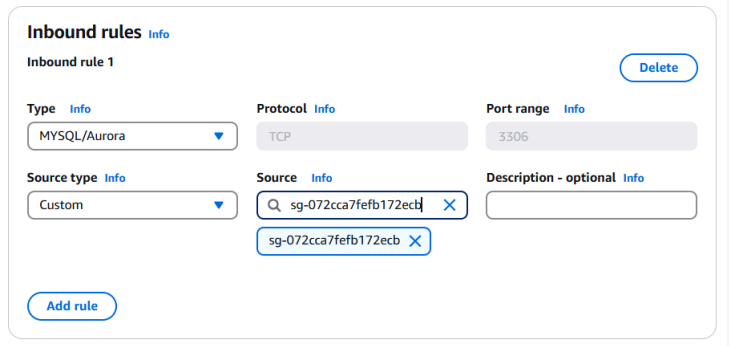
# Now to secure my RDS instance

To make my RDS instance secure I made it private and created a new security group with one inbound rule that only allowed access to QuickSight security group.

I made sure that my RDS instance could be accessed from QuickSight by creating an inbound rule in RDS security group that allowed traffic from QuickSight security group.



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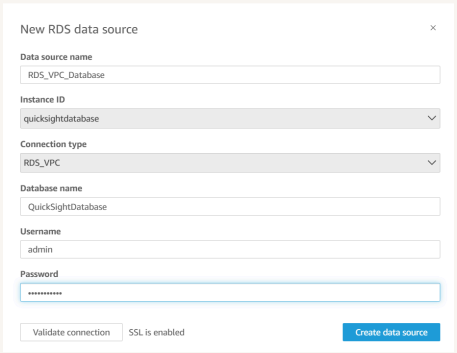
# Adding RDS as a data source for QuickSight




This data source is different from my initial data source because the RDS instance is private now and only accessible from QuickSight security group making the connection secure and less vulnerable.

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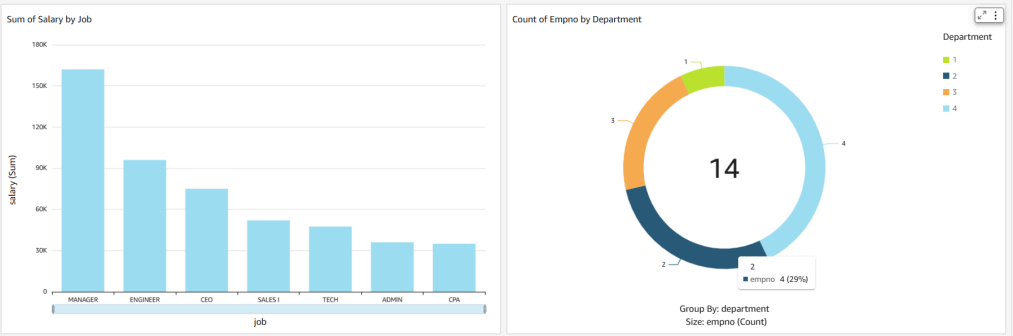



# Everyone should be in a job they love.

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