CS527 Project #1

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DEPARTMENT OF COMPUTER SCIENCE

SPRING 2020

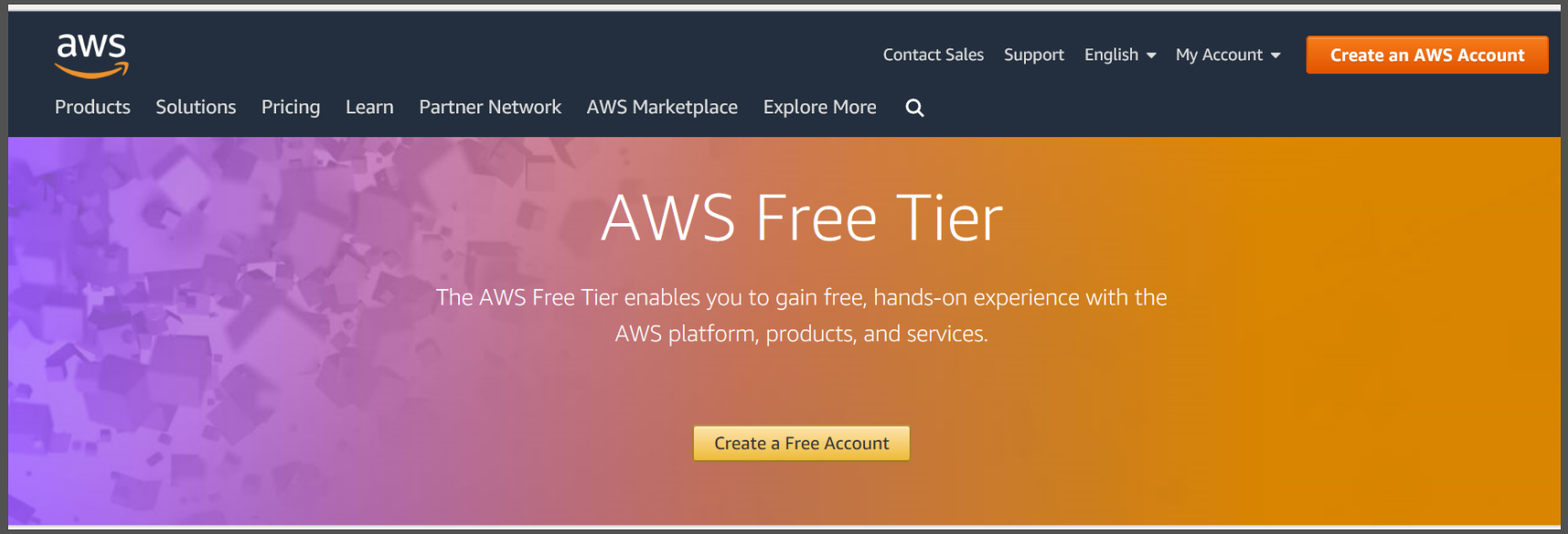
Build Your Team

1. Each team consists of 4-6 students.
2. Each team needs an administrator
3. Send your team info to Sakai.
4. Start Date: 2020-02-10
5. Presentation Date: 2020-03-02

Project – ETL (Extraction, Transformation and Loading)

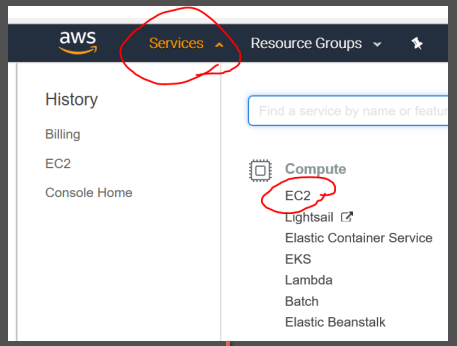
1. Create an AWS account (1)
2. Launch an EC2 micro instance (1)
3. Create a S3 Bucket (1)
4. Download Instacart (2)
5. Upload Instacart data to S3 (1)
6. Start a RDS (MySQL/ORACLE/SQL Server) Instance (1)
7. Export data from S3 to MySQL (3)
8. Start a Redshift Instance (1)
9. Export data from S3 to Redshift (3)

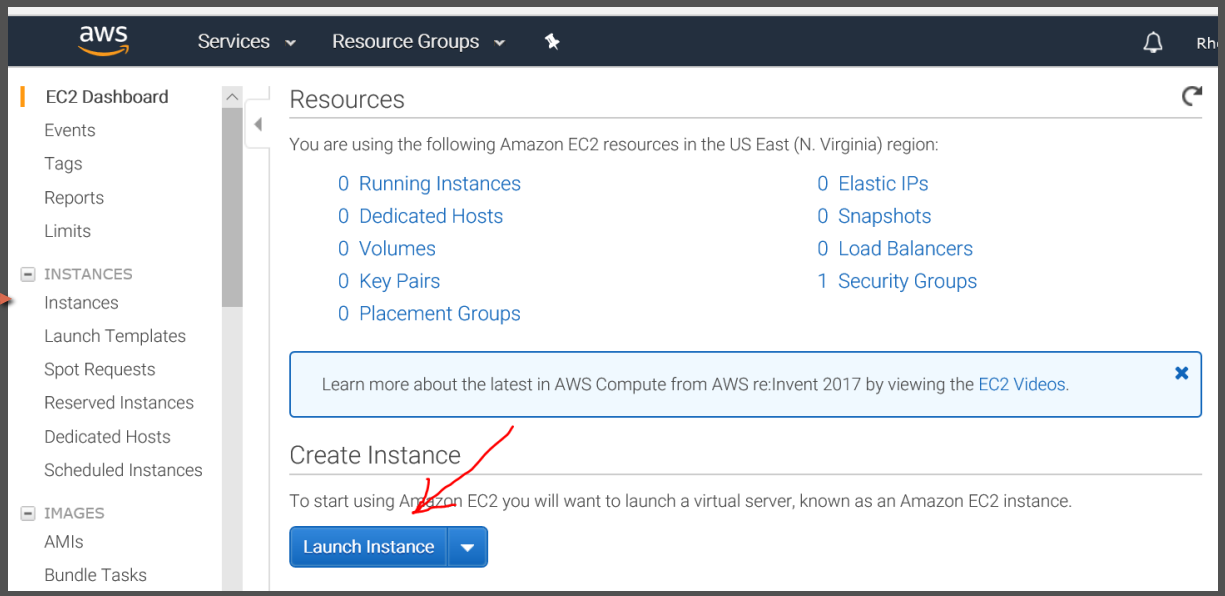
1. Create an AWS account



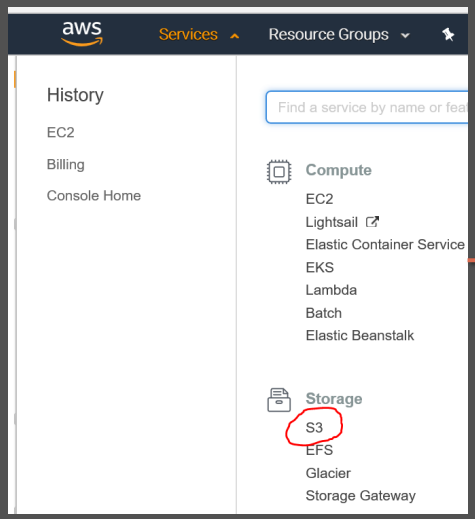
https://aws.amazon.com/free/

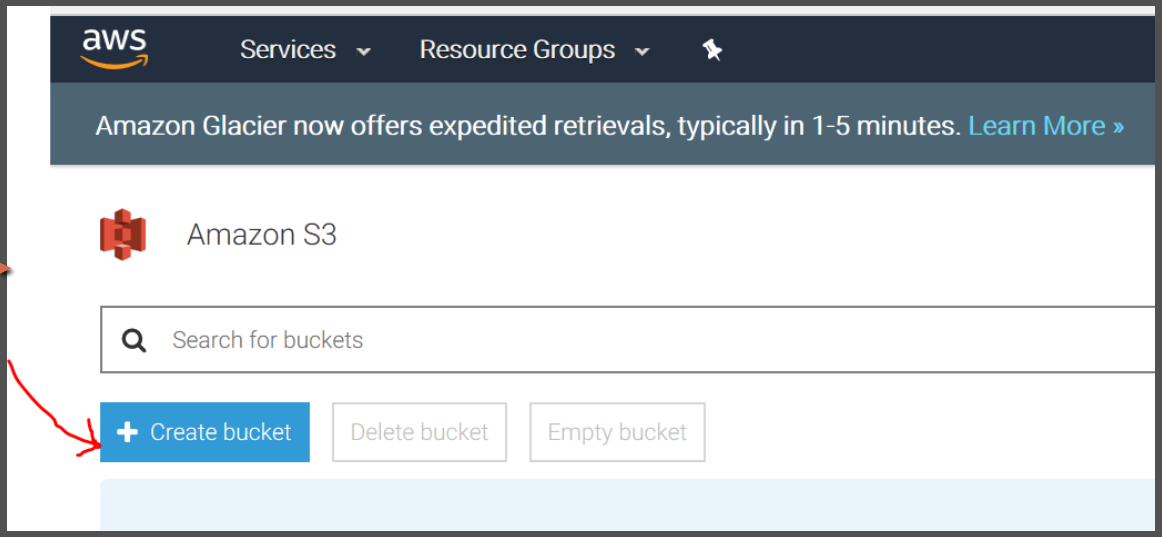
2. Launch an EC2 micro instance



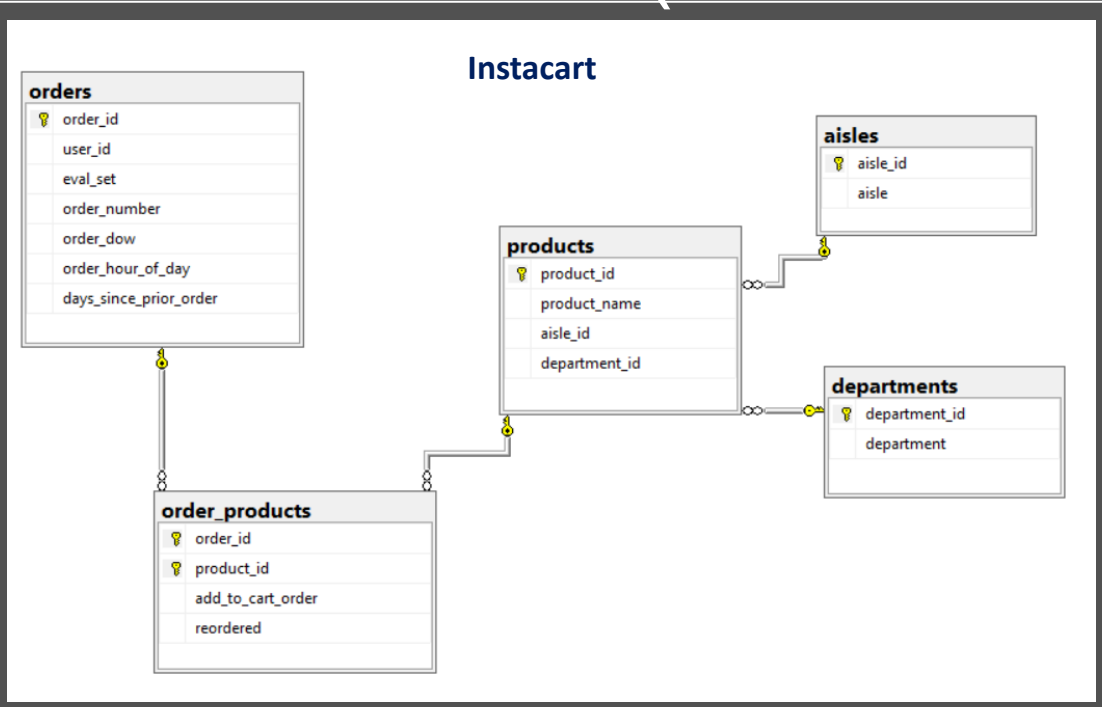


3. Create a S3 Bucket





4. Download Data (Instacart & GEO)

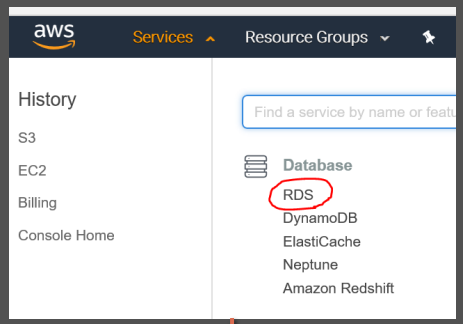


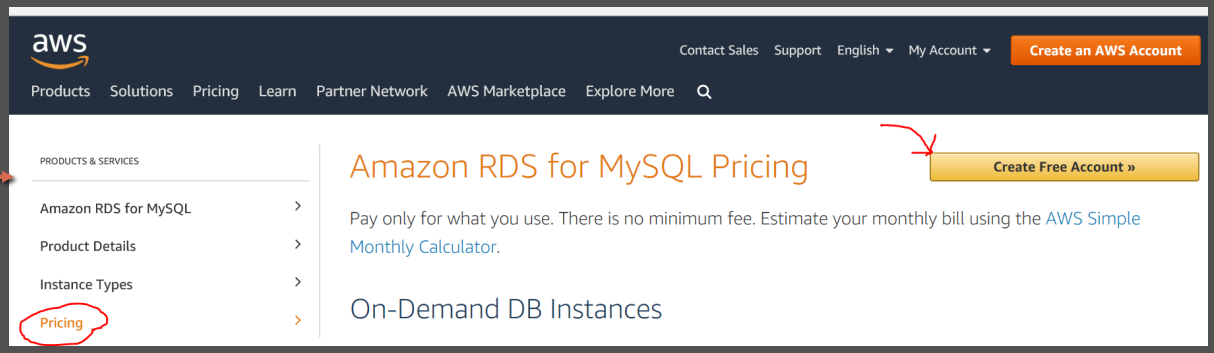
aisles.csv
departments.csv
order_products.csv
orders.csv
products.csv

Instacart.zip

5. Upload Instacart data to S3

6. Start a RDS Instance

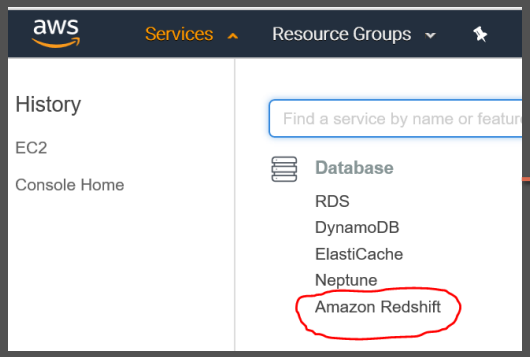


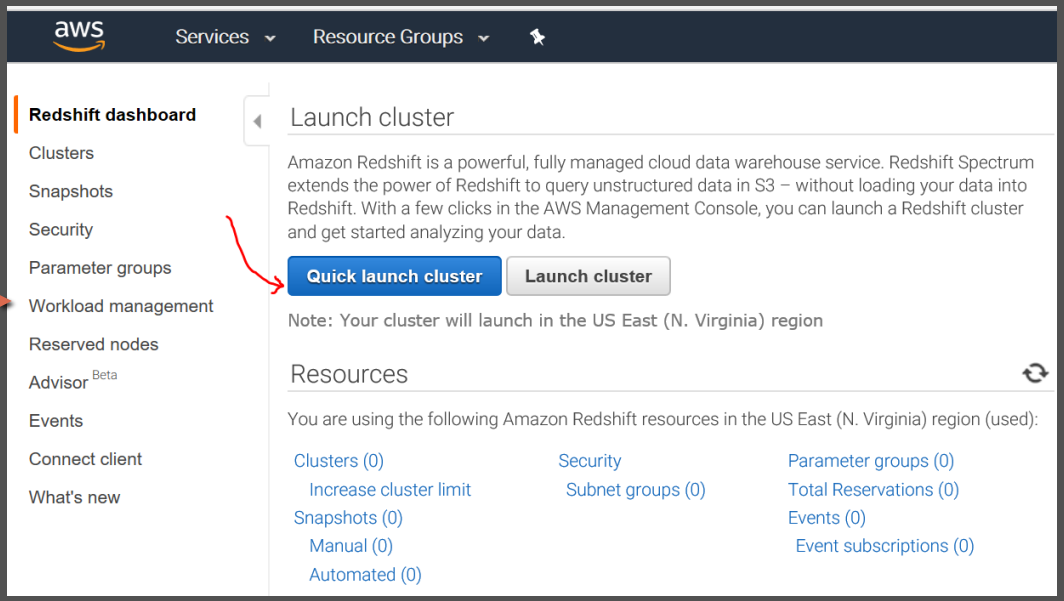


7. Export data from S3 to MySQL

- Use JDBC or ODBC Connectivity

8. Start a Redshift Instance





9. Export data from S3 to Redshift

- Use JDBC or ODBC Connectivity
- Use Redshift “COPY” function

COPY

Loads data into a table from data files or from an Amazon DynamoDB table. The files can be located in an Amazon Simple Storage Service (Amazon S3) bucket, an Amazon EMR cluster, or a remote host that is accessed using a Secure Shell (SSH) connection.

Project - Homework Assignments

- Practice the SQL scripts on the following website against your data on MySQL and Redshift.

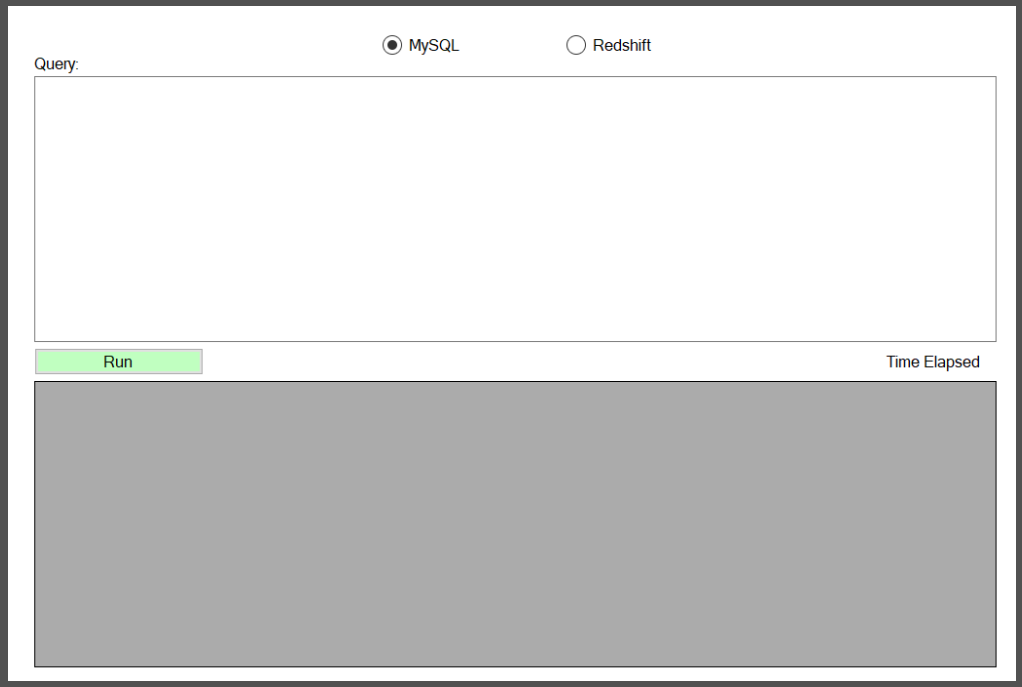
  SQL Tutorial > https://www.w3schools.com/sql/default.asp

- Students will be asked to write 10 different SQL codes (10)

Project - Web Application

- The web application should be able to connect to both MySQL and Redshift (4)
- The web app accepts SQL scripts as an input (1)
- The web app executes SQL scripts and shows the correct results (10)
- The web app shows the elapsed time (1)

Web Application



Project - Marking

Project	Team	Individual
ETL Process	14	
Homework Assignments		10
Web Application	16	
Total	**40**	

Project #2

mongoDB

alexa

Good Luck!