



Innovación con datos en la nube

Usando Machine Learning con la
base de datos autónoma de Oracle

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Oracle Machine Learning es una técnica poderosa para analizar datos, y en esta secuencia de workshop, le mostraremos cómo aplicarlo a los datos más valiosos de su organización. Si es un profesional de datos de Oracle pero no un científico de datos, este taller lo llevará a través de su primer proyecto de aprendizaje automático desde la preparación de datos hasta una implementación exitosa de un modelo integrado en una aplicación APEX.

Paso 1: Crear una instancia ADW

- 1) Ir al **Menu** arriba la izquierda, Seleccionar **Oracle Database** y después **Autonomouse Data Warehouse**.

The screenshot shows the Oracle Cloud interface. On the left, there is a navigation sidebar with various service categories: Home, Compute, Storage, Networking, Oracle Database (which is highlighted with an orange border), Databases, Analytics & AI, Developer Services, Identity & Security, Observability & Management, Hybrid, Migration, Governance and Administration, Marketplace, and OCI Classic Services. The main content area is titled "Oracle Database" and contains an "Overview" section. Under "Autonomous Database", the "Autonomous Data Warehouse" option is also highlighted with an orange border. Other listed options include Autonomous JSON Database and Autonomous Transaction Processing. To the right of the main content area, there is a "Related Services" section listing APEX Application Development, Database Management, Data Integration, Streaming, MySQL, and Oracle NoSQL Database. Below that is a "Help" section with links to Autonomous Databases, Bare Metal and VM DB Systems, Exadata Cloud@Customer, and All Oracle Database Documentation.

2) Seleccionar **Create Autonomous Database**

The screenshot shows the Oracle Cloud interface for Autonomous Databases. On the left, there's a sidebar with 'Autonomous Database' selected. The main area is titled 'Autonomous Databases in DEMO Compartment'. A blue rectangular box highlights the 'Create Autonomous Database' button at the top of the table. The table has columns: Display Name, State, Dedicated, OCPUs, Storage (TB), Workload Type, Autonomous Data Guard, and Created. Below the table, it says 'No items' and 'Displaying 0 Autonomous Databases'. On the left, under 'List Scope', there's a dropdown for 'Compartment' set to 'DEMO' (which is also highlighted with a red box). There are also 'Filters' sections for 'Workload Type' (set to 'Data Warehouse') and 'State' (set to 'Any state').

- 3) Selecionen el **Compartment** donde quieren la instancia (*pueden usar el que tienen por default si es su primera vez en OCI*). Para **Display Name** puede poner el nombre de **ADWLab** y para **Database name** pueden poner el nombre **OCRL**.

Create Autonomous Database

This screenshot shows the 'Create Autonomous Database' configuration form. It has a title 'Provide basic information for the Autonomous Database'. The 'Compartment' field is populated with a redacted value and is highlighted with a red box. The 'Display name' field contains 'ADWLab' and is also highlighted with a red box. The 'Database name' field contains 'OCRL' and is highlighted with a red box. Below the database name field, a note says: 'The name must contain only letters and numbers, starting with a letter. Maximum of 14 characters.'

- 4) En **Choose workload type** selecciona *Data Warehouse*. En **Choose a deployment type** seleccionen *Shared Infrastructure*.

The screenshot shows the 'Choose a workload type' section with four options: Data Warehouse, Transaction Processing, JSON, and APEX. The 'Data Warehouse' option is selected and highlighted with a red border. Below it, the 'Choose a deployment type' section shows 'Shared Infrastructure' selected and highlighted with a red border. A checkmark is visible next to the 'Run Autonomous Database on shared Exadata infrastructure.' description.

- 5) En **Configure the database**, **Choose database version**, **Storage (TB)** y **OCPU Count** déjenlo como se encuentra.

The screenshot shows the 'Configure the database' section. It includes an 'Always Free' toggle switch (disabled), a dropdown for 'Choose database version' set to '19c' (circled in red), an 'OCPU Count' input field set to '1' (circled in red), a 'Storage (TB)' input field set to '1' (circled in red), and an 'Auto scaling' checkbox checked. A note below the OCPU Count says: 'The number of CPU cores to enable. Available cores are subject to your tenancy's service limits.'

- 6) Pongan una contraseña. Esta contraseña es sumamente importante así que escríbanlo en algún lugar.

The screenshot shows the 'Create administrator credentials' section. It includes a 'Username' field set to 'ADMIN' (READ-ONLY), a 'Password' field containing '*****' (circled in red), a 'Confirm password' field containing '*****' (circled in red), and a note: 'The amount of storage to allocate.'

- 7) En la sección **Choose network Access**, para **Access Type** selecciona *Allow secure Access from everywhere*, y **Choose a license type** selecciona *License Included*. Después

as click en el botón **Create Autonomous Database**.

The screenshot shows the 'Choose network access' step of the 'Create Autonomous Database' wizard. It has two main sections: 'Access Type' and 'Choose a license type'.

Access Type:

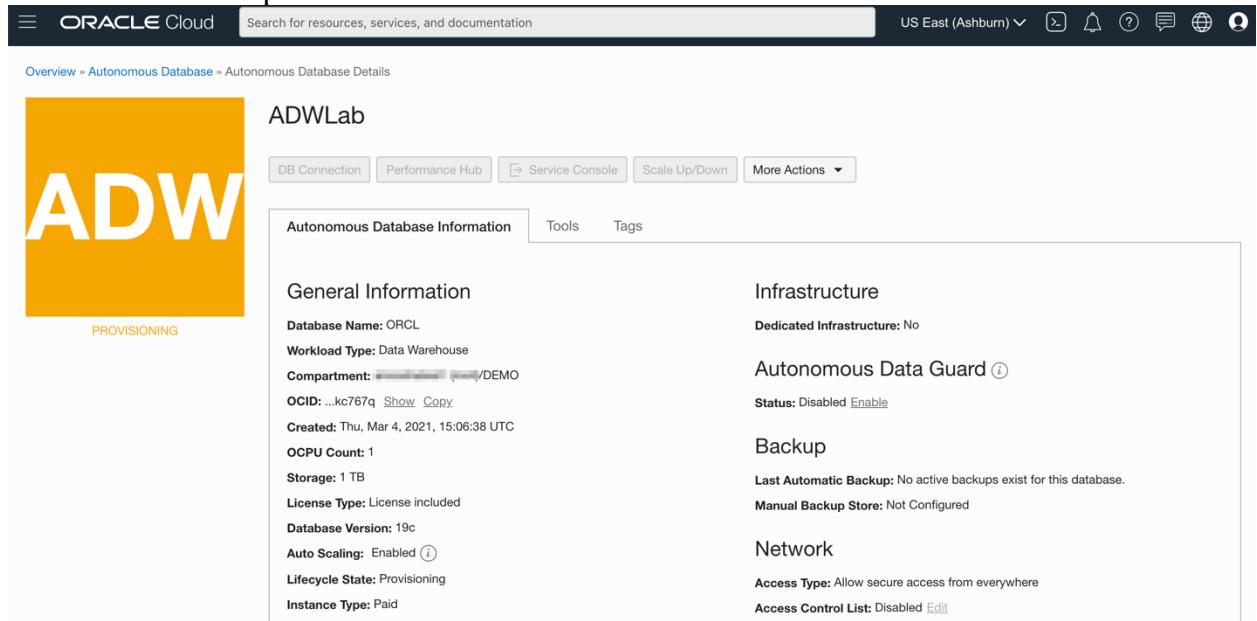
- Allow secure access from everywhere** (selected): You can restrict access to specific IP addresses and VCNs.
- Virtual cloud network**: Private access only, using a VCN.

Choose a license type:

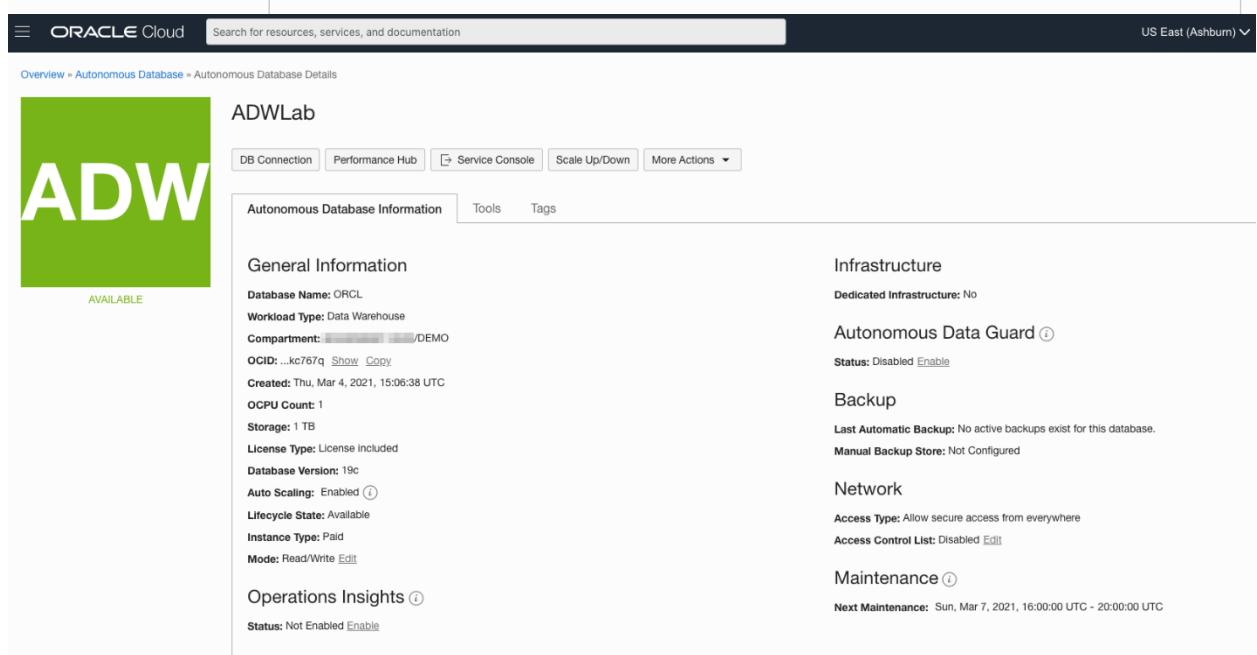
- Bring Your Own License (BYOL)**: Bring my organization's Oracle Database software licenses to the Database service. [Learn more](#).
- License Included** (selected): Subscribe to new Oracle Database software licenses and the Database service.

At the bottom are two buttons: **Create Autonomous Database** (highlighted with a red box) and **Cancel**.

8) La base de datos se provisionará.



The screenshot shows the Oracle Cloud interface for an Autonomous Database named 'ADWLab'. The status is 'PROVISIONING'. The General Information section includes details like Database Name: ORCL, Workload Type: Data Warehouse, and various configuration parameters. The Infrastructure section shows that Dedicated Infrastructure is set to No. The Network section indicates Access Type: Allow secure access from everywhere and Access Control List: Disabled. The Backup section notes that Last Automatic Backup and Manual Backup Store are both not configured. The Maintenance section shows the next maintenance scheduled for Sun, Mar 7, 2021, from 16:00:00 UTC to 20:00:00 UTC.



The second screenshot shows the same database after provisioning is complete. The status is now 'AVAILABLE'. The General Information, Infrastructure, Network, Backup, and Maintenance sections are identical to the first screenshot, indicating a successful provisioning process.

Paso 2: Crear un usuario para ML en ADW

- 1) Ir al **Menu** arriba la izquierda, Seleccionar **Oracle Database** y después **Autonomous Database Warehouse**.

The screenshot shows the Oracle Cloud interface with the Oracle Database service selected. The left sidebar has a search bar and links to various services: Home, Compute, Storage, Networking, Oracle Database (selected), Databases, Analytics & AI, Developer Services, Identity & Security, Observability & Management, Hybrid, Migration, Governance and Administration, Marketplace, and OCI Classic Services. The main content area is titled "Oracle Database" and "Overview". It lists "Autonomous Database" sub-options: Autonomous Data Warehouse (selected), Autonomous JSON Database, and Autonomous Transaction Processing. Below that is "Autonomous Dedicated Infrastructure" with options: Bare Metal, VM, and Exadata (Exadata at Oracle Cloud, Exadata Cloud@Customer), External Database, Data Safe, and GoldenGate. To the right is a "Related Services" section with links to APEX Application Development, Database Management, Data Integration, Streaming, MySQL, and Oracle NoSQL Database. At the bottom right are "Help" and "All Oracle Database Documentation" links.

The screenshot shows the "Autonomous Database" list page. The top navigation bar includes "Overview", "Autonomous Database", "Autonomous Databases", "US East (Ashburn)", and other account-related icons. The main title is "Autonomous Databases in DEMO Compartment". On the left, there are filters for "Autonomous Database", "Dedicated Infrastructure", "Autonomous Container Database", and "Autonomous Exadata Infrastructure". Below these are "List Scope" and "Compartment" dropdowns set to "DEMO". Under "Filters", there are dropdowns for "Workload Type" (set to "Data Warehouse") and "State" (set to "Any state"). The central table displays one database entry:

Create Autonomous Database								
Display Name	State	Dedicated	OCPUs	Storage (TB)	Workload Type	Autonomous Data Guard	Created	⋮
ADWLab	Available	No	1	1	Data Warehouse	Disabled	Thu, Mar 4, 2021, 15:06:38 UTC	⋮

At the bottom right of the table, it says "Displaying 1 Autonomous Database < 1 of 1 >".

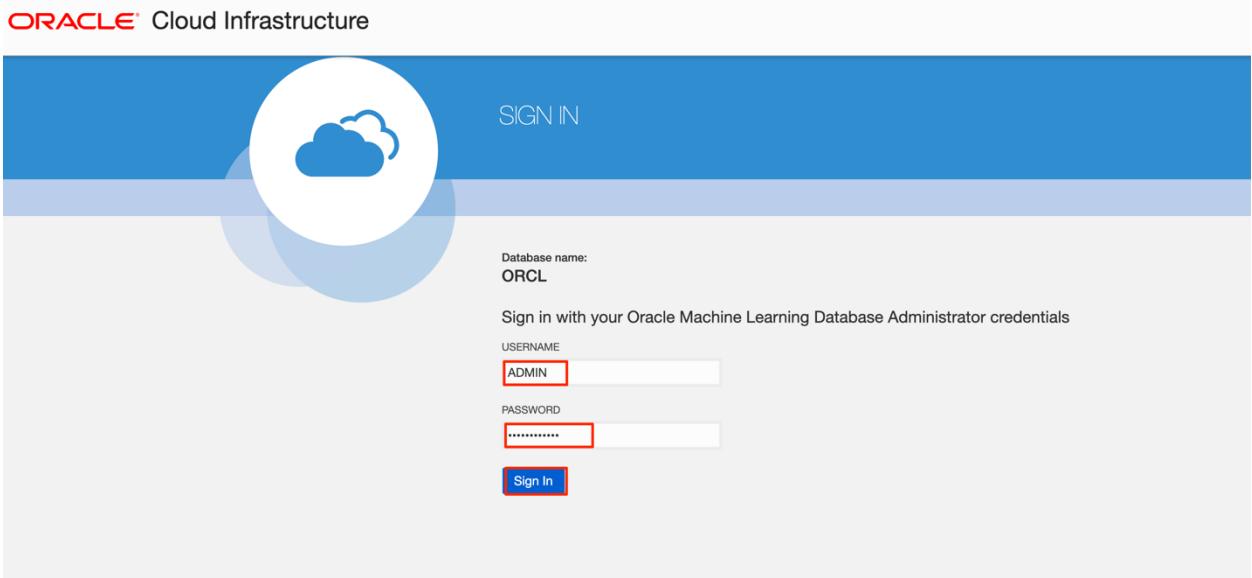
2) Seleccionar Tools

The screenshot shows the Oracle Cloud interface for an Autonomous Database named ORCL. The top navigation bar includes the Oracle Cloud logo, a search bar, and a dropdown for 'US East (Ashburn)'. The main content area is titled 'ADWLab' and displays 'Autonomous Database Information'. A tab labeled 'Tools' is highlighted with a red box. Other tabs include 'Autonomous Database Information' (selected), 'Tags', and 'Operations Insights'. The 'General Information' section lists details like Database Name (ORCL), Workload Type (Data Warehouse), Compartment (DEMO), OCID (.k0767q), Created (Thu, Mar 4, 2021, 15:06:38 UTC), OCPU Count (1), Storage (1 TB), License Type (License included), Database Version (19c), Auto Scaling (Enabled), Lifecycle State (Available), Instance Type (Paid), and Mode (Read/Write). The 'Infrastructure' section shows Dedicated Infrastructure (No), Autonomous Data Guard (Status: Disabled), Backup (Last Automatic Backup: No active backups exist), and Network (Access Type: Allow secure access from everywhere, Access Control List: Disabled). The 'Maintenance' section indicates the next maintenance window is Sun, Mar 7, 2021, 16:00:00 UTC - 20:00:00 UTC.

3) Seleccionar Open Oracle ML User Administration

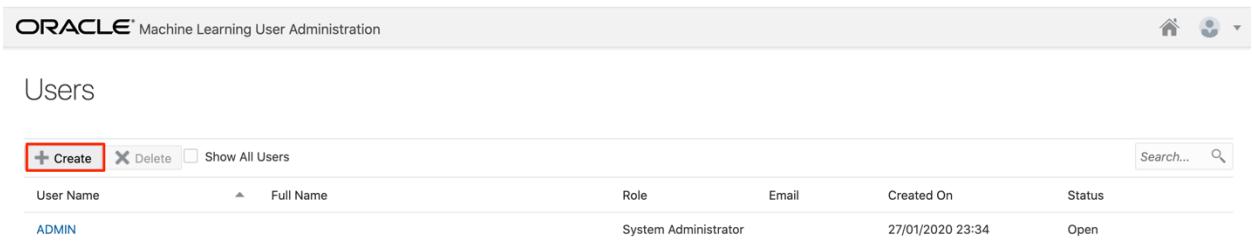
The screenshot shows the 'Tools' section of the ADWLab page. The top navigation bar is identical to the previous screenshot. The main content area is titled 'ADWLab' and shows 'Database administration and developer tools for Autonomous Database'. It features four sections: 'Database Actions' (Load, explore, transform, model, and catalog your data), 'Oracle Application Express' (A low-code development platform for building scalable, secure enterprise apps), 'Oracle ML User Administration' (A development environment for performing data analytics, data discovery, and data visualizations), and 'SODA Drivers' (Simple Oracle Document Access drivers for REST, Java, Node.js, Python, PL/SQL, and C). The 'Open Oracle ML User Administration' button in the 'Oracle ML User Administration' section is highlighted with a red box.

- 4) Les abrió una pantalla para sign in. Tienen que poner de Username **ADMIN** y de Password, la que escribieron cuando configuramos la instancia de ADW.



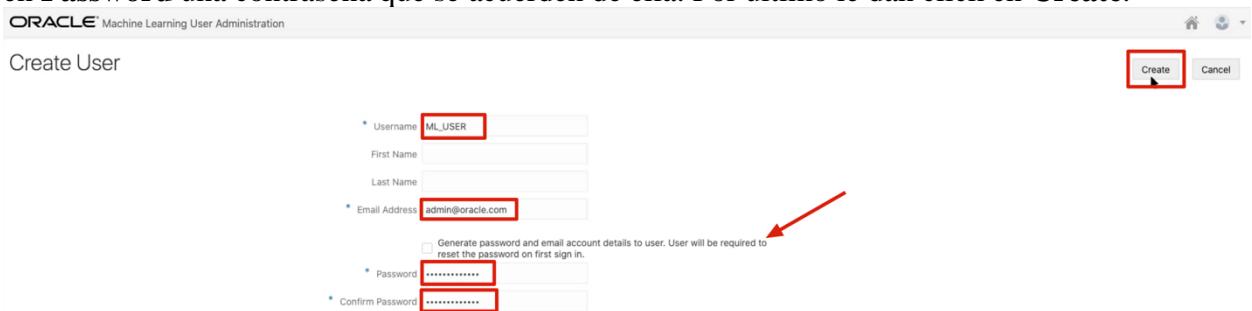
The screenshot shows the Oracle Cloud Infrastructure sign-in page. At the top, it says "SIGN IN". Below that, it says "Database name: ORCL". It asks to "Sign in with your Oracle Machine Learning Database Administrator credentials". There are fields for "USERNAME" (containing "ADMIN") and "PASSWORD" (redacted). A red box highlights the "Sign In" button at the bottom.

- 5) Da click en **Create**



The screenshot shows the "Users" page in the Oracle Machine Learning User Administration interface. At the top, there's a header with the Oracle logo and navigation icons. Below it, a table lists users. The first user listed is "ADMIN" with the role "System Administrator" and status "Open". The "Create" button at the top left is highlighted with a red box.

- 6) Para llenar la forma pongan como **Username ML_USER**, en **Email Address** pueden usar admin@oracle.com. **Deselecciónen el checkbox Generate Password**. Introduzcan en **Password** una contraseña que se acuerden de ella. Por ultimo le dan click en **Create**.



The screenshot shows the "Create User" dialog. It has fields for "Username" (ML_USER), "First Name", "Last Name", "Email Address" (admin@oracle.com), "Password" (redacted), and "Confirm Password" (redacted). A checkbox labeled "Generate password and email account details to user. User will be required to reset the password on first sign in." is present and has a red arrow pointing to it. The "Create" button at the top right is highlighted with a red box.

- 7) Se darán cuenta que se creo un usuario llamado ***ML_USER***.

The screenshot shows the Oracle Machine Learning User Administration interface. At the top, there's a header bar with the ORACLE logo and the text "Machine Learning User Administration". Below the header, a blue banner says "User Created". The main area is titled "Users". There's a toolbar with buttons for "+ Create", "Delete", and "Show All Users". On the right, there's a search bar with a magnifying glass icon. The main table has columns: "User Name", "Full Name", "Role", "Email", "Created On", and "Status". Two rows are visible: one for "ADMIN" (System Administrator, created on 27/01/2020 23:34, Open) and one for "ML_USER" (Developer, created on 04/03/2021 16:35, Open). A red arrow points to the "ML_USER" row.

User Name	Full Name	Role	Email	Created On	Status
ADMIN		System Administrator		27/01/2020 23:34	Open
ML_USER		Developer	admin@oracle.com	04/03/2021 16:35	Open

Paso 3: Otorgar privilegios al usuario ***ML_USER***

- 1) Ir al **Menu** arriba la izquierda, Seleccionar **Oracle Database** y después **Autonomouse Data Warehouse**.

The screenshot shows the Oracle Cloud interface with the Oracle Database service selected. The left sidebar has a search bar and links to various services: Home, Compute, Storage, Networking, Oracle Database (selected), Databases, Analytics & AI, Developer Services, Identity & Security, Observability & Management, Hybrid, Migration, Governance and Administration, Marketplace, and OCI Classic Services. The main content area is titled "Oracle Database" and "Overview". It lists "Autonomous Database" sub-options: Autonomous Data Warehouse (selected), Autonomous JSON Database, and Autonomous Transaction Processing. Below that is "Autonomous Dedicated Infrastructure" with options: Bare Metal, VM, and Exadata (Exadata at Oracle Cloud, Exadata Cloud@Customer), External Database, Data Safe, and GoldenGate. To the right, there's a "Related Services" section with links to APEX Application Development, Database Management, Data Integration, Streaming, MySQL, and Oracle NoSQL Database. A "Help" section links to Autonomous Databases, Bare Metal and VM DB Systems, Exadata Cloud@Customer, and All Oracle Database Documentation. The top navigation bar includes a search bar, user profile, and system status.

The screenshot shows the "Autonomous Database" list page. The title is "Autonomous Databases in DEMO Compartment". A "Create Autonomous Database" button is at the top. The table lists one database entry:

Display Name	State	Dedicated	OCPUs	Storage (TB)	Workload Type	Autonomous Data Guard	Created	Actions
ADWLab	Available	No	1	1	Data Warehouse	Disabled	Thu, Mar 4, 2021, 15:06:38 UTC	⋮

Below the table, it says "Displaying 1 Autonomous Database < 1 of 1 >". On the left, there are filters for "List Scope" (set to "Compartment DEMO"), "Filters" (Workload Type: Data Warehouse, State: Any state), and dropdowns for "Compartments" (DEMO) and "Regions" (US East (Ashburn)).

2) Seleccionar Tools

The screenshot shows the Oracle Cloud interface for an Autonomous Database named 'ADWLab'. The 'Tools' tab is highlighted with a red box. The page displays various database details such as General Information, Infrastructure, Autonomous Data Guard, Backup, Network, and Maintenance.

General Information

- Database Name: ORCL
- Workload Type: Data Warehouse
- Compartment: [REDACTED]/DEMO
- OCID: .k0767q [Show](#) [Copy](#)
- Created: Thu, Mar 4, 2021, 15:06:38 UTC
- OCPU Count: 1
- Storage: 1 TB
- License Type: License included
- Database Version: 19c
- Auto Scaling: Enabled [\(i\)](#)
- Lifecycle State: Available
- Instance Type: Paid
- Mode: Read/Write [Edit](#)

Operations Insights [\(i\)](#)

Status: Not Enabled [Enable](#)

Infrastructure

Dedicated Infrastructure: No

Autonomous Data Guard [\(i\)](#)

Status: Disabled [Enable](#)

Backup

Last Automatic Backup: No active backups exist for this database.

Manual Backup Store: Not Configured

Network

Access Type: Allow secure access from everywhere

Access Control List: Disabled [Edit](#)

Maintenance [\(i\)](#)

Next Maintenance: Sun, Mar 7, 2021, 16:00:00 UTC - 20:00:00 UTC

3) Seleccionar Open Database Actions

The screenshot shows the Oracle Cloud interface for the same Autonomous Database 'ADWLab'. The 'Tools' tab is highlighted with a red box. The page displays sections for Database Actions, Oracle Application Express, Oracle ML User Administration, and SODA Drivers. The 'Open Database Actions' button in the Database Actions section is highlighted with a red box.

Database Actions

Load, explore, transform, model, and catalog your data. Use an SQL worksheet, build REST interfaces and low-code apps, manage users and connections, build and apply machine learning models. [Learn more](#).

[Open Database Actions](#)

Oracle Application Express

Oracle Application Express (APEX) is a low-code development platform that enables you to build scalable, secure enterprise apps that can be deployed anywhere. [Learn more](#).

[Open APEX](#)

Oracle ML User Administration

Oracle Machine Learning is a development environment that uses a web-based interface to enable you to perform data analytics, data discovery and data visualizations. [Learn more](#).

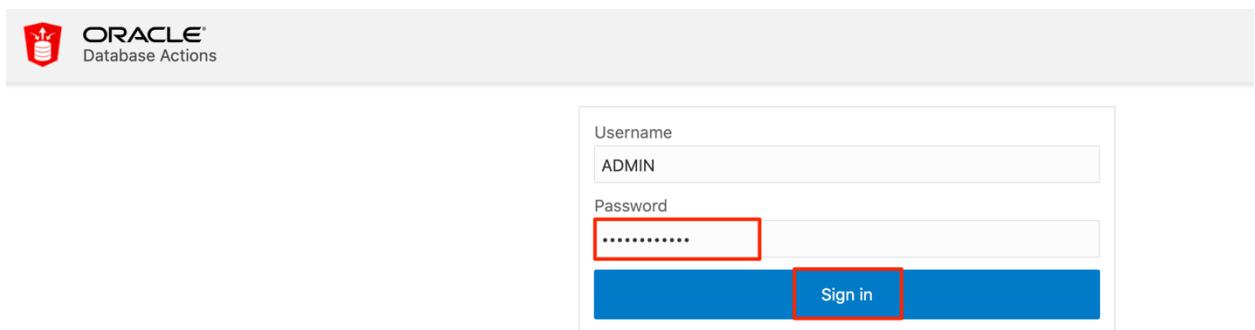
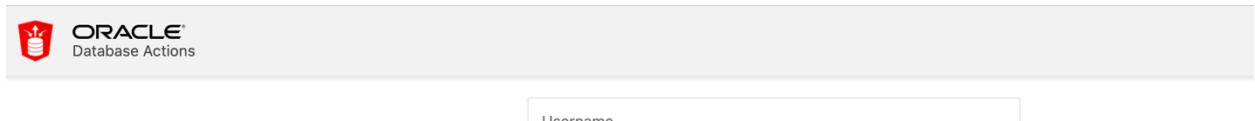
[Open Oracle ML User Administration](#)

SODA Drivers

Simple Oracle Document Access (SODA) is a set of APIs that let you work with JSON documents managed by the Oracle Database without needing to use SQL. SODA drivers are available for REST, Java, Node.js, Python, PL/SQL, and C. [Learn more](#).

[Download SODA Drivers](#)

4) Les abrió una pantalla para sign in. Tienen que poner de Username **ADMIN** y de Password, la que escribieron cuando configuramos la instancia de ADW.



5) De las opciones que se muestra, den click en **SQL**

Development

- SQL** Execute queries and scripts, and create database objects
- REST Deploy REST APIs for your database
- APEX Build web applications rapidly

Data Tools

- DATA MODELER Create relational diagrams for database objects
- DATA LOAD Load or access data from local files or remote databases
- CATALOG Understand data dependencies and the impact of changes
- DATA INSIGHTS Discover anomalies, outliers and hidden patterns in your data
- BUSINESS MODELS Create business models for performance and analysis

Administration

- DATABASE USERS Create, edit, and REST enable database users

Getting Started

- RESTful Web Services** Deploy REST APIs for your Oracle database - GET, PUT, POST and DELETE securely using HTTPS with your Oracle data and stored procedures.
- Load Data** Populate existing tables or build new ones from local files (Avro, JSON, XML, CSV, or Excel) using our data loading wizard.
- JSON** Create collections, documents, add, edit, delete, and browse your documents, and visualize your JSON Data Guides.
- Available On-Premises** SQL Developer Web is now available for your On-Premises Oracle Databases too!

Need Help?

- Documentation
- SQL Developer Community Forum
- SQL Developer on Twitter

6) Para otorgar permisos a ML_USER utilizar SQL Developer Web es necesario correr el siguiente query.

```

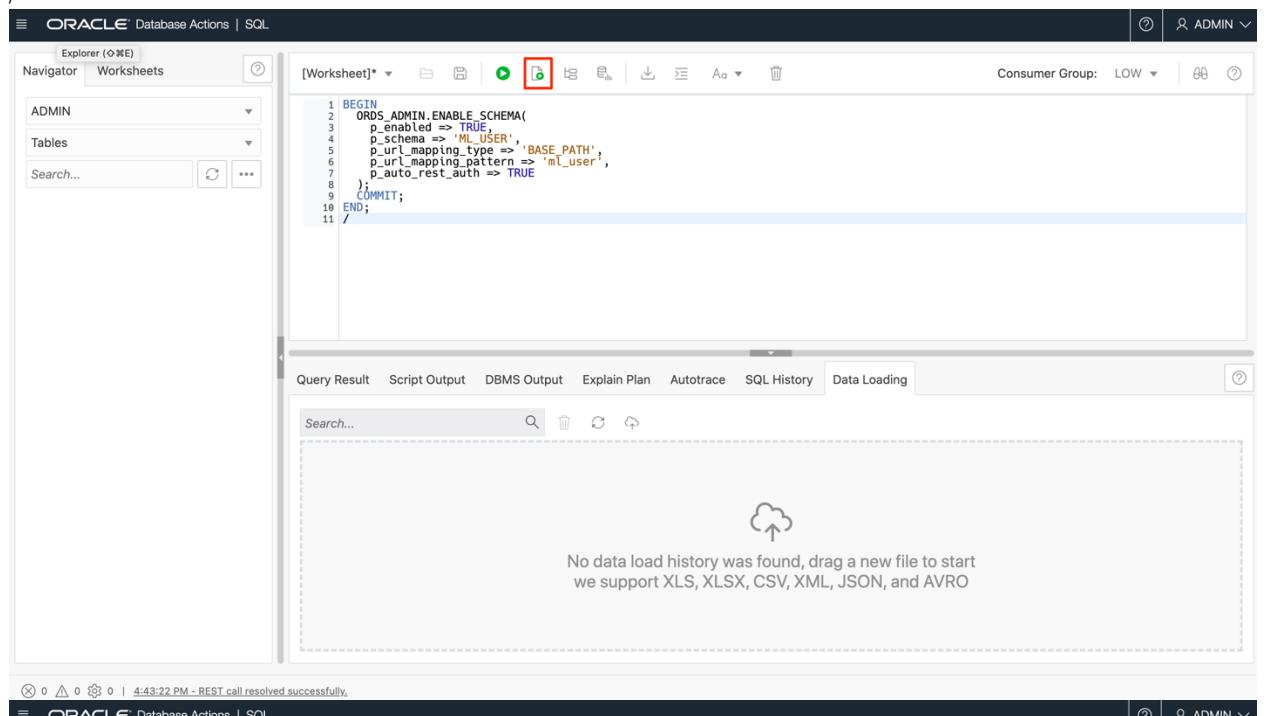
BEGIN
ORDS_ADMIN.ENABLE_SCHEMA(
p_enabled => TRUE,
p_schema => 'ML_USER',
p_url_mapping_type => 'BASE_PATH',

```

```

p_url_mapping_pattern => 'ml_user',
p_auto_rest_auth => TRUE
);
COMMIT;
END;
/

```



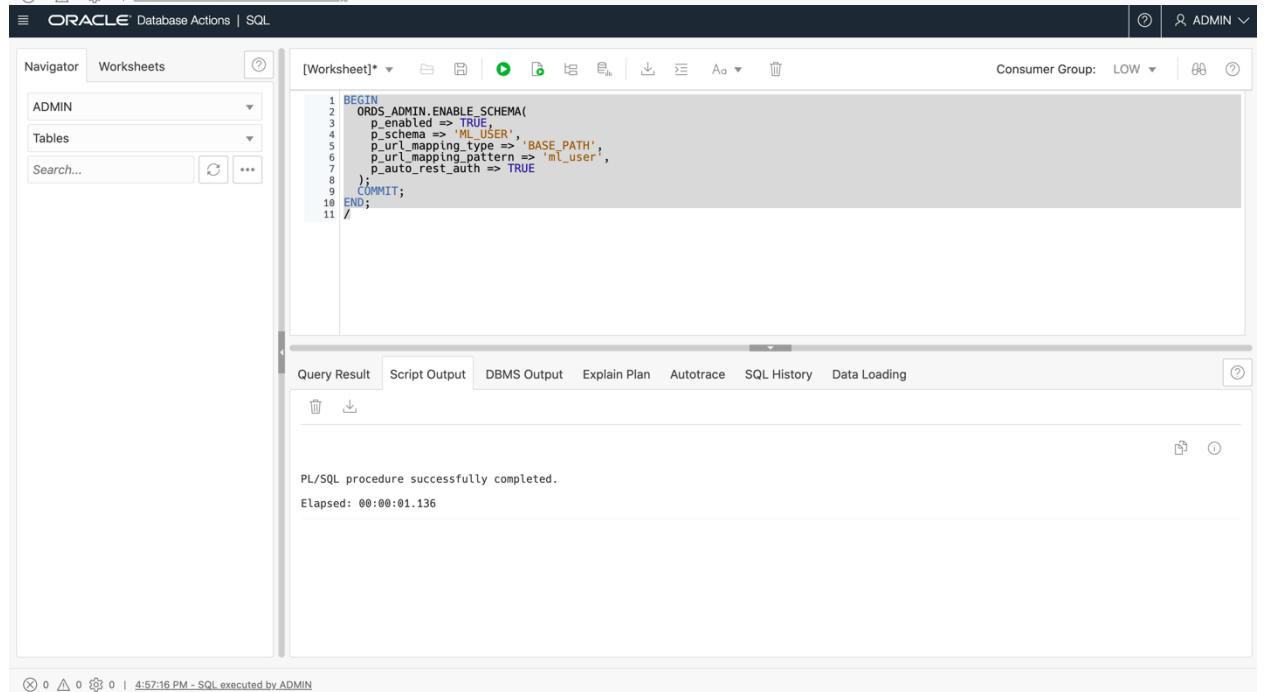
The screenshot shows the Oracle Database Actions interface. In the top navigation bar, it says "ORACLE Database Actions | SQL" and "ADMIN". The main area is a "Worksheet" tab. On the left, there's a "Navigator" pane showing "ADMIN" selected under "Tables". The central workspace contains the following PL/SQL code:

```

1 BEGIN
2   ORDS_ADMIN.ENABLE_SCHEMA(
3     p_enabled => TRUE,
4     p_schema => 'ML_USER',
5     p_url_mapping_type => 'BASE_PATH',
6     p_url_mapping_pattern => 'ml_user',
7     p_auto_rest_auth => TRUE
8   );
9   COMMIT;
10 END;
11 /

```

Below the code, the "Data Loading" tab is active. It displays a message: "No data load history was found, drag a new file to start we support XLS, XLSX, CSV, XML, JSON, and AVRO". At the bottom of the screen, a status bar shows "4:43:22 PM - REST call resolved successfully."



This screenshot shows the same Oracle Database Actions interface after the procedure has been executed. The status bar at the bottom now displays "PL/SQL procedure successfully completed." and "Elapsed: 00:00:01.136". The rest of the interface is identical to the previous screenshot.

- 7) Para otorgar privilegios de almacenamiento a ML_USER se requiere correr el siguiente query:

```
alter user ml_user quota 100m on data;
```

The screenshot shows the Oracle Database Actions interface. In the top navigation bar, 'ORACLE Database Actions | SQL' is selected. On the left, the 'Navigator' pane shows 'ADMIN' and 'Tables'. The main area is a 'Worksheet' titled '[Worksheet]*'. A red box highlights the green 'Run' button in the toolbar above the code editor. The code editor contains the command: '1 alter user ml_user quota 100m on data;'. Below the code editor, the 'Query Result' tab is active, showing the output: 'PL/SQL procedure successfully completed.' and 'Elapsed: 00:00:00.317'. The 'User ML_USER altered.' message is also displayed, along with its elapsed time: 'Elapsed: 00:00:00.028'. At the bottom of the worksheet, it says '6:30:41 AM - SQL executed by ADMIN'.

Paso 4: Descargar los file necesarios para el taller

- 1) Descargar los files del siguiente link:
<https://objectstorage.us-ashburn-1.oraclecloud.com/n/natdcshjumpstartprod/b/adbml/o/install.zip>
- 2) Realizar un unzip del file

The screenshot shows a Firefox browser window. The main content area displays a page titled 'Steps' with a section 'Upload Credit Score' and a button '- Collapse All Steps'. Below this, there is a list item '- STEP 1: Download files used' with a 'Click to Download' link and a download link 'install.zip'. To the right of the browser, a 'Opening install.zip' dialog box is open. The dialog box contains the following text:
You have chosen to open:
install.zip
which is: Zip archive (10.1 MB)
from: https://oracle.github.io
What should Firefox do with this file?
 Open with Archive Manager (default)
 Save File
 Do this automatically for files like this from now on.
At the bottom right of the dialog box, there are 'Cancel' and 'OK' buttons. A red arrow points from the 'Save File' radio button towards the 'OK' button.

Paso 5: Upload los archivos a ML_USER

- 1) Ir al **Menu** arriba la izquierda, Seleccionar **Oracle Database** y después **Autonomouse Data Warehouse**.

The screenshot shows the Oracle Cloud interface. On the left, there is a navigation sidebar with various service categories. The 'Oracle Database' category is highlighted with an orange box. Under 'Oracle Database', the 'Autonomous Data Warehouse' option is also highlighted with an orange box. The main content area is titled 'Oracle Database' and contains sections like 'Overview', 'Autonomous Database' (with 'Autonomous Data Warehouse' selected), 'Autonomous Dedicated Infrastructure', and 'Help'. A search bar at the top and bottom of the page is visible.

The screenshot shows the 'Create Autonomous Database' page. The 'Display Name' field is set to 'ADWLab'. The table below shows the configuration details:

Display Name	State	Dedicated	OCPUs	Storage (TB)	Workload Type	Autonomous Data Guard	Created
ADWLab	Available	No	1	1	Data Warehouse	Disabled	Thu, Mar 4, 2021, 15:06:38 UTC

Below the table, it says 'Displaying 1 Autonomous Database < 1 of 1 >'. The page also includes sections for 'List Scope' (Compartment: DEMO), 'Filters' (Workload Type: Data Warehouse, State: Any state), and a 'Create Autonomous Database' button.

2) Seleccionar Tools

The screenshot shows the Oracle Cloud interface for an Autonomous Database named 'ADWLab'. The 'Tools' tab is highlighted with a red box. The page displays various database details such as General Information, Infrastructure, Autonomous Data Guard, Backup, Network, and Maintenance.

General Information

- Database Name: ORCL
- Workload Type: Data Warehouse
- Compartment: [REDACTED]/DEMO
- OCID: .k0t67q [Show Copy]
- Created: Thu, Mar 4, 2021, 15:06:38 UTC
- OCPU Count: 1
- Storage: 1 TB
- License Type: License included
- Database Version: 19c
- Auto Scaling: Enabled ⓘ
- Lifecycle State: Available
- Instance Type: Paid
- Mode: Read/Write ⓘ

Operations Insights ⓘ

Status: Not Enabled ⓘ

Infrastructure

Dedicated Infrastructure: No

Autonomous Data Guard ⓘ

Status: Disabled ⓘ

Backup

Last Automatic Backup: No active backups exist for this database.

Manual Backup Store: Not Configured

Network

Access Type: Allow secure access from everywhere

Access Control List: Disabled ⓘ

Maintenance ⓘ

Next Maintenance: Sun, Mar 7, 2021, 16:00:00 UTC - 20:00:00 UTC

3) Seleccionar Open Database Actions

The screenshot shows the Oracle Cloud interface for an Autonomous Database named 'ADWLab'. The 'Tools' tab is highlighted with a red box. The 'Database Actions' section is expanded, showing options like 'Open Database Actions' (which is also highlighted with a red box), 'Oracle Application Express', 'Oracle ML User Administration', and 'SODA Drivers'.

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[Download SODA Drivers](#)

4) Les abrió una pantalla para sign in. Tienen que poner de Username *ML_USER* y de Password, la que escribieron cuando crearon el usuario de *ML_USER*.

ORACLE Database Actions

Username
ML_USER

Next

ORACLE Database Actions

Username
ML_USER

Password
.....

Sign in

5) Seleccionar Data Load

ORACLE Database Actions

ML_USER

Development		Data Tools	Getting Started
SQL Execute queries and scripts, and create database objects	DATA MODELER Create relational diagrams for database objects	DATA LOAD Load or access data from local files or remote databases	RESTful Web Services Deploy REST APIs for your Oracle database - GET, PUT, POST and DELETE securely using HTTPS with your Oracle data and stored procedures.
REST Deploy REST APIs for your database	JSON Manage your JSON Document Database	DATA INSIGHTS Discover anomalies, outliers and hidden patterns in your data	Load Data Populate existing tables or build new ones from local files (Avro, JSON, XML, CSV, or Excel) using our data loading wizard.
		BUSINESS MODELS Create business models for performance and analysis	JSON Create collections, documents, add, edit, delete, and browse your documents, and visualize your JSON Data Guides.
			Available On-Premises SQL Developer Web is now available for your On-Premises Oracle Databases too!
			Need Help? Documentation SQL Developer Community Forum SQL Developer on Twitter

⊗ 0 ⚡ 0 ⚡ 0 | 6:27:57 PM - REST call resolved successfully.

- 6) Dejar las opciones ya seleccionadas **Load Data** y **Local File** y hacer click en **Next**.

The screenshot shows the Oracle Database Actions | Data Load interface. On the left, under 'What do you want to do with your data?', the 'LOAD DATA' option is selected and highlighted with a red box. Below it, under 'Where is your data?', the 'LOCAL FILE' option is also selected and highlighted with a red box. On the right side, there is a sidebar titled 'Getting Started' with links like 'Setup an Ingest Job', 'Explore', 'Manage', and 'Need Help?'. A blue 'Next' button is located at the bottom right of the main content area.

- 7) Arrastrar a la pantalla el archivo **credit_scoring_100k.csv** que se encuentra dentro de los files que se realizaron unzip.

The screenshot shows the Oracle Database Actions | Local Files interface. It features a central area with a cloud icon and the text 'Drag and drop here to upload' followed by 'OR' and a 'Select Files' button, which is highlighted with a red box. At the bottom of the screen, there is a message indicating a successful REST call resolution.

- 8) Cuando se termine de cargar el archivo. Se tiene que dar click en el botón de **Start** y después en el botón de **Run**. A partir de aquí los archivos empezaran a subirse.

The screenshot shows the Oracle Database Actions Local Files interface. At the top, there is a navigation bar with the Oracle logo, 'Database Actions | Local Files', a search bar with 'ML_USER', and a help icon. Below the navigation bar, the main area is titled 'Data Load / Local Files'. It displays a configuration panel with the following details:

- Source:** credit_scoring_100k.csv (48M)
- Target:** CREDIT_SCORING_100K

Below this panel, a message indicates a successful REST call resolution: '⊗ 0 ▲ 0 ⚡ 0 | 6:41:54 PM - REST call resolved successfully.'

At the bottom of the interface, a modal dialog box titled 'Run Data Load Job' is displayed, asking 'Do you wish to run the data load job?'. It contains two buttons: 'Run' (highlighted with a red box) and 'Cancel'.

- 9) Cuando este cargando el archivo estar con un status de *Running* y cuando termine se mostrara como *Complete*.

☰ ORACLE Database Actions | Local Files

Data Load / Local Files

Status: Running (0/1) - Total time 00:20

Source:
10.0X credit_scoring_100k.csv (48M)
00:17

Target:
CREDIT_SCORING_100K

ⓧ 0 ⚠ 0 ⚡ 1 | 6:48:04 PM - Importing credit_scoring_100k.csv data to ML_USER.CREDIT_SCORING_100K

☰ ORACLE Database Actions | Local Files

Data Load / Local Files

Status: Completed (1/1) - Total time 01:04

Source:
✓ credit_scoring_100k.csv (48M)

Target:
CREDIT_SCORING_100K

Done

ⓧ 0 ⚠ 0 ⚡ 0 | 6:49:22 PM - REST call resolved successfully.

10) Despues en tienen que hacer click en el menú de arriba la izquierda, en la sección de **Developmenet**, tienen que dar click en **SQL**.

The screenshot shows the Oracle Data Load / Local Files interface. At the top, it says "Status: Completed (1/1) - Total time 01:04". Below that, under "Source:", there is a green checkmark next to "credit_scoring_100k.csv (48M)". Under "Target:", it shows "CREDIT_SCORING_100K". A blue "Done" button is visible at the bottom right.

11) Se muestra el SQL Web Developer con la tabla creada exitosamente.

The screenshot shows the Oracle SQL Web Developer interface. In the left sidebar's "Navigator" pane, under "Tables", there is a red box around the entry "CREDIT_SCORING_100K". The main workspace shows a "Data Loading" tab with a message: "No data load history was found, drag a new file to start we support XLS, XLSX, CSV, XML, and AVRO".

Paso 6: Crear un ML Notebook

- 1) Ir al **Menu** arriba la izquierda, Seleccionar **Oracle Database** y despues **Autonomouse Data Warehouse**.

The screenshot shows the Oracle Cloud interface with the Oracle Database service selected. The left sidebar has a search bar and links to various services: Home, Compute, Storage, Networking, Oracle Database (selected), Databases, Analytics & AI, Developer Services, Identity & Security, Observability & Management, Hybrid, Migration, Governance and Administration, Marketplace, and OCI Classic Services. The main content area is titled "Oracle Database" and "Overview". It lists "Autonomous Database" sub-options: Autonomous Data Warehouse (selected), Autonomous JSON Database, and Autonomous Transaction Processing. Below that is "Autonomous Dedicated Infrastructure" with options: Bare Metal, VM, and Exadata (Exadata at Oracle Cloud, Exadata Cloud@Customer), External Database, Data Safe, and GoldenGate. To the right is a "Related Services" section with links to APEX Application Development, Database Management, Data Integration, Streaming, MySQL, and Oracle NoSQL Database. There's also a "Help" section with links to Autonomous Databases, Bare Metal and VM DB Systems, Exadata Cloud@Customer, and All Oracle Database Documentation.

The screenshot shows the "Autonomous Database" list page. The top navigation bar includes "Overview", "Autonomous Database", "Autonomous Databases", and "US East (Ashburn)". The main content area is titled "Autonomous Databases in DEMO Compartment". It features a "Create Autonomous Database" button and a table listing one database entry:

Display Name	State	Dedicated	OCPUs	Storage (TB)	Workload Type	Autonomous Data Guard	Created
ADWLab	Available	No	1	1	Data Warehouse	Disabled	Thu, Mar 4, 2021, 15:06:38 UTC

Below the table, a message says "Displaying 1 Autonomous Database < 1 of 1 >". On the left, there are filters for "List Scope" (set to "Compartments") and "Compartment" (set to "DEMO"). There are also "Filters" sections for "Workload Type" (set to "Data Warehouse") and "State" (set to "Any state").

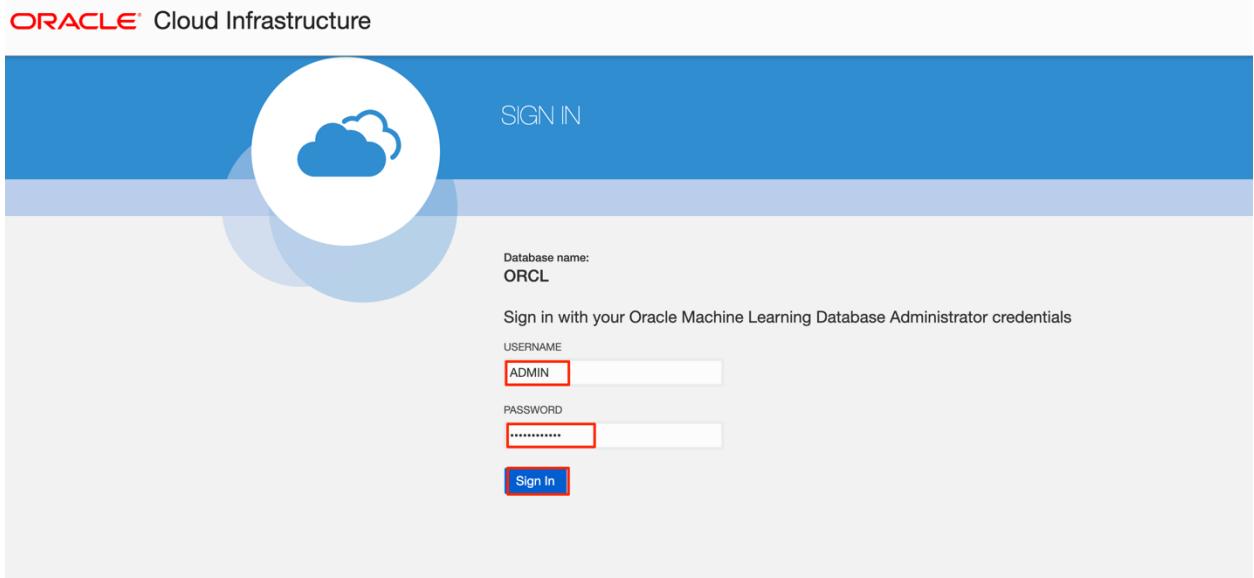
2) Seleccionar Tools

The screenshot shows the Oracle Cloud interface for an Autonomous Database named ORCL. The top navigation bar includes the Oracle Cloud logo, a search bar, and a dropdown for 'US East (Ashburn)'. The main content area is titled 'ADWLab' and displays 'Autonomous Database Information'. A navigation bar at the top of this section includes 'DB Connection', 'Performance Hub', 'Service Console', 'Scale Up/Down', and 'More Actions'. The 'Tools' tab is highlighted with a red box. Below this, there are sections for 'General Information' and 'Operations Insights'. To the right, there are sections for 'Infrastructure', 'Autonomous Data Guard', 'Backup', 'Network', and 'Maintenance'. Each section contains various status and configuration details.

3) Seleccionar Open Oracle ML User Administration

The screenshot shows the 'Tools' section of the ADWLab interface. It features a large green 'ADW' logo on the left. The main content area has tabs for 'Autonomous Database Information' and 'Tools', with 'Tools' being the active tab. Below the tabs, there's a general description: 'Database administration and developer tools for Autonomous Database'. The page is divided into several boxes: 'Database Actions' (with a button 'Open Database Actions'), 'Oracle Application Express' (with a button 'Open APEX'), 'Oracle ML User Administration' (with a button 'Open Oracle ML User Administration' highlighted with a red box), and 'SODA Drivers' (with a button 'Download SODA Drivers').

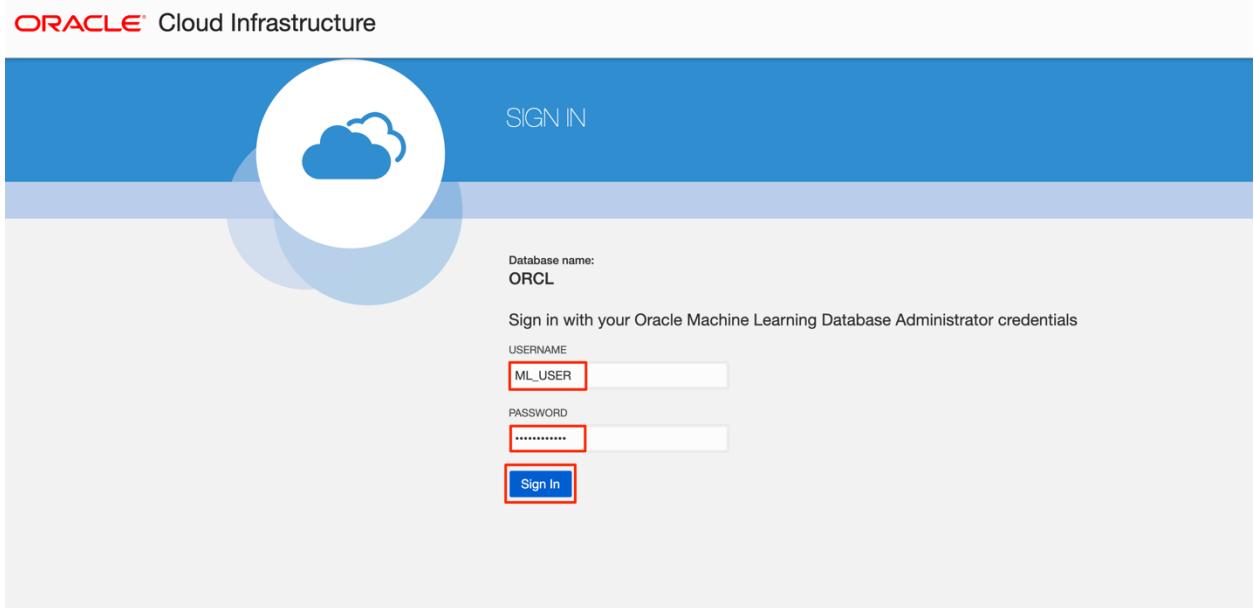
- 4) Les abrió una pantalla para sign in. Tienen que poner de Username **ADMIN** y de Password, la que escribieron cuando configuramos la instancia de ADW.



- 5) Dar click en el **Home Icon**, que se muestra en al parte superior derecha.

The image shows the Oracle Machine Learning User Administration interface. At the top, it says "ORACLE Machine Learning User Administration". On the right, there are icons for Home (red), User, and More. A blue header bar says "User Created". Below it, a section titled "Users" shows a table of users. The table has columns: User Name, Full Name, Role, Email, Created On, and Status. Two users are listed: "ADMIN" (System Administrator, created 27/01/2020 23:34, Open) and "ML_USER" (Developer, created 04/03/2021 16:35, Open). There are buttons for "+ Create", "Delete", and "Show All Users". A search bar is at the top right.

- 6) Se abrirá una pagina para realizar Login, entrar con las credenciales de ML_USER que usamos anteriormente.



- 7) Dar click en Example.

The screenshot shows the Oracle Machine Learning dashboard. At the top, there is a navigation bar with the text "ML_USER Project [ML_USER Works...]" and "ML_USER". On the left, there is a sidebar with sections like "How Do I?", "Quick Actions", and "Recent Activities". In the "Quick Actions" section, there are four items: "Scratchpad", "Notebooks", "Jobs", and "Examples". A red arrow points to the "Examples" item, which has a blue icon of three books. The "Recent Activities" section below it shows the message "No items to display."

- 8) Aquí se muestra diferentes ejemplos de Notebooks. Para continuar tenemos que abrir el menú que se encuentra en la parte superior izquierda.

The screenshot shows the Oracle Machine Learning interface. At the top, there's a navigation bar with the Oracle logo, the project name 'ML_USER Project [ML_USER Works...]', and a user dropdown 'ML_USER'. Below the navigation bar, the title 'Example Templates' is displayed, along with a 'Create Notebook' button and a search bar. The main content area is titled 'Example Templates' and contains eight cards, each representing a different notebook template:

- My First Notebook**: Oracle Machine Learning example...
Author: Oracle
Date Added: 13/02/2018 23:16
Tags: 'SQL' 'Data' 'Graph'
0 Likes, 1680 views, 50 downloads
- OML4Py -0- Tour**: This notebook highlights a wide r...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Attribute Importance' 'Clas...
0 Likes, 25 views, 5 downloads
- OML4Py -1- Introduction**: This notebook highlights OML4Py...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Anomaly Detection' 'Attribu...
0 Likes, 19 views, 1 download
- OML4Py -2- Data Selectio...**: This notebook highlights the OML...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Join' 'Split' 'Python' 'Data S...
0 Likes, 5 views, 0 downloads
- OML4Py -3- Datastore an...**: This notebook highlights features...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Regression' 'Python' 'Data ...
0 Likes, 3 views, 0 downloads
- OML4Py -4- Embedded P...**: This notebook highlights features...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Regression' 'Python' 'Matpl...
0 Likes, 2 views, 0 downloads
- OML4Py -5- AutoML**: This notebook highlights the Auto...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Classification' 'Regression' ...
0 Likes, 24 views, 3 downloads
- OML4Py Anomaly Detection**: This notebook builds an anomaly ...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Anomaly Detection' 'Sampli...
0 Likes, 11 views, 3 downloads
- OML4Py Association Rules**: This notebook builds an associati...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Classification' 'Regression' ...
0 Likes, 0 views, 0 downloads
- OML4Py Attribute Importa...**: This notebook builds an attribut...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Classification' 'Regression' ...
0 Likes, 0 views, 0 downloads
- OML4Py Classification**: This notebook builds and applies...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Classification' 'Regression' ...
0 Likes, 0 views, 0 downloads
- OML4Py Clustering**: This notebook builds and applies...
Author: Oracle
Date Added: 26/11/2020 11:41
Tags: 'Classification' 'Regression' ...
0 Likes, 0 views, 0 downloads

- 9) Despues se tiene que seleccionar Notebooks

The screenshot shows the Oracle Machine Learning interface with the 'Notebooks' section selected in the sidebar. The sidebar includes links for Home, Project, Notebooks (which is highlighted with a red box), Templates, Personal, Shared, Examples, Jobs, Connection Groups, and Notebook Sessions. The main content area displays several informational cards:

- Create Jobs**: How to create a job
- Manage Permissions**: How to manage collaborative permissions in workspaces
- Try It**: Follow along with a hands on workshop
- Notebooks**: The place for data discovery and analytics
- Jobs**: Schedule notebooks to run at certain times
- Examples**: Check out some examples

On the right side, there's a 'Recent Notebooks' section with the message 'Nothing to Display'.

10) Para crear un Notebook se tiene que iniciar haciendo click en **Create**.

The screenshot shows the Oracle Machine Learning interface with the title bar 'ADWC_WS Project [ADWC_WS Works...]' and user 'ADWC_WS'. Below it is a 'Notebooks' section with a table header: Name, Comment, Last Update, Updated By, and Connection Group. A red arrow points to the '+ Create' button in the top navigation bar.

11) Poner **adw_notebook** como nombre y hacer click en **OK**.

The screenshot shows the 'Create Notebook' dialog box. It has fields for 'Name' (with a red circle around 'adwc_notebook'), 'Comment', 'Connection' (set to 'Global'), and 'OK' and 'Cancel' buttons at the bottom right. A red arrow points from the 'adwc_notebook' entry to the 'OK' button.

12) Ahora tenemos un Notebook creado.

The screenshot shows the Oracle Machine Learning interface with the title bar 'ML_USER Project [ML_USER Works...]' and user 'ML_USER'. Below it is a 'Notebooks' section with a table. The first row is 'adwc_notebook' with a status icon showing 'Connected'. A red arrow points to the 'Connected' status indicator.

Paso 7: Agregar contenido al Notebook

- 1) Click en el menú arriba izquierda

The screenshot shows the Oracle Machine Learning interface. At the top, there is a navigation bar with the Oracle logo and a 'Machine Learning' dropdown. Below this is a 'How Do I?' section with five items: 'Get Started', 'Create Notebooks', 'Create Jobs', 'Manage Permissions', and 'Try It'. A red arrow points from the text 'Click en el menú arriba izquierda' to the 'Get Started' button. Below this is a 'Quick Actions' section with four items: 'Run SQL Statements', 'Run SQL Scripts', 'Notebooks', and 'Jobs'. The main content area has a dark background and displays the following menu items: 'Home', 'Notebooks', 'Templates', 'Jobs', 'Connection Groups', and 'Notebook Sessions'. A red arrow points from the 'Templates' item towards the left side of the screen.

☰ ORACLE® Machine Learning

How Do I?

- Get Started**
Get started with Oracle Machine Learning
- Create Notebooks**
How to create a notebook
- Create Jobs**
How to create a job
- Manage Permissions**
How to manage collaborative permissions in workspaces
- Try It**
Follow along with a hands on workshop

Quick Actions

- Run SQL Statements**
Enter and run SQL statements
- Run SQL Scripts**
Enter and run SQL scripts
- Notebooks**
The place for data discovery and analytics
- Jobs**
Schedule notebooks to run at certain times
- Examples**
Check out some examples

Home

Notebooks

Templates ►

Jobs

Connection Groups

Notebook Sessions

- 2) Selecciona el Notebook que creamos anteriormente

The screenshot shows the 'Notebooks' page in the Oracle Machine Learning interface. At the top, there are buttons for Edit, Create, Duplicate, Save as Template, Delete, Import, and Version. Below the header is a table with columns: Name, Comment, Last Update, Updated By, and Connection Group. One row is visible, showing 'adwc_notebook' as the name, with other details like last update date and updated by user. At the bottom, there's a pagination bar showing 'Page 1 of 1 (1 of 1 items)'.

- 3) Dale click en el engrane que se encuentra en la parte superior derecha y tienes que estar seguro que tengas elegido aun que sea uno de los servicios y despues guarda al hacer click en **Save**.

The screenshot shows the 'Settings' page for the 'adwc_notebook'. At the top, it says 'adwc_notebook' and has a toolbar with various icons. Below that is a 'Settings' section with a 'Interpreter binding' subsection. It lists four interpreters: 'orcl_low %sql (default), %script, %python', 'orcl_medium %sql (default), %script, %python', 'orcl_high %sql (default), %script, %python', and 'md %md (default)'. The 'orcl_low' option is selected. At the bottom of the page are 'Save' and 'Cancel' buttons.

- 4) Pega el texto inferior, despues dale click en el botón con el triangulo. Se tardara unos minutos y despues se mostrara la informacion con un formato.

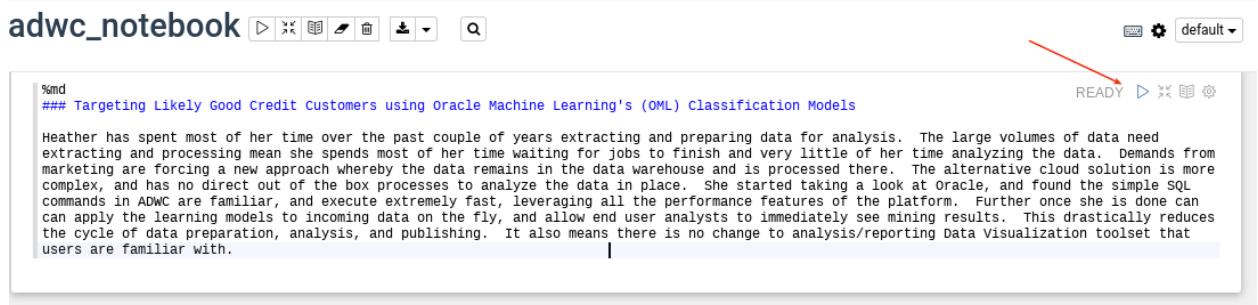
%md

Targeting Likely Good Credit Customers using Oracle Machine Learning's (OML) Classification Models

Heather has spent most of her time over the past couple of years extracting and preparing data for analysis. The large volumes of data need extracting and processing mean she spends most of her time waiting for jobs to finish and very little of her time analyzing the data. Demands from marketing are forcing a new approach whereby the data remains in the data warehouse and is processed there. The alternative cloud solution is more

complex, and has no direct out of the box processes to analyze the data in place. She started taking a look at Oracle, and found the simple SQL commands in ADW are familiar, and execute extremely fast, leveraging all the performance features of the platform. Further once she is done can apply the learning models to incoming data on the fly, and allow end user analysts to immediately see mining results. This drastically reduces the cycle of data preparation, analysis, and publishing. It also means there is no change to analysis/reporting Data Visualization toolset that users are familiar with.

adwc_notebook

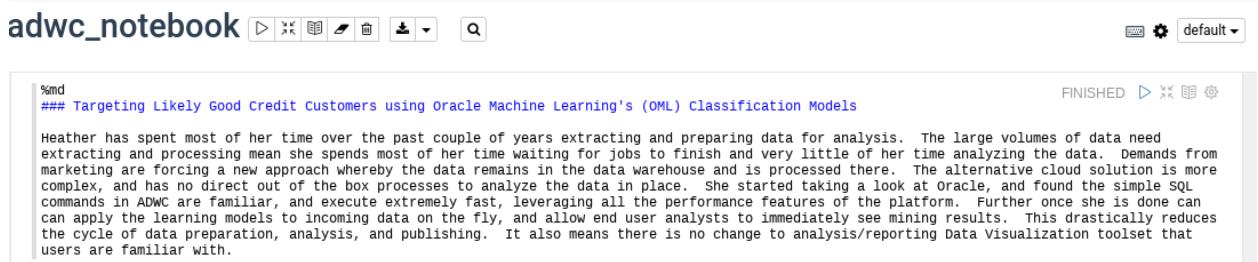


```
%md
### Targeting Likely Good Credit Customers using Oracle Machine Learning's (OML) Classification Models
```

Heather has spent most of her time over the past couple of years extracting and preparing data for analysis. The large volumes of data need extracting and processing mean she spends most of her time waiting for jobs to finish and very little of her time analyzing the data. Demands from marketing are forcing a new approach whereby the data remains in the data warehouse and is processed there. The alternative cloud solution is more complex, and has no direct out of the box processes to analyze the data in place. She started taking a look at Oracle, and found the simple SQL commands in ADWC are familiar, and execute extremely fast, leveraging all the performance features of the platform. Further once she is done can apply the learning models to incoming data on the fly, and allow end user analysts to immediately see mining results. This drastically reduces the cycle of data preparation, analysis, and publishing. It also means there is no change to analysis/reporting Data Visualization toolset that users are familiar with.

READY

adwc_notebook



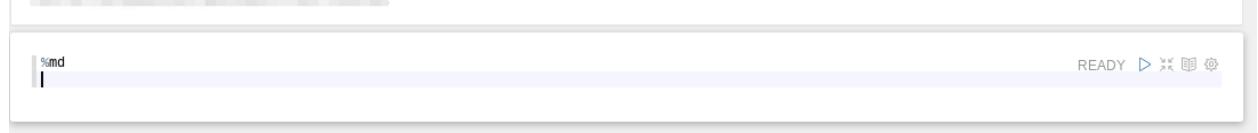
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FINISHED

Targeting Likely Good Credit Customers using Oracle Machine Learning's (OML) Classification Models

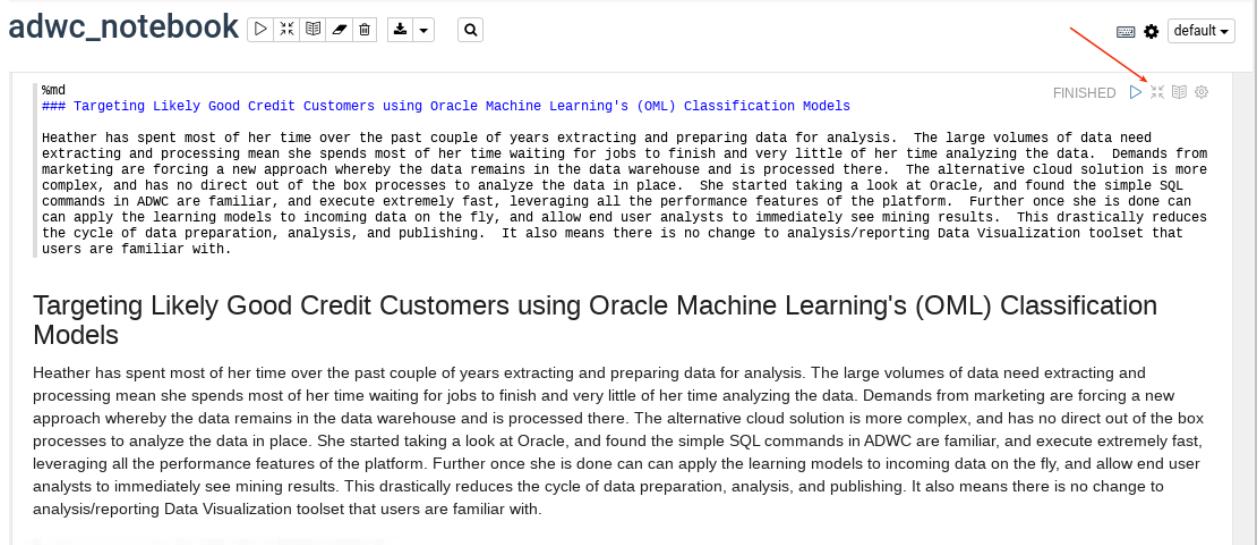
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```
%md
```

READY

- 5) Si queremos ver el resultado sin el código hacer click en el icono **show details**.

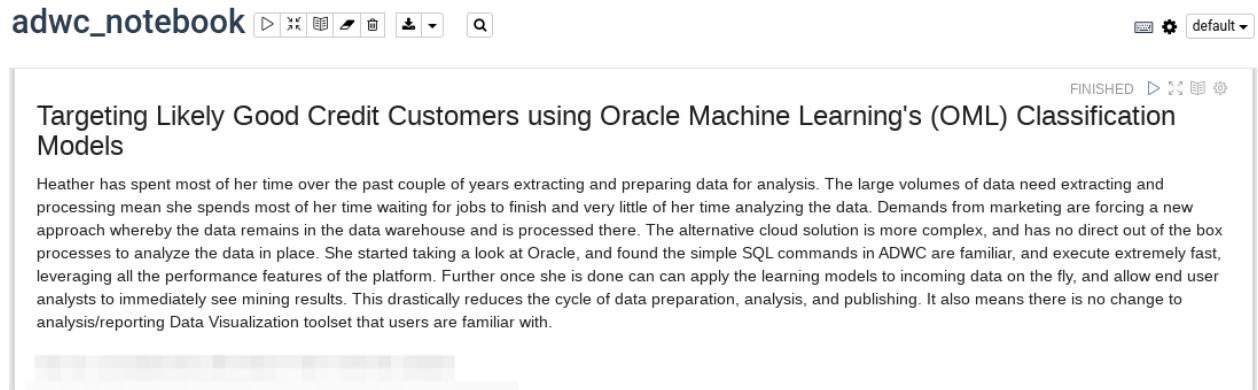


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## Targeting Likely Good Credit Customers using Oracle Machine Learning's (OML) Classification Models
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- 6) En el siguiente párrafo copia el texto y ejecútalo.

```
%sql
```

```
/* This shows the credit scoring data we will use historical data to predict the likelihood  
of a customer having good credit. */
```

```
Select * from ml_user.credit_scoring_100k where rownum < 100
```

```
%sql
/* This shows the credit scoring data we will use historical data to predict the likelihood of a customer having good credit. */
Select * from ml_user.credit_scoring_100k where rownum < 100

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Select * from ml_user.credit_scoring_100k where rownum < 100
```

READY ➤ 

FINISHED ➤ 

CUSTOMER_ID	AGE	INCOME	MARITAL_STATUS	NUMBER_OF LIABLE	WEALTH	EDUCATION LEVEL	TENURE	LOAN_TYPE
36968	58	2150	Married	5	Poor	Bachelor's Degree	8	Need
40553		2150	Married	3	Poor	Bachelor's Degree	9	Auto
96479	69	2150	Married	5	Poor	Bachelor's Degree	13	Need
19835	48	2150	Married	3	Poor	Bachelor's Degree	5	Need
52469	38	2750	Married	5	Poor	Bachelor's Degree	3	Need
68809		2750	Married	4	Poor	Bachelor's Degree	2	Need
74621	56	2150	Married	3	Poor	Bachelor's Degree	17	Need
14315	22	2750	Married	2	Average	Master's Degree	26	Need

- 7) Para agregar un título tienen que hacer click en el engrane del lado derecho y seleccionar **Show title**

/* This shows the credit scoring data we will use historical data to predict the likelihood of a customer having good credit. */

```
Select * from ml_user.credit_scoring_100k where rownum < 100
```

CUSTOMER_ID	AGE	INCOME	MARITAL_STATUS	NUMBER_OF LIABLE	WEALTH	EDUCATION_LEVEL	TENURE
36968	58	2150	Married	5	Poor	Bachelor's Degree	8
40553		2150	Married	3	Poor	Bachelor's Degree	9
96479	69	2150	Married	5	Poor	Bachelor's Degree	13
19835	48	2150	Married	3	Poor	Bachelor's Degree	5
52469	38	2750	Married	5	Poor	Bachelor's Degree	3
68809		2750	Married	4	Poor	Bachelor's Degree	2
74621	56	2150	Married	3	Poor	Bachelor's Degree	17
14315	22	2750	Married	2	Average	Master's Degree	26

- 8) Escribir el siguiente titulo: *Review Credit Scoring Data*

Untitled

```
%sql
/* This shows the credit scoring data we will use historical data to predict the likelihood of a customer having good credit. */
Select * from ml_user.credit_scoring_100k where rownum < 100
```

Review Credit Scoring Data

```
%sql
/* This shows the credit scoring data we will use historical data to predict the likelihood of a customer having good credit. */
Select * from admin.credit_scoring_100k where rownum < 100
```

- 9) En el ultimo paráfo copiar el siguiente query:

```
%sql
```

/ This is a basic example of a chart visualization in Zeppelin. This particular one is a column graph. Click on the 'settings' link below. That will show you the fields in the query that were used to create the chart. After you review the settings you can click on the link again to hide the settings. */*

```
select customer_id, age, income, tenure, loan_type, loan_amount, occupation,
number_of_current_accounts, max_cc_spent_amount, mode_job_of_contacts from
ml_user.credit_scoring_100k where rownum < 1000
```

READY ▶ XX ☰ ⚡

```
/* This is a basic example of a chart visualization in Zeppelin. This particular one is a column graph. Click on the 'settings' link below. That will show you the fields in the query that were used to create the chart. After you review the settings you can click on the link again to hide the settings. */

select customer_id, age, income, tenure, loan_type, loan_amount, occupation, number_of_current_accounts, max_cc_spent_amount, mode_job_of_contacts from ml_user.credit_scoring_100k where
rownum < 1000
```

FINISHED ▶ XX ☰ ⚡

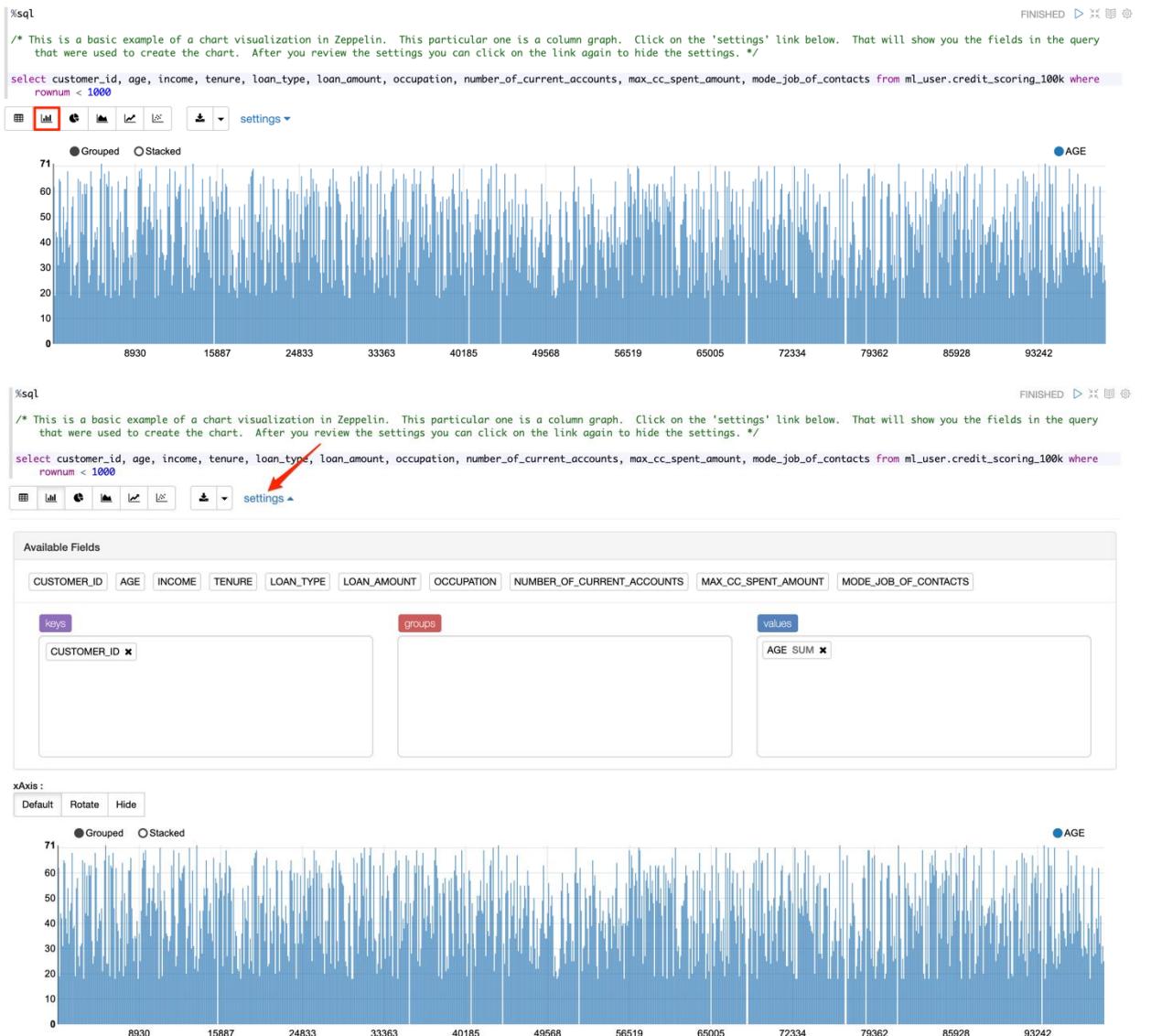
```
/* This is a basic example of a chart visualization in Zeppelin. This particular one is a column graph. Click on the 'settings' link below. That will show you the fields in the query that were used to create the chart. After you review the settings you can click on the link again to hide the settings. */

select customer_id, age, income, tenure, loan_type, loan_amount, occupation, number_of_current_accounts, max_cc_spent_amount, mode_job_of_contacts from ml_user.credit_scoring_100k where
rownum < 1000
```

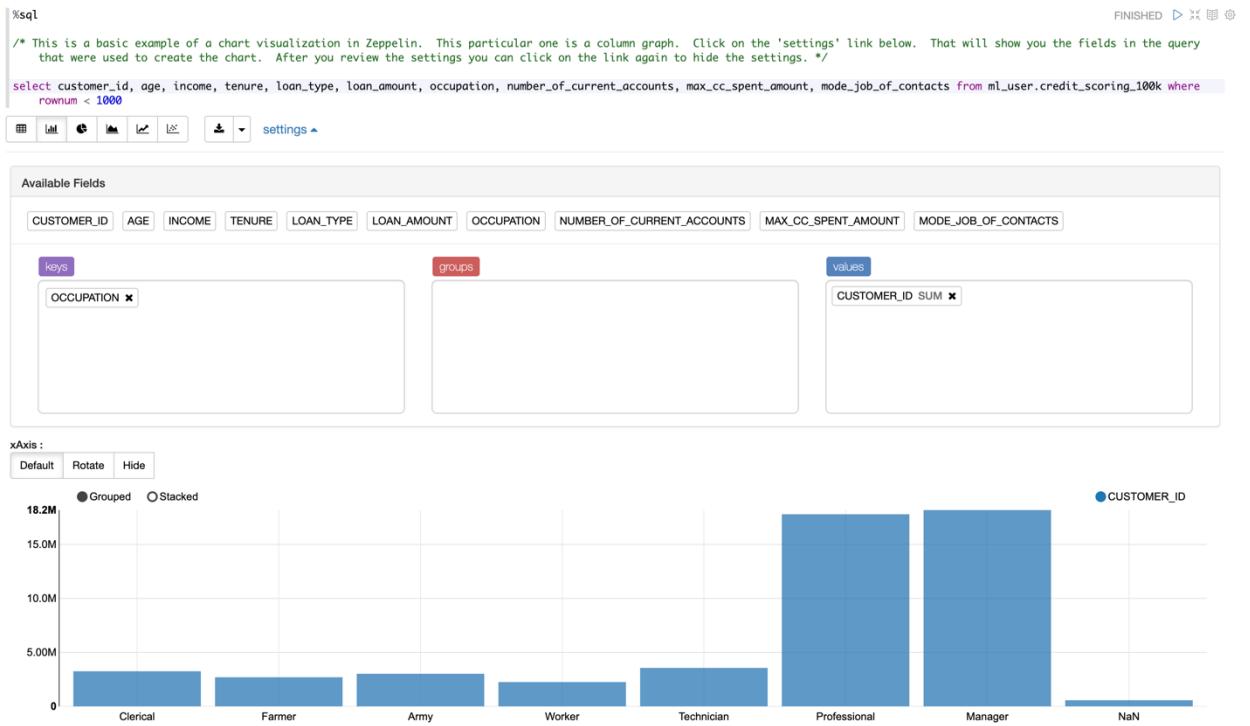
grid table list chart settings ▾

CUSTOMER_ID	AGE	INCOME	TENURE	LOAN_TYPE	LOAN_AMOUNT	OCCUPATION	NUMBER_OF_CURRENT_ACCOUNTS	MAX_CC_SPENT_AMOUNT
36968	58	2150	8	Need	20000	Clerical	4	1290
40553		2150	9	Auto	15000	Farmer	3	1935
96479	69	2150	13	Need	20000	Army	3	3225
19835	48	2150	5	Need	25000	Clerical	2	5160
52469	38	2750	3	Need	20000	Worker	2	5775
68809		2750	2	Need	25000	Army	2	3300
74621	56	2150	17	Need	45000	Farmer	6	645
14315	22	2750	26	Need	30000	Army	5	5775

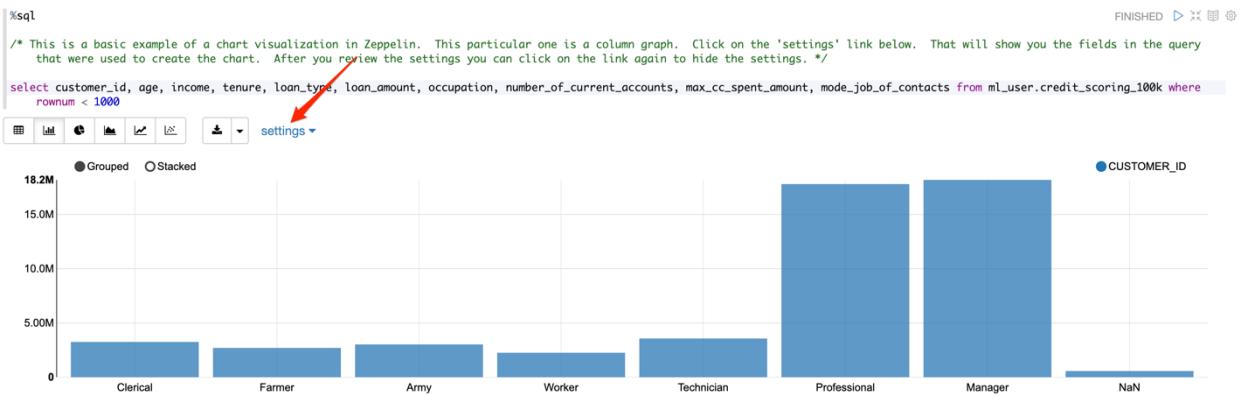
10) Cambiar el estilo de presentación en bar chart y dar click en Settings



11) Pueden arrastrar los campos para ver diferentes resultados



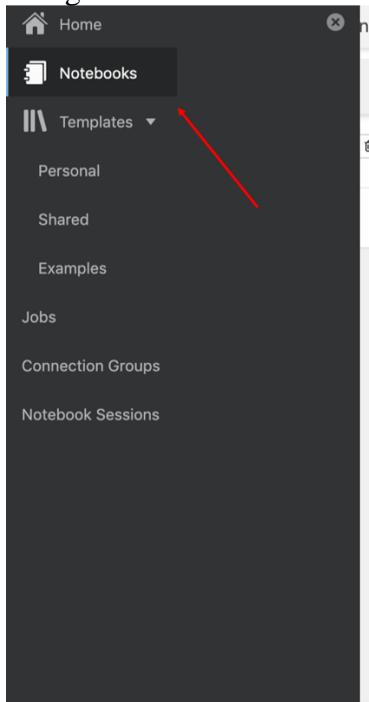
12) Para ocultar las opciones de settings, solo es necesario dar click en settings de nuevo.



Paso 8: Importar Notebooks

- 1) Descargar Notebook -> https://oracle.github.io/learning-library/data-management-library/oracle-machine-learning/adb-oml/create-ml-model/files/targeting_customers_that_complete_all_payments_v4.json

2) Navega a la sección de Notebook



3) Selecciona Import

A screenshot of the Oracle Machine Learning interface showing the 'Notebooks' list. The 'Import' button is highlighted with a red arrow. The table displays one item: adwc_notebook. The columns include Name, Comment, Last Update, Updated By, and Connection Group. The connection group is listed as 'Global'. The status bar at the bottom shows '1 of 1 items'.

4) Selecciona el JSON file que descargaste anteriormente
targeting_customers_that_complete_all_payments_v4.json

A screenshot of the Oracle Machine Learning interface showing the 'Notebooks' list after import. A blue banner at the top states '1 out of 1 notebooks imported successfully'. The table now shows two items: 'Targeting Customers That Complete All...' and 'adwc_notebook'. The 'Import' button is visible in the toolbar. The connection group for both items is listed as 'Global'. The status bar at the bottom shows '1 of 1 items'.

- 5) Selecciona el Notebook que acabas de crear
Notebooks

Name	Comment	Last Update	Updated By	Connection Group
Targeting Customers That Complete All Payments_V4_1		09/05/2020 03:23	ML_USER	Global
adwc_notebook		09/05/2020 03:13	ML_USER	Global

- 6) Antes de empezar a trabajar en el Notebook es necesario revisar los bindings. Dale click al engrane

Targeting Customers That Complete All P... 

Avoiding failed payments and involuntary churn

You have a hunch that weakening profits may be due to the company selling to non-optimal customers; customers who have good enough credit to purchase "big ticket items" e.g. large televisions, appliances and durable goods on payment credit cards and payment plans but then fail to complete all their payments and have to return the purchased goods. The company takes a loss and has to resell the items at a discount as "used".

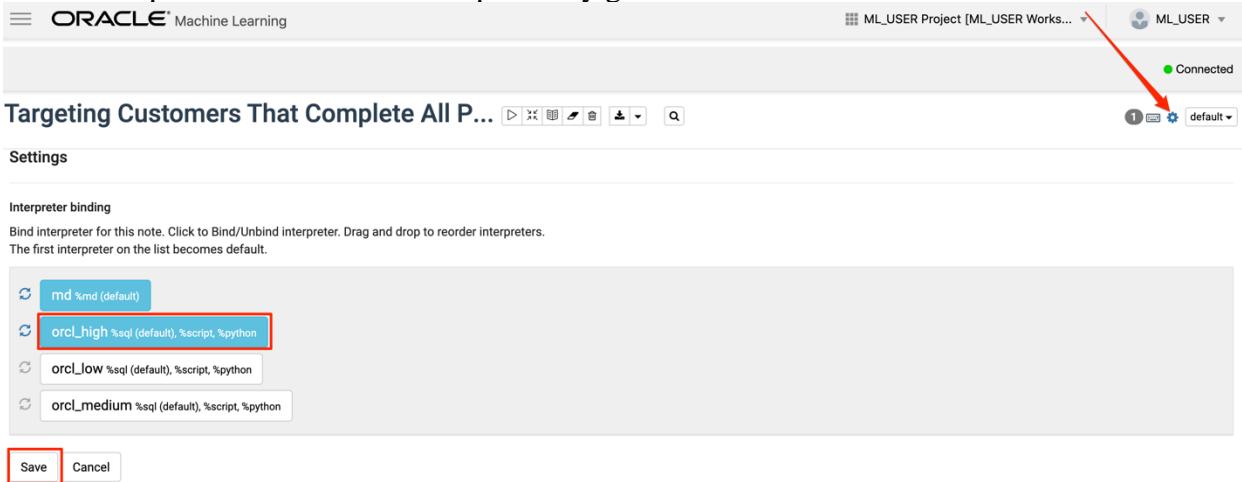
In your data assembled inside Oracle Autonomous Database, you have over 100 variables to consider to understand your data and to find these hidden patterns and eventually to build predictive models that target these "Good_Credit" better customers. You want to first explore data using simple charts and graphs, but then move onto using Oracle Machine Learning's powerful algorithms to automatically sift through her data to find patterns, new insights and to make predictions that target her best customers-those who have both good enough credit and are able to complete all the payments.

Let's take a look.

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- 7) Selecciona por lo menos una de las opciones y guarda dando click en Save

Targeting Customers That Complete All P... 

Interpreter binding

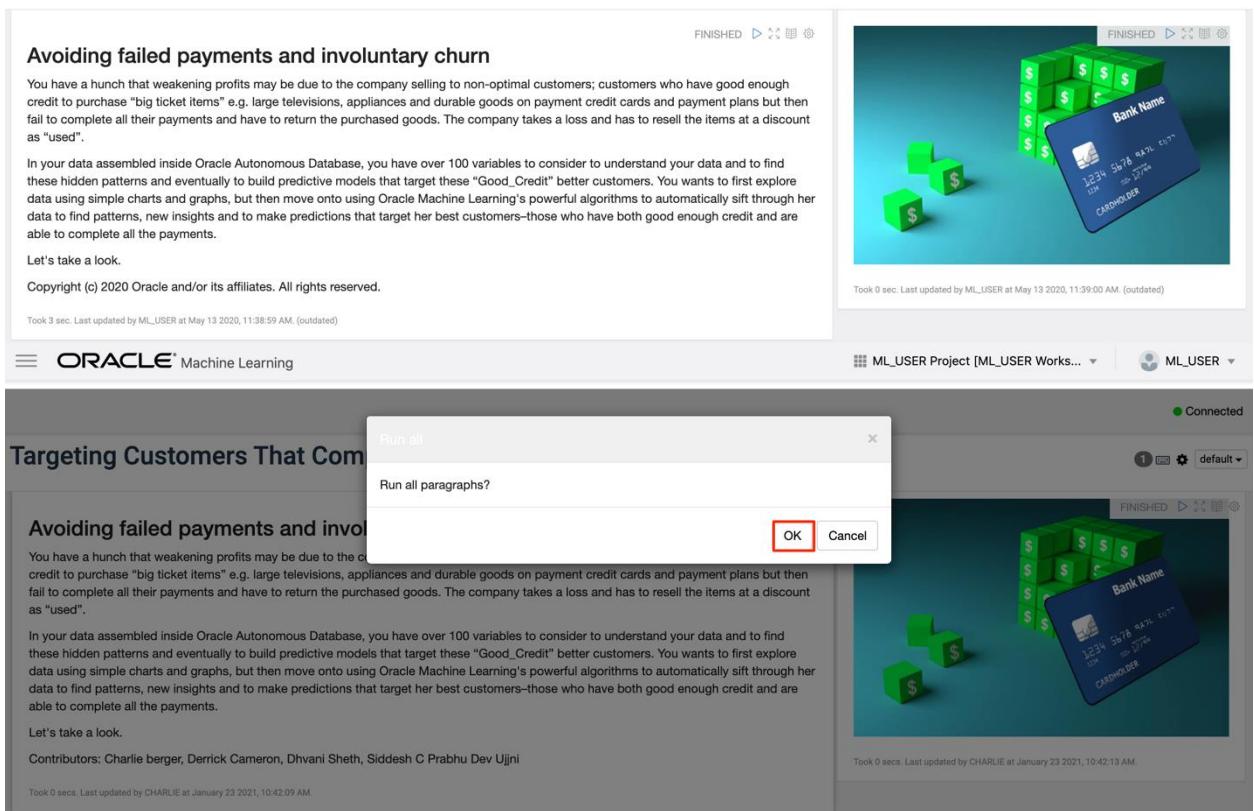
Bind interpreter for this note. Click to Bind/Unbind interpreter. Drag and drop to reorder interpreters. The first interpreter on the list becomes default.

- md %md (default)
- orcl_high %sql (default), %script, %python**
- orcl_low %sql (default), %script, %python
- orcl_medium %sql (default), %script, %python

Save **Cancel**

- 8) Haz click en el Run icono para correr el párrafo.

Targeting Customers That Complete All P... 



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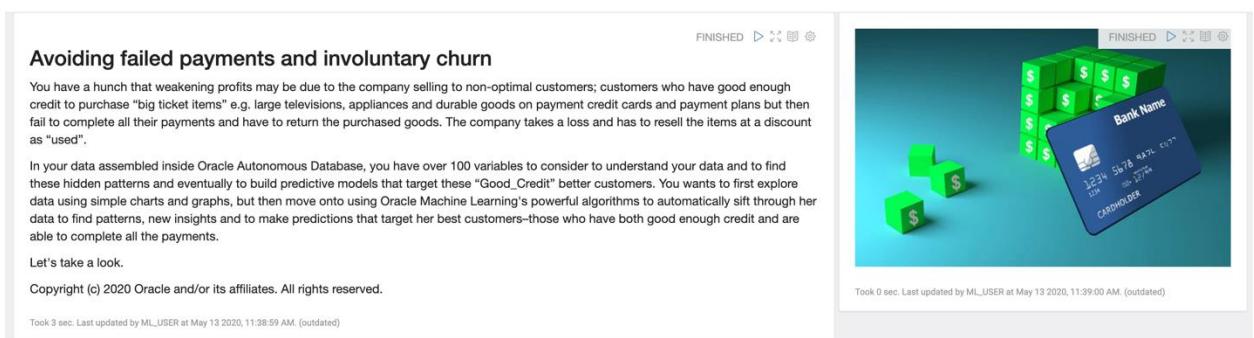
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ML_USER Project [ML_USER Works... | ML_USER | Connected

- 9) Asegúrate que todos los párrafos estén terminados. Para esto da click en el botón de output y show editor.

Targeting Customers That Complete All P... 



Avoiding failed payments and involuntary churn

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Targeting Customers That Complete All P...

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Additional information...

Machine Learning Process FINISHED  Set up the data for this notebook FINISHED 

FINISHED 

Targeting Customers That Complete All P...

FINISHED  FINISHED 

%md
Avoiding failed payments and involuntary churn

You have a hunch that weakening profits may be due to the company selling to non-optimal customers; customers who have good enough credit to purchase "big ticket items" e.g. large televisions, appliances and durable goods on payment credit cards and payment plans but then fail to complete all their payments and have to return the purchased goods. The company takes a loss and has to resell the items at a discount as "used".

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Let's take a look.

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%md
BUSINESS UNDERSTANDING

FINISHED 

%md
Target "Good_Credit" Customers Who Can Make All Payments and Don't Involuntary Churn

You want to avoid customers who fail to make payments and involuntarily churn. You will be using Oracle Machine Learning's classification models in Autonomous Database. In the CREDIT_SCORING_100K dataset, you have tagged the diserable customers as "Good_Credit" in the CREDIT_SCORING_100K table. Those who either have lower credit or have failed to keep up with their payments and have involuntarily churned you have labeled as "Other_Credit" customers. You want to build Oracle Machine Learning predictive models that target "Good_Credit" customer and can generate insights about them.

Let's get started!

Targeting Customers That Complete All P...

FINISHED  FINISHED 

%md
Avoiding failed payments and involuntary churn

You have a hunch that weakening profits may be due to the company selling to non-optimal customers; customers who have good enough credit to purchase "big ticket items" e.g. large televisions, appliances and durable goods on payment credit cards and payment plans but then fail to complete all their payments and have to return the purchased goods. The company takes a loss and has to resell the items at a discount as "used".

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