



Manage Offensive Behavior Using AI Language, Speech, and Video with Oracle APEX

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2023 | Version 1.01
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Due to the nature of the product architecture, it may not be possible to safely include all features described in this document without risking significant destabilization of the code.

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Workshop Structure

Pre-requisites:

- Tenancy has a compartment in which participants can perform all steps
- All policies for the participants in the assigned compartment are in place:
 - [OCI Data Science](#)
 - [OCI Speech](#)
 - [OCI Language](#)
- A [dynamic group](#) for OCI Data Science (Notebooks and Jobs) is in place.
- Participant can create an Autonomous Database in assigned compartment
- Participant and OCI Data Science (dynamic group) can access Object Storage





Lab 1. – Not Required for this session

- Log-in Oracle Cloud
- Create an Autonomous Database and download the Wallet
- Create API Key and download config and private key
- Create a Log Group
- Create an Object Storage Bucket

Lab 2. – Not Required for this session

- Create OCI Data Science Notebook Session
- Pull Github Repo
- Open first Jupyter Notebook and follow steps in the notebook:
 - Create a custom conda environment
 - Optional. Adjust Pytube Python package
 - Publish custom conda environment to Object Storage


Lab 3.

- Open second Jupyter Notebook and follow steps in the notebook:
 - Upload Config and Private Key files
 - Upload Autonomous Database Wallet
 - Change parameters in Main.py
 - Add Log Group OCID
 - Define Custom Conda Environment
 - Run Notebook (ie., create a Job and run a Job)
- Get Job OCID, Project OCID, and Compartment OCID

Lab 4.

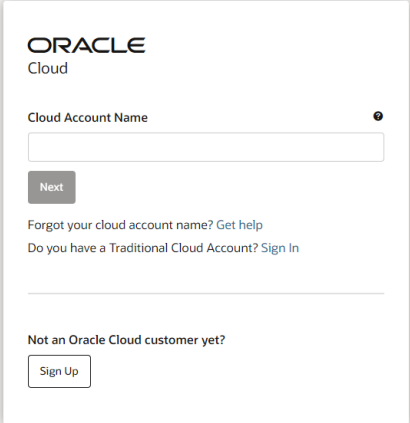
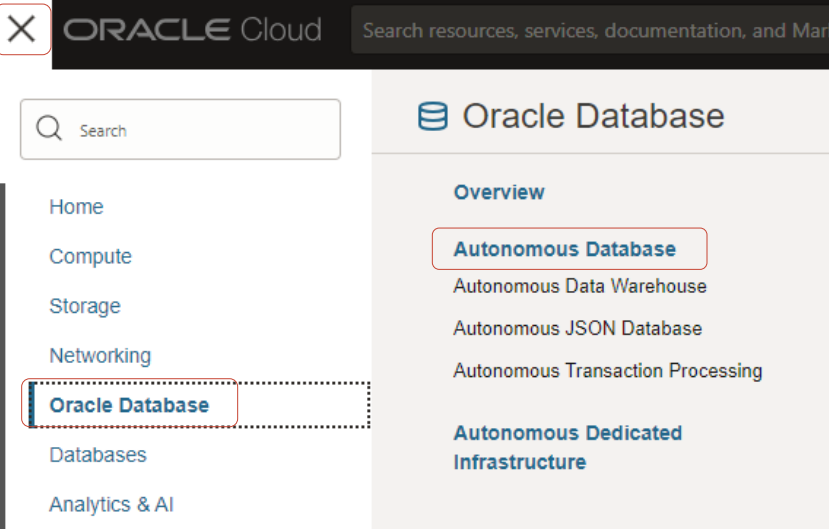
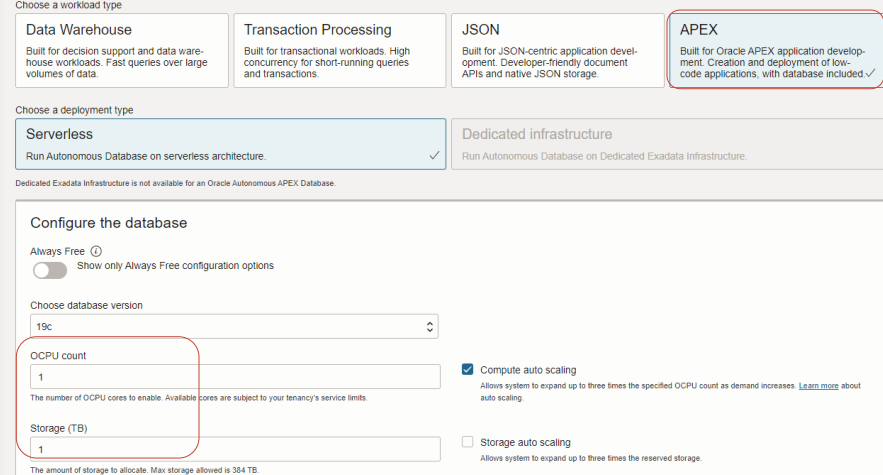
- Open APEX and create a Workspace
- Importing pre-built application
- Managing credentials (API Key)
- Configuring the Data Sources (Project OCID, Job OCID, Compartment OCID)

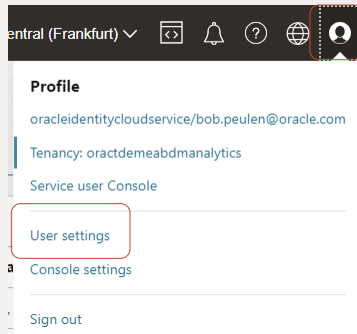
Lab 5.

- Start analysis on Video, Audio, or Both
 - Optional: enhancing the APEX application
- 

HANDS-ON

Lab 1.

WHAT YOU SEE	WHAT YOU DO
	<ol style="list-style-type: none">1. Got Oracle.cloud.com and Log in using your tenancy and credentials.2. In all steps, make sure you are working in the correct compartment you have rights to work in.
	<p>First, we'll create an Autonomous Database. This database will be used to store all results and will run APEX on top of it.</p> <ol style="list-style-type: none">3. Go to hamburger menu, click on 'Oracle Database'4. Click on 'Autonomous Database'5. Click 'Create Autonomous Database'. Make sure to be in the correct compartment when you do so.6. Leave the Display name and Database name as is.
	<ol style="list-style-type: none">7. Select 'APEX' under 'Workload Type'8. Select 1 OCPU and 1 TB. Feel free to increase the size of the database if needed.9. Enter your password twice. Note down the password locally, you will need this password.10. Choose "Secure access from everywhere" in the "Access Type" option11. Click on "Create Autonomous Database". This will take several minutes.



Resources

Groups

API Keys

Auth Tokens

Customer Secret Keys

Database Passwords

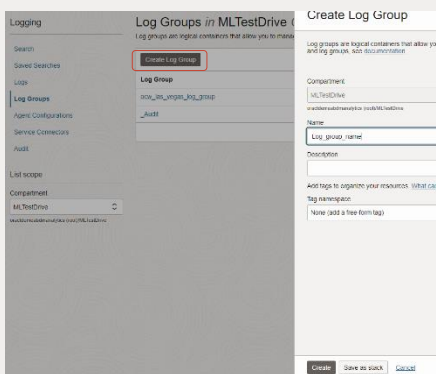
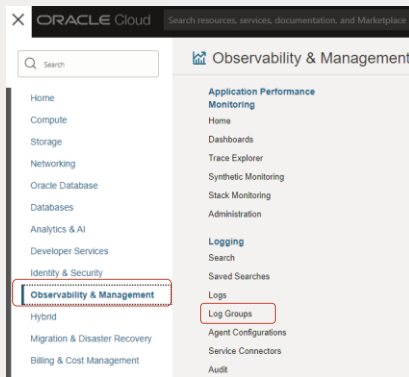
API Keys

Add API Key

Fingerprint

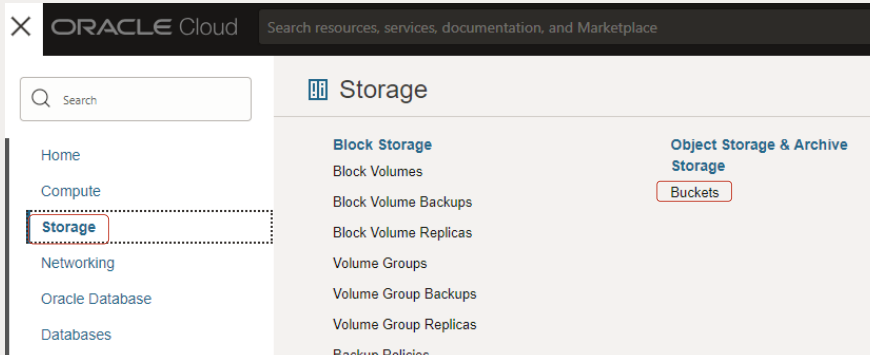
Second, you will create an API Key. This API Key is needed to authenticate yourselves to invoke or use other services. Both APEX and OCI Data Science will need your API Key.

12. In the top-right corner, click the **person icon**.
13. Click on "User Settings"
14. In the left, click on "**API Keys**" and following on "Add API Key"
15. First, click on "**Download Private Key**". This will download the private key.
16. Click on "**Add**"
17. Copy the "**Configuration File Preview**" starting with [DEFAULT] into a empty .txt file. Save the file as "config" , without .txt as extension.
18. Important. Change the last line to **key_file= ./private_key.pem**.
19. Important. In OCI Data Science, you have to rename the private key file to "private_key.pem"
20. Click on "Close" to close the window. You can review the API Key by click on the three dots on the right of it and select "View Configuration File"



Third, you will create Log Group. Eventually, each Job that you will run, will create a Log. That Log contains all output (and errors if any) stored in the Log Group.

21. Click on the hamburger menu, click on "**Observability & Management**"
22. Click on "**Log Groups**"
23. Click on "**Create Log Group**"
24. Add a Name to your Log Group and click "**Create**"
25. Step inside the **Log Group** and search for "**OCID**". Copy the entire OCID into a .txt file. You will need this later. The OCID starts with "ocid1.loggroup.oc1."



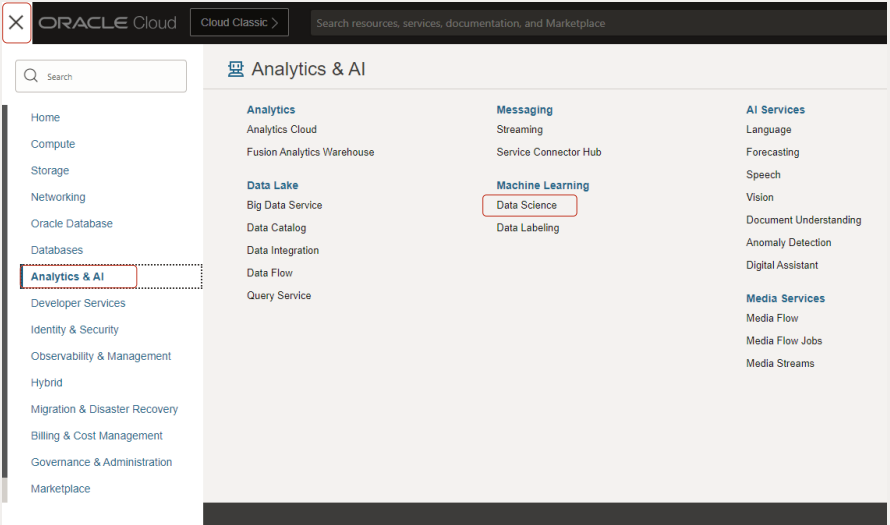
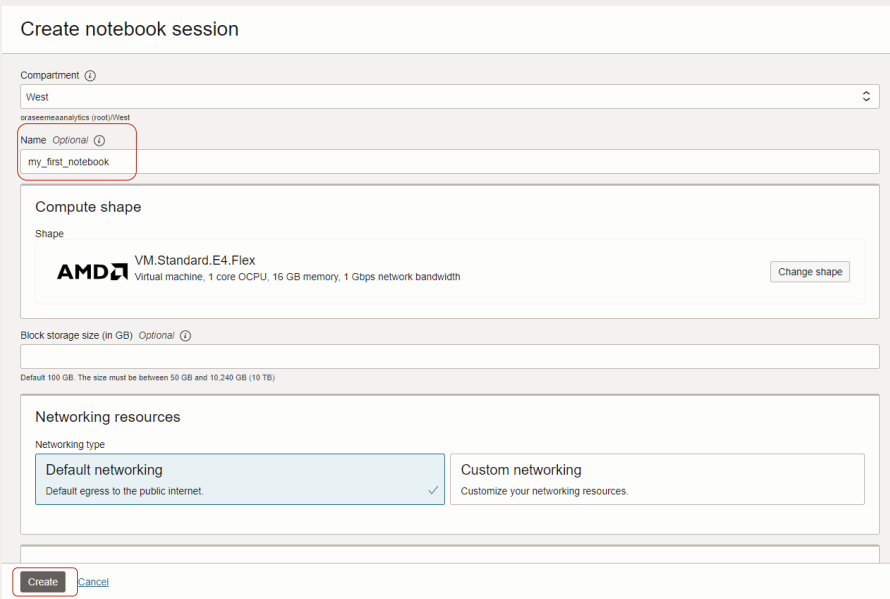
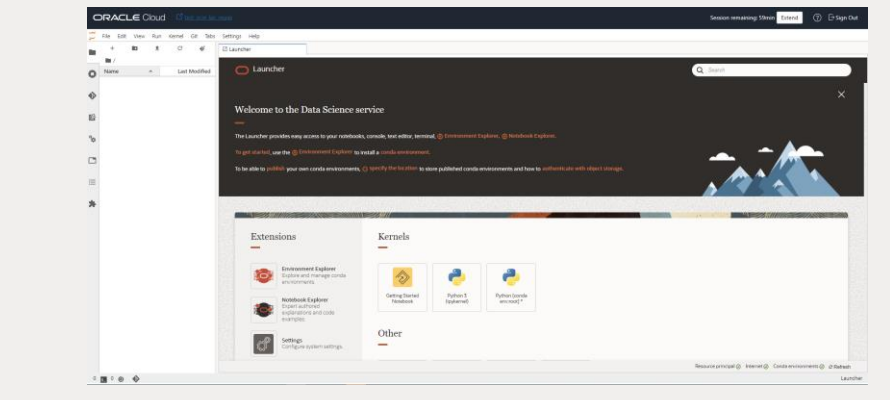
Lastly, you will create an Object Storage bucket. This bucket will be used to store several things:

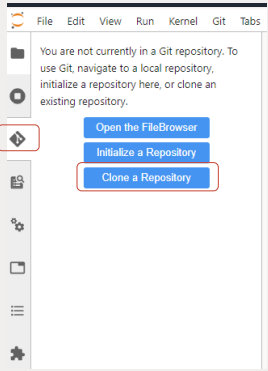
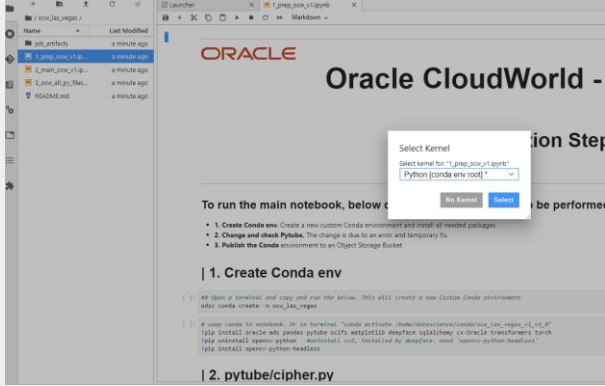
- The image (.jpg file) you will upload in APEX
- The output of OCI Speech (speech to text)
- Your published Conda environment

26. Click on the hamburger menu, click on "**Storage**"
27. Click on "Buckets"
28. Make sure to be in the correct compartment.
29. Click on "Create Bucket"
30. Change the bucket name to "**ocw_root**" and click "**Create**"

END EXERCISE 1

Lab 2.

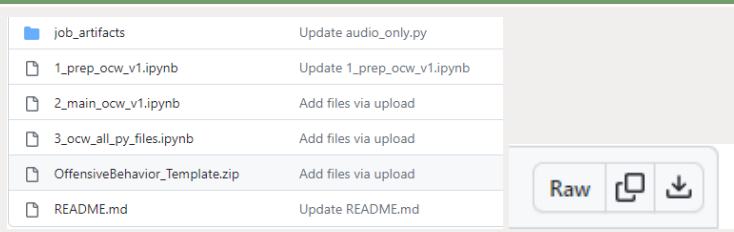
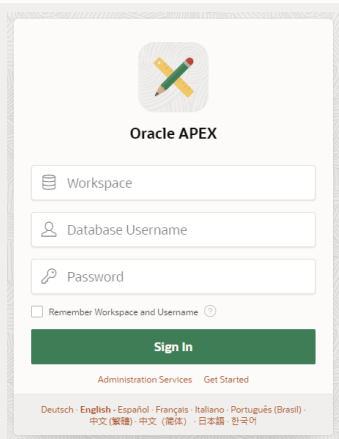
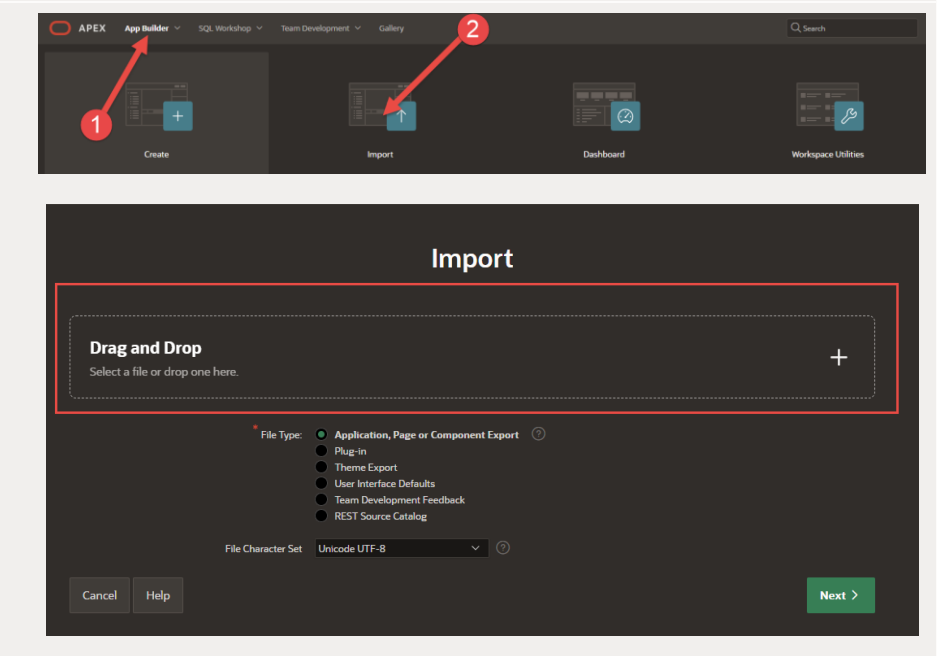

WHAT YOU SEE	WHAT YOU DO
	<ol style="list-style-type: none">31. In Oracle Cloud, click on the hamburger menu, and following on Analytics & AI32. Click on "Data Science"33. Select correct compartment on the left34. Select "Create Project". You can name the Project to your own liking35. Click on "Create". This will create a project.36. Step inside the project
	<ol style="list-style-type: none">37. Click "Create Notebook"38. You can use all default settings, only change the name to "my_first_notebook"39. Optional: change the shape of the notebook session by clicking on "Change Shape"40. Use "Default Networking"41. Leave Block storage size empty42. Click on "Create"43. This may take a few minutes, when the notebook is "Active", click on the name of the notebook to access the main page.
	<ol style="list-style-type: none">44. Click on "Open" to open the notebook45. When you are prompted to log in, log in with your Oracle Cloud credentials46. The page on the left should appear. You are now inside a Jupyter Notebook

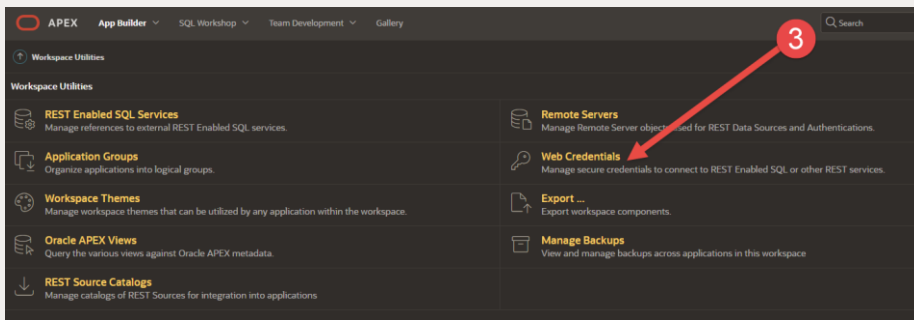
 <p>You are not currently in a Git repository. To use Git, navigate to a local repository, initialize a repository here, or clone an existing repository.</p> <p>Open the File Browser Initialize a Repository Clone a Repository</p>	<ol style="list-style-type: none"> 47. Click on the “Git” tab on the left 48. Click on “Clone a Repository” 49. Add https://github.com/phantompete/ocw_las_vegas.git 50. Click “Clone”. A new, “ocw_las_vegas” repository” should appear in the directory on the left 51. Step inside the “ocw_las_vegas” folder 52. Open the first notebook: “1_prep_ocw_v1_ipnyb”
 <p>Oracle CloudWorld -</p> <p>Select Kernel</p> <p>Select kernel for "1_prep_ocw_v1_ipnyb"</p> <p>Python [conda env:root]</p> <p>No Kernel Select</p> <p>To run the main notebook, below</p> <ol style="list-style-type: none"> 1. Create Conda env. Create a new custom Conda environment and install all needed packages 2. Change and check PyTorch. The change is due to an error and temporary fix. 3. Publish the Conda environment to an Object Storage Bucket <p>1. Create Conda env</p> <pre> 1. Open a terminal and copy and run the below. This will create a new custom Conda environment ocw conda create -n ocw_las_vegas 2. Open a terminal and copy and run the below. This will install the necessary packages conda activate /home/oraclecloud/conda/ocw_las_vegas_v1_01 pip install oracle-ai-pipeline pytorch torchvision torchaudio pytorch-cuda==11.7.0 pip install oracle-ai-pipeline pytorch torchvision torchaudio pytorch-cuda==11.7.0 pip install oracle-ai-pipeline pytorch torchvision torchaudio pytorch-cuda==11.7.0 pip install oracle-ai-pipeline pytorch torchvision torchaudio pytorch-cuda==11.7.0 pip install oracle-ai-pipeline pytorch torchvision torchaudio pytorch-cuda==11.7.0 </pre> <p>2. pytorch/cipher.py</p>	<ol style="list-style-type: none"> 53. When prompted for “Select Kernel”, just click on “Select” 54. Follow the steps in the notebook closely.
	<p>END EXERCISE 2</p>

Lab 3.

WHAT YOU SEE	WHAT YOU DO																		
<div><div><div>Launcher</div><div>Terminal 1</div><div>1_prep_ocw_v1.ipynb</div><div>2_main_ocw_v1.ipynb</div></div><div>Python [conda env:ocw_las_vegas_v1_0]</div></div> <div><div>ORACLE</div><div>Oracle CloudWorld - Las Vegas</div><div>Use case 1. Person Detection in Video</div><div>Use case 2. Offensive Language Detection in Video</div></div> <div><div>Prerequisites to run notebook</div><div><ul style="list-style-type: none">Note 1: Perform all steps in the "1_prep_ocw_las_vegas_v1.ipynb" fileNote 2: Pull GitHub Repository; the repo contains:<ul style="list-style-type: none">Three notebooks:A folder named "job_artifacts"; inside the "job_artifacts" folder:<ul style="list-style-type: none">main.pysub_packages with 5 .py filesAn empty "vallet" folderNote 3: A Dynamic Group for OCI Data Science has been created and OCI Data Science policies are in order. Documentation on policies and dynamic group can be found hereNote 4: A correct config file with private keyNote 5: Only use .jpg images as profile images.Note 6: YouTube video language should be in English (only for Video analysis)</div></div>	<div><div>1. After finishing the first notebook, open the second notebook named "2_main_ocw_v1.ipynb"</div><div>2. When prompted for a kernel, select the custom conda you just created and published in the first notebook</div><div>3. Follow the steps in the notebook closely.</div></div>																		
<div><div>Data Science > Projects > Project details</div><div><div>datascienceproject20230630214437</div><div><div>Edit</div><div>Move resource</div><div>Add tags</div><div>Delete</div></div><div><div>Project information</div><div>Tags</div></div><div><div>Description:-</div><div>Created by: _userA30 <a>Show <a>Copy</div><div><div>OCID: 250kqmta <a>Show <a>Copy</div><div>Created: Fri, Jun 30, 2023, 21:44:37 UTC</div></div></div><div><div>Resources</div><div>Notebook sessions</div><div>Jobs</div><div>Pipelines</div><div>Models</div><div>Model deployments</div></div><div><div>Notebook sessions in MLTestDrive Compartment</div><div><div>Create notebook session</div><table><tr><th>Name</th><th>State</th><th>Compute instance shape</th><th>Created by</th></tr><tr><td>ocw_las_vegas_test</td><td>Active</td><td>VM Standard E4 Flex</td><td>_userA01 <a>Show <a>Copy</td></tr><tr><td>datasciencenotebooksession20230630214504</td><td>Deleted</td><td>VM Standard E4 Flex</td><td>_userA30 <a>Show <a>Copy</td></tr></table></div></div></div><div><div>Data Science > Projects > Project details > Jobs</div><div><div>datascienceproject20230630214437</div><div><div>Edit</div><div>Move resource</div><div>Add tags</div><div>Delete</div></div><div><div>Inspect information</div><div>Tags</div></div><div><div>Description:-</div><div>Created by: _userA30 <a>Show <a>Copy</div></div><div><div>Resources</div><div>Jobs in MLTestDrive Compartment</div><div><div>Create job</div><table><tr><th>Name</th><th>State</th></tr><tr><td>ocw_my_first_job</td><td>Active</td></tr></table></div></div></div><div><div>ocw_my_first_job</div><div><div>Get</div><div>Upload job artifact</div><div>Download job artifact</div><div>Move resource</div></div><div><div>Job information</div><div>Default configuration</div><div>Tags</div></div><div><div>General information</div><div>Description:-</div><div>OCID: 250kqmta <a>Show <a>Copy</div><div>Created by: rlsdabjy <a>Show <a>Copy</div><div>Created on: Thu, Aug 17, 2023, 14:12:29 UTC</div><div>Job artifact: job_artifacts.zip (40.71 KB)</div><div>Logging configuration</div><div>Logging enabled: true</div><div>Default log group: /aws/logs/ocw_my_first_job</div><div>Evaluate automatic log creation: true</div><div>Default log: Automatic creation of logs is enabled</div></div></div></div></div>	Name	State	Compute instance shape	Created by	ocw_las_vegas_test	Active	VM Standard E4 Flex	_userA01 <a>Show <a>Copy	datasciencenotebooksession20230630214504	Deleted	VM Standard E4 Flex	_userA30 <a>Show <a>Copy	Name	State	ocw_my_first_job	Active	<div><div>4. After finishing the notebooks and successfully running your first Job, you need three OCID to run the same Job from APEX, these are:<ul style="list-style-type: none">Project OCIDCompartment OCIDJob OCID</div><div>5. To get the Project OCID, go back to Oracle Cloud.</div><div>6. Go to "Data Science". See steps 1-7 in Lab 2.</div><div>7. In your Project, you will see "OCID", click on "Copy" just next to OCID to copy the entire OCID. Make sure to paste it locally.</div><div>8. Next, click on "Jobs" in the left menu</div><div>9. Click on "ocw_my_first_job" or when you renamed the Job during creation, click on the name</div><div>10. In the Job, you will see "OCID". Click on "Copy" next to the OCID and paste the full OCID locally</div></div>		
Name	State	Compute instance shape	Created by																
ocw_las_vegas_test	Active	VM Standard E4 Flex	_userA01 <a>Show <a>Copy																
datasciencenotebooksession20230630214504	Deleted	VM Standard E4 Flex	_userA30 <a>Show <a>Copy																
Name	State																		
ocw_my_first_job	Active																		
<div><div>ORACLE Cloud</div><div>Search resources, services, documentation, and more</div><div><div>Q Search</div><div>Identity & Security</div></div><div><div>Home</div><div>Compute</div><div>Storage</div><div>Networking</div><div>Oracle Database</div><div>Databases</div><div>Analytics & AI</div><div>Developer Services</div><div>Identity & Security</div></div><div><div>Identity</div><div>Users</div><div>Groups</div><div>Dynamic Groups</div><div>Network Sources</div><div>Policies</div><div>Compartment</div><div>Federation</div><div>Authentication Settings</div></div><div><div>Compartment</div><div><div>Create Compartment</div><table><tr><th>Name</th><th>Status</th><th>OCID</th></tr><tr><td>practicedevelopmentanalytics (pdr)</td><td>Active</td><td>_srtfkg</td></tr><tr><td>ADWTestDrive</td><td>Active</td><td>_ybcmlg</td></tr><tr><td>ADWTestDriveExtra</td><td>Active</td><td>_nvcnm</td></tr><tr><td>ADWTestDrivePlus</td><td>Active</td><td>_ybfico</td></tr><tr><td>AnalyticsTestDrive</td><td>Active</td><td>_4729aa</td></tr></table></div></div></div>	Name	Status	OCID	practicedevelopmentanalytics (pdr)	Active	_srtfkg	ADWTestDrive	Active	_ybcmlg	ADWTestDriveExtra	Active	_nvcnm	ADWTestDrivePlus	Active	_ybfico	AnalyticsTestDrive	Active	_4729aa	<div><div>11. To get the Compartment ID, click on the hamburger menu, following on "Identity & Security"</div><div>12. Click on "Compartment"</div><div>13. Search for your compartment you are working in.</div><div>14. Hover over the OCID in the 3rd column belonging to your compartment, and click "Copy".</div><div>15. Paste the OCID locally</div></div>
Name	Status	OCID																	
practicedevelopmentanalytics (pdr)	Active	_srtfkg																	
ADWTestDrive	Active	_ybcmlg																	
ADWTestDriveExtra	Active	_nvcnm																	
ADWTestDrivePlus	Active	_ybfico																	
AnalyticsTestDrive	Active	_4729aa																	
END EXERCISE 3																			

Lab 4.

WHAT YOU SEE	WHAT YOU DO
	<p>Before you start in APEX, let's download the pre-built application first.</p> <ol style="list-style-type: none">Go to the GitHub repository https://github.com/phantompete/ocw_1_as_vegasDownload the application by clicking on 'OffensiveBehavior_Template.zip'Following, click on the "Download raw file" button.
	<p>When following the OCW Workshop</p> <ol style="list-style-type: none">Log in APEX by clicking here. <p>Full URL: https://fkiw0iuv5h4poci-ocwdb.adb.eu-frankfurt-1.oraclecloudapps.com/ords/apex</p> <ul style="list-style-type: none">Workspace: Same as you used to log in Oracle CloudUser name: Same as you used to log in Oracle CloudPassword : Same as you used to log in Oracle cloud <p>When following the LiveLab</p> <ol style="list-style-type: none">Go back to Oracle Cloud and go to your Autonomous Database you provisioned in the first lab. Open APEX, create a workspace, and log in APEX.
	<p>First, you will import the pre-built APEX application (the .zip file) into APEX.</p> <ol style="list-style-type: none">In APEX, go to "App Builder"Go to "Import"Drag & Drop the just downloaded .zip file into the dropzonePress 'Next' until the application is imported and installed
	<p>Second, you will add/update your own API Key, credentials to APEX. This will ensure APEX can invoke other services, like OCI Data Science – Jobs.</p> <ol style="list-style-type: none">Go back to "App Builder"Go to "Workspace Utilities"



7. Go to “Web Credentials”
8. Select “OCI_API” from the list

Workspace Utilities \ Web Credentials \ Create/Edit

Web Credentials

Attributes

Name: OCI_API

Static ID: OCI_API

Authentication Type: Oracle Cloud Infrastructure (OCI)

OCI User ID: Enter Your OCI User OCID

OCI Private Key: Enter Your Private KEY

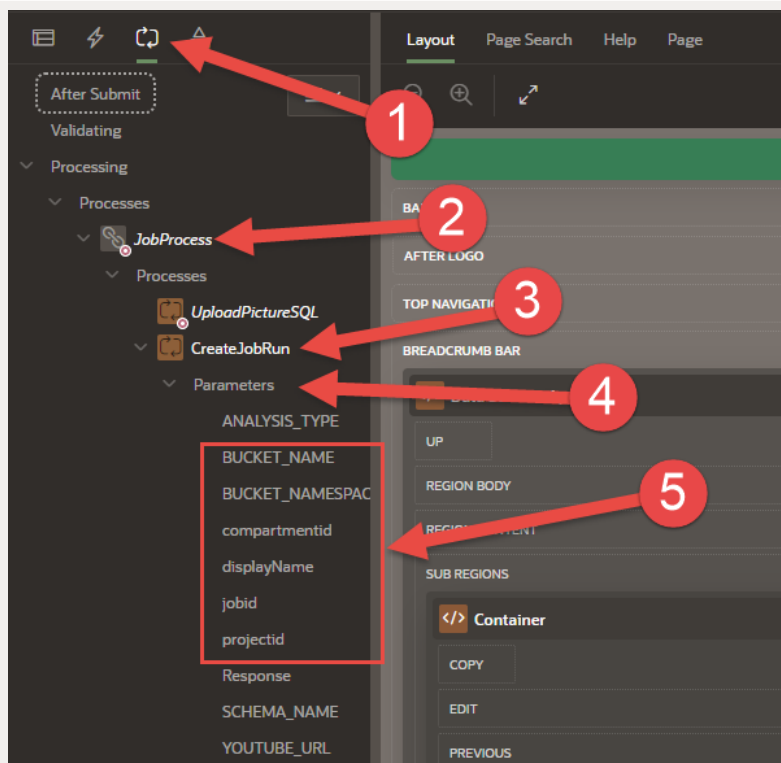
OCI Tenancy ID: Enter Your Tenancy OCID

OCI Public Key Fingerprint: Enter Your Public Key Fingerprint

Valid for URLs

9. Enter the **credentials** from the created API key as required, these are:
 - User OCID
 - Full Private Key
 - Tenancy OCID
 - Public Key Fingerprint
10. Press ‘Apply Changes’

Note: Whenever you make a change the OCI Private Key needs to be re-added.

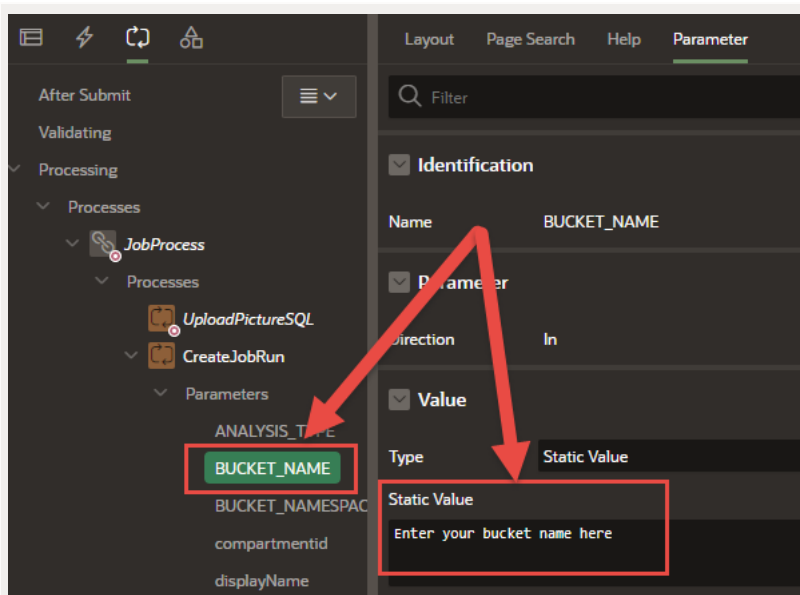


Third, you will configure the data sources. These are used e.g., when you upload a .jpg file to a bucket.

11. Step into your Application
12. Open Page 1 (Home)
13. Navigate to the **Processing Tab**
14. Expand **JobProcess**
15. Expand **CreateJobRun**
16. Expand **Parameters**
17. Configure the Parameters as required. These are:
 - **BUCKET_NAME**. This your Object Storage Bucket Name
 - **BUCKET_NAMESPACE**. This is the namespace of Object Storage
 - **Compartmentid**. This is the Compartment OCID
 - **Jobid**. This is the Job OCID
 - **Projected**. This is the Project OCID

Search for the “Static Value” box. You will see (e.g., for Bucket name) “Enter your bucket name here”

Compartment OCID, Job OCID, and Project OCID can be found using Lab 3.

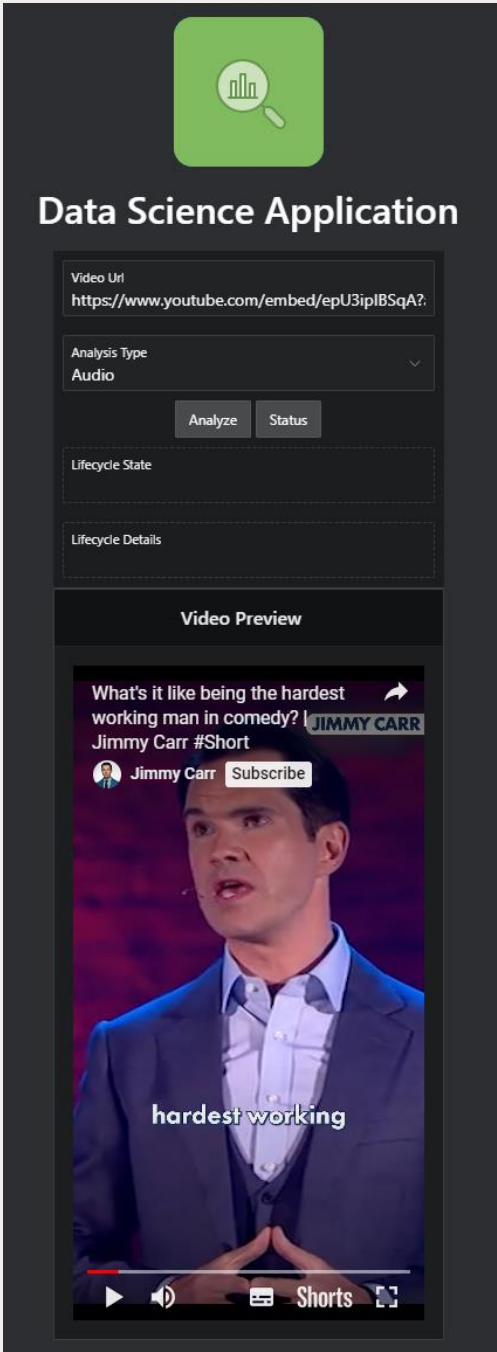


Example of BUCKET_NAME and replacing the static value with the Bucket Name

18. Save and run the application.

END EXERCISE 4

Lab 5.

WHAT YOU SEE	WHAT YOU DO
	<ol style="list-style-type: none">1. Step into your Application and click “Run Application”2. Enter a YouTube URL. Please note:<ul style="list-style-type: none">• Use a YouTube video with English speakers• Do not use any YouTube video with restrictions (e.g., Age restricted video). This will fail.• Press Enter after pasting the Video URL.3. Select ‘Audio’ in the ‘Analysis Type’4. Click ‘Analyze’, and wait for 2 seconds5. Click on ‘Status’ <p>Status will show the progress in ‘Lifecycle State’ and ‘Lifecycle Details’. Depending on the length of the video, the process (i.e., Job) will take around 4 – 8 minutes.</p> <p>When the processing is done, the results will show automatically in-screen.</p> <p>To do Video processing:</p> <ol style="list-style-type: none">6. Enter a YouTube URL7. Select “Video” in the “Analysis Type”8. Upload a .jpg image. This image is, for example, a ‘selfie’ of the person you a trying to detect in the video. The algorithm will use that image to find the person in the image in the video.9. Click on “Analyze”
	END EXERCISE 5

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