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

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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.

- 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.

- 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.

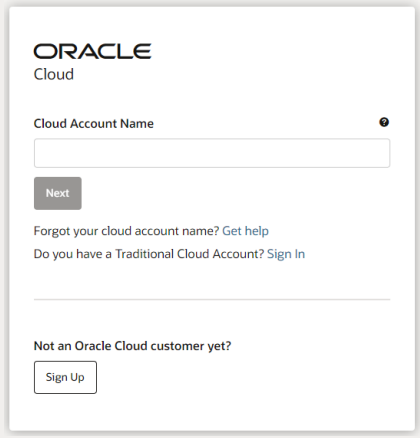
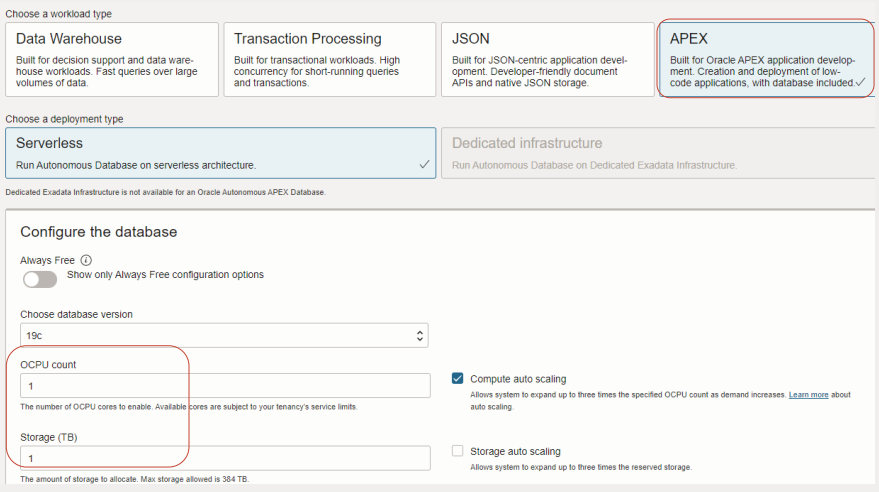
- Open APEX and create a Workspace
- Importing pre-built application
- Managing credentials (API Key)
- Configuring the Data Sources (Project OCID, Job OCID, Compartment OCID)

Lab 5.

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

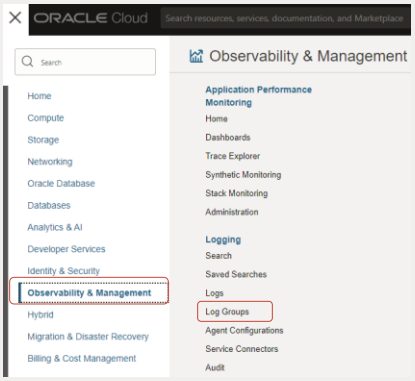
HANDS-ON

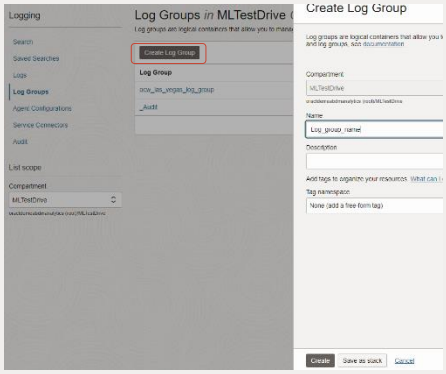
Lab 1.

WHAT YOU SEE	WHAT YOU DO
	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.
	First, we'll create an Autonomous Database. This database will be used to store all results and will run APEX on top of it. 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.
	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" option 11. Click on "**Create Autonomous Database**". This will take several minutes.

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.

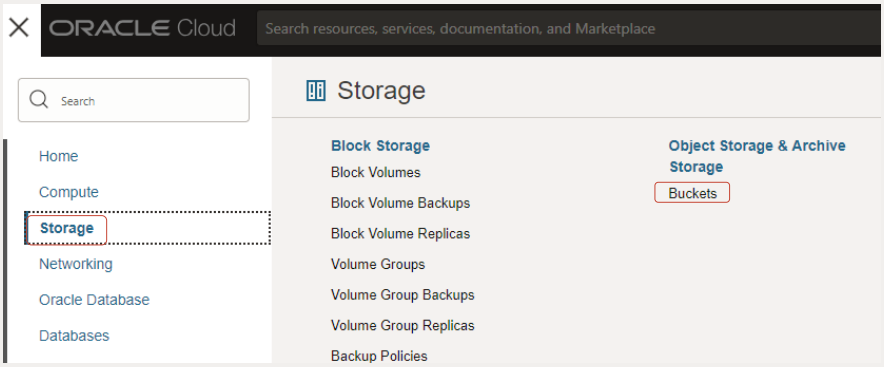
12. In the top-right corner, click the **person Icon.**
13. Click on "User Settings"
14. In the left, click on "**API Keys**" and following on "Add API Key"
15. First, click on "**Download Private Key**". This will download the private key.
16. Click on "**Add**"
17. Copy the "**Configuration File Preview**" 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."



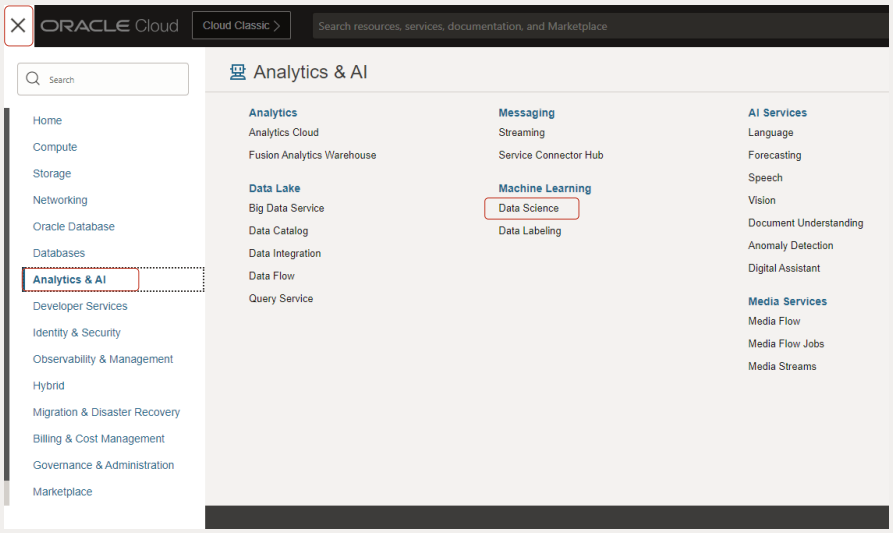
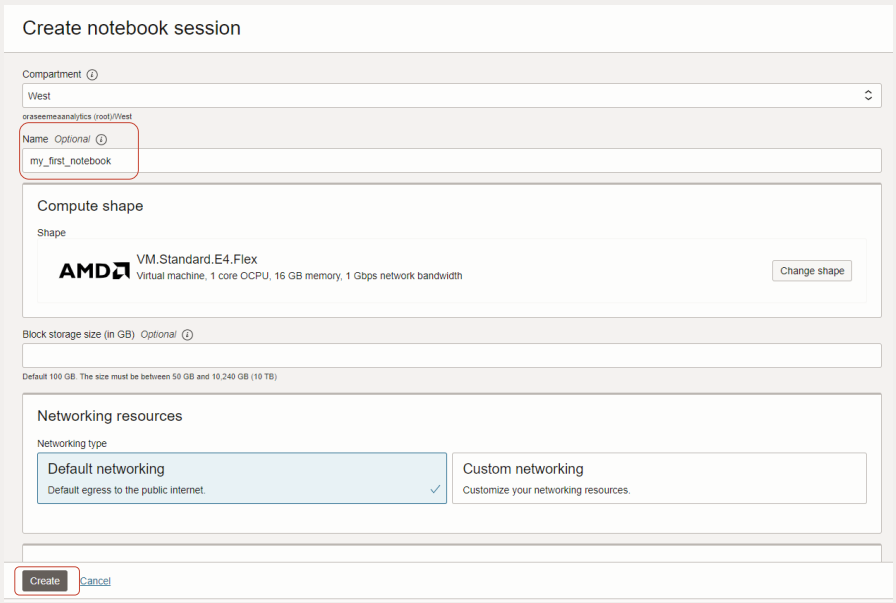
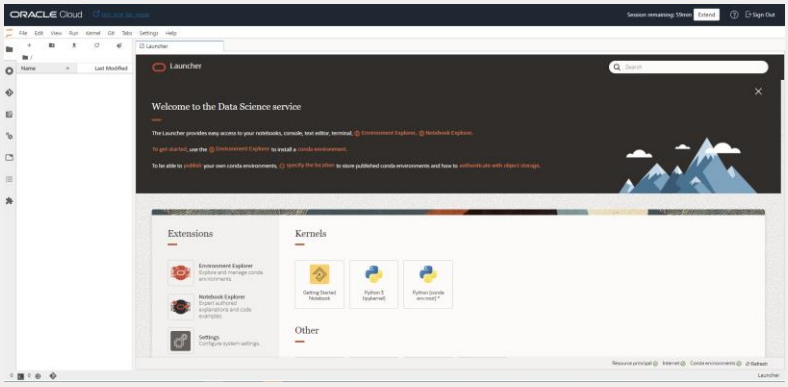
Lastly, you will create an Object Storage bucket. This bucket will be used to store several things:

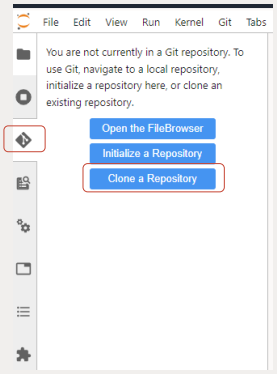
- The image (.jpg file) you will upload in APEX
- The output of OCI Speech (speech to text)
- Your published Conda environment

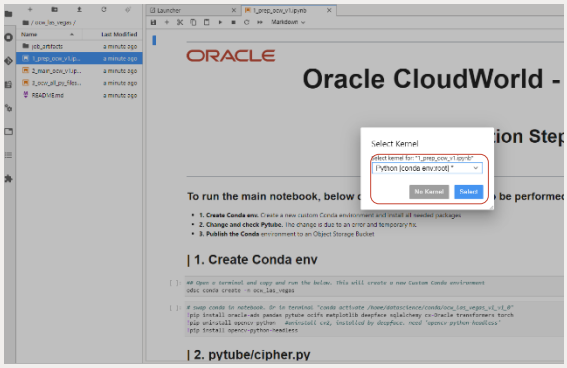
26. Click on the hamburger menu, click on "**Storage**"
27. Click on "Buckets"
28. Make sure to be in the correct compartment.
29. Click on "Create Bucket"
30. Change the bucket name to "**ocw_root**" and click "**Create**"

END EXERCISE 1

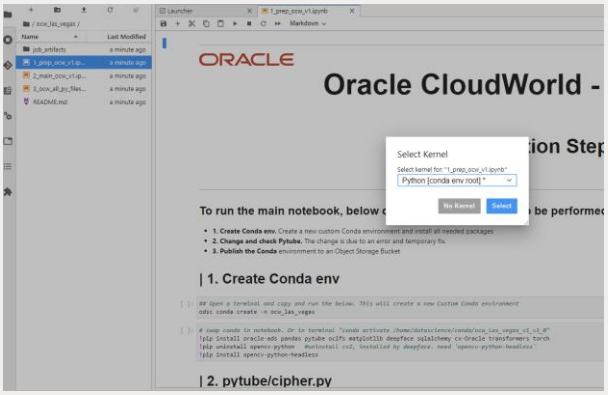
Lab 2.

WHAT YOU SEE	WHAT YOU DO
	31. In Oracle Cloud, click on the **hamburger menu**, and following on **Analytics & AI** 32. Click on "**Data Science**" 33. Select correct compartment on the left 34. Select "**Create Project**". You can name the Project to your own liking 35. Click on "**Create**". This will create a project. 36. Step inside the project
	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 empty 42. 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.
	44. Click on "**Open**" to open the notebook 45. When you are prompted to log in, log in with your Oracle Cloud credentials 46. The page on the left should appear. You are now inside a Jupyter Notebook





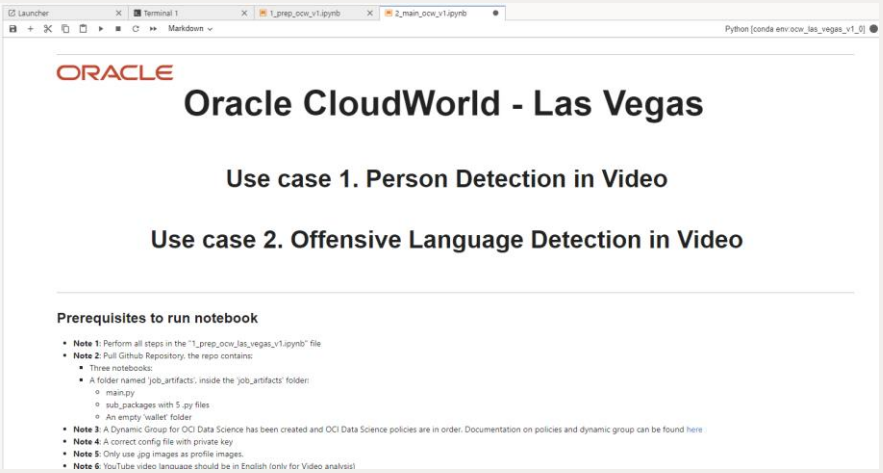
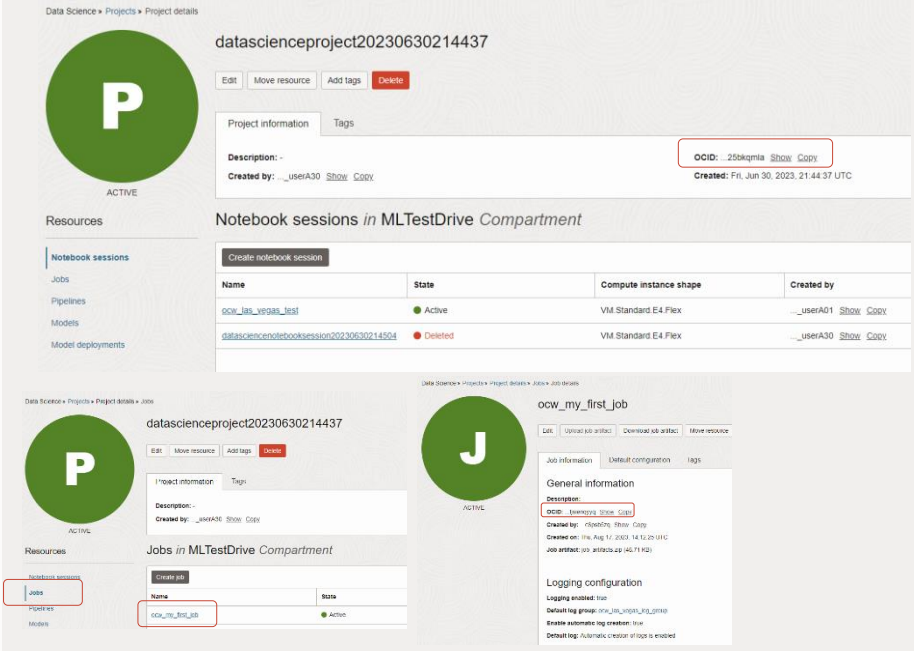
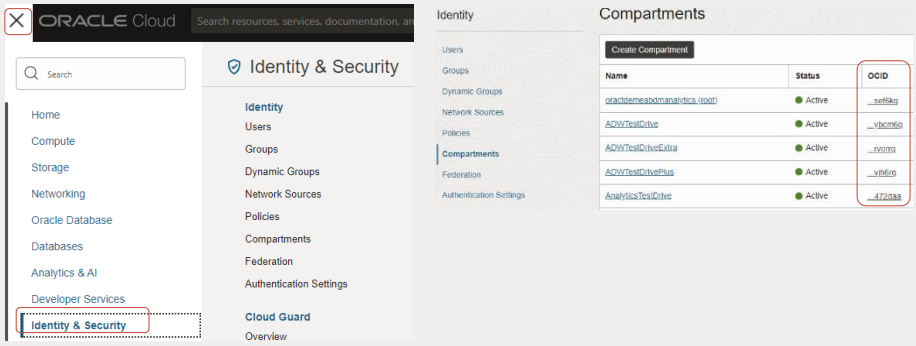
47. Click on the "**Git**" tab on the left
48. Click on "**Clone a Repository**"
49. Add https://github.com/phantompete/ocw_las_vegas.git
50. Click "**Clone**". A new, "ocw_las_vegas" repository" should appear in the directory on the left
51. Step inside the "**ocw_las_vegas**" folder
52. Open the first notebook: **"1_prep_ocw_v1_ipnyb"**



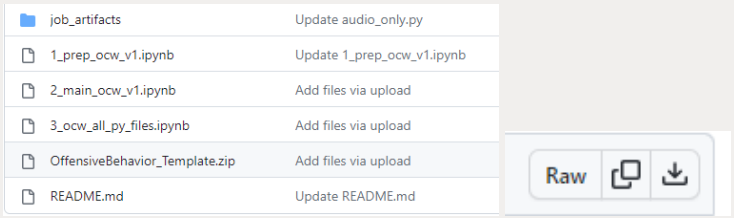
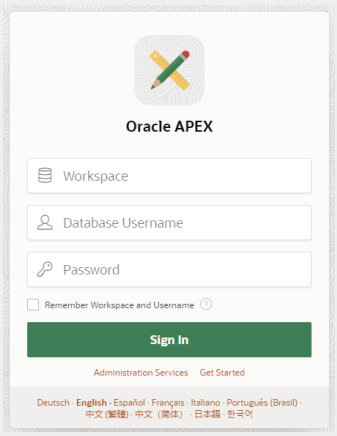
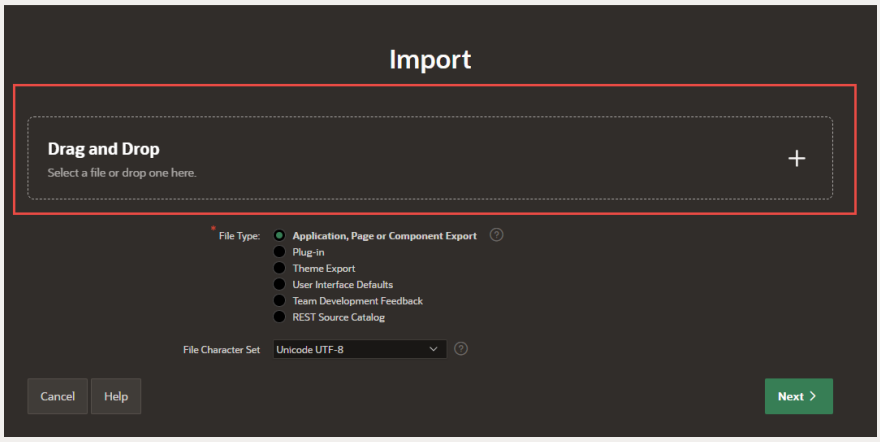
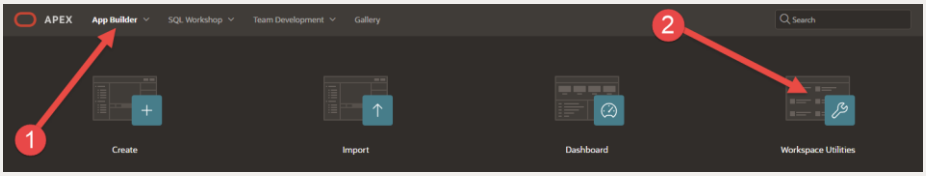
53. When prompted for "**Select Kernel**", just click on "**Select**"
54. Follow the steps in the notebook closely.

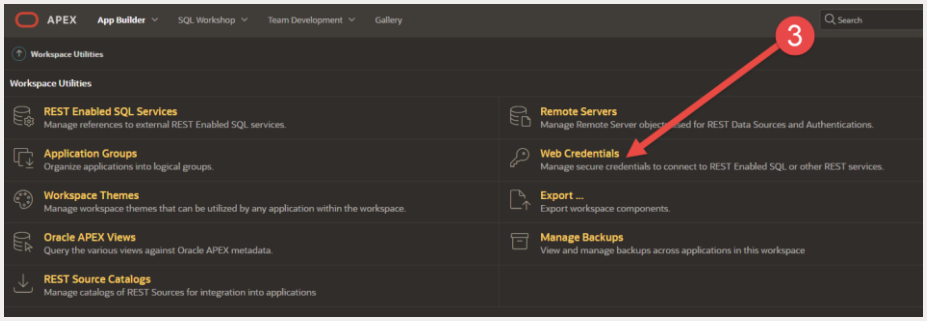
END EXERCISE 2

Lab 3.

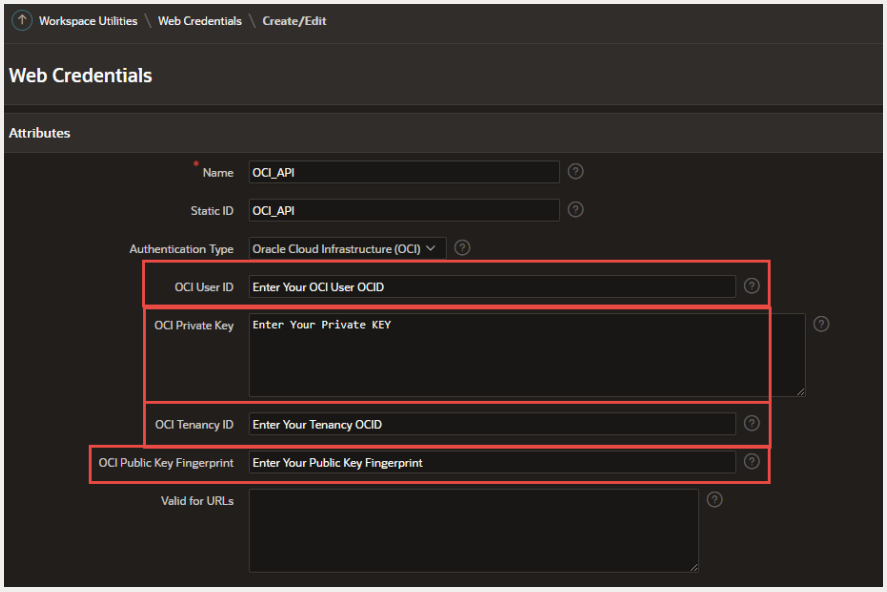
WHAT YOU SEE	WHAT YOU DO
	1. After finishing the first notebook, open the second notebook named "**2_main_ocw_v1.ipynb**" 2. When prompted for a kernel, select the custom conda you just created and published in the first notebook 3. Follow the steps in the notebook closely.
	4. After finishing the notebooks and successfully running your first Job, you need three OCID to run the same Job from APEX, these are: • Project OCID • Compartment OCID • Job OCID 5. To get the **Project OCID**, go back to Oracle Cloud. 6. **Go to "Data Science"**. See steps 1-7 in Lab 2. 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. 8. Next, click on "**Jobs**" in the left menu 9. Click on "**ocw_my_first_job**" or when you renamed the Job during creation, click on the name 10. In the Job, you will see "**OCID**". Click on "Copy" next to the OCID and paste the full OCID locally
	11. To get the Compartment ID, click on the hamburger menu, following on "Identity & Security" 12. Click on "Compartments" 13. Search for your compartment you are working in. 14. Hover over the OCID in the 3rd column belonging to your compartment, and click "Copy". 15. Paste the OCID locally
	END EXERCISE 3

Lab 4.

WHAT YOU SEE	WHAT YOU DO
	Before you start in APEX, let's download the pre-built application first. 1. Go to the GitHub repository https://github.com/phantompete/ocw_las_vegas 2. Download the application by clicking on 'OffensiveBehavior_Template.zip' 3. Following, click on the "Download raw file" button.
	**When following the OCW Workshop** 4. Log in APEX by clicking here. **Full URL:** https://fkjw0juw5h4ppci-ocwdb.adb.eu-frankfurt-1.oraclecloudapps.com/ords/apex • Workspace: Same as you used to log in Oracle Cloud • User name: Same as you used to log in Oracle Cloud • Password : Same as you used to log in Oracle cloud **When following the LiveLab** 4. 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.
 	First, you will import the pre-built APEX application (the .zip file) into APEX. 1. In APEX, go to "**App Builder**" 2. Go to "**Import**" 3. Drag & Drop the just downloaded .zip file into the dropzone 4. Press '**Next**' until the application is imported and installed
	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. 5. Go back to "**App Builder**" 6. Go to "**Workspace Utilities**"

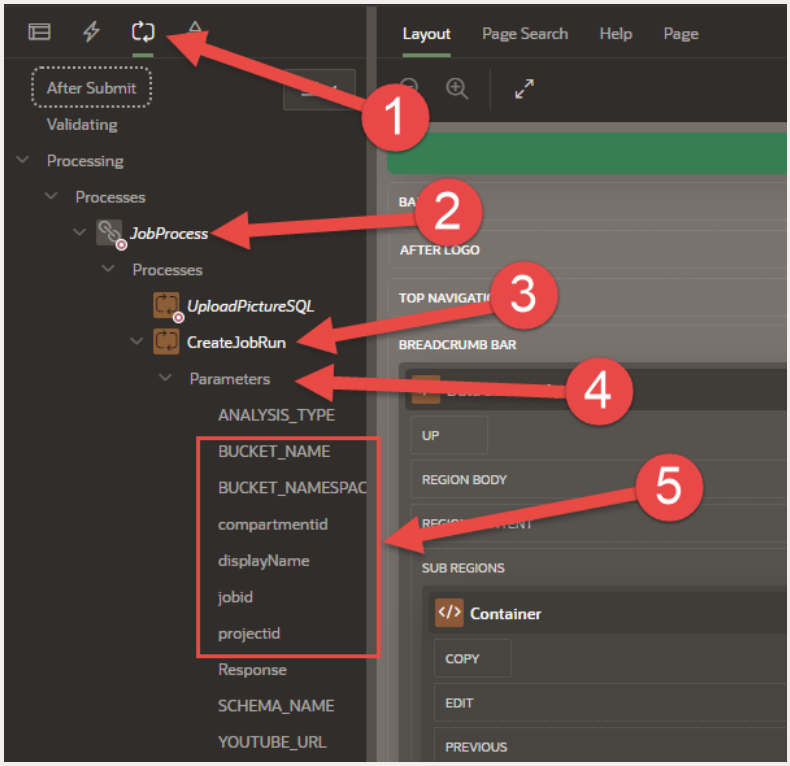


7. Go to "**Web Credentials**"
8. Select "**OCI_API**" from the list



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.

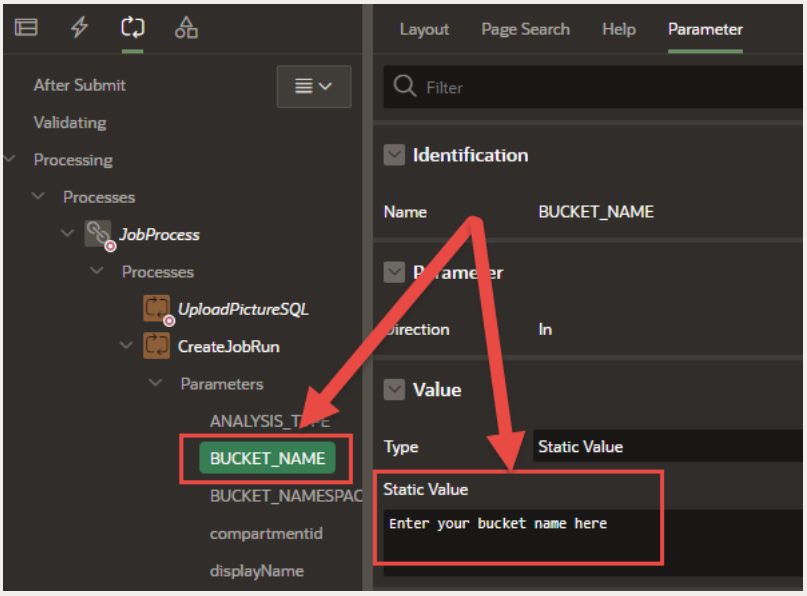


Third, you will configure the data sources. These are used e.g., when you upload a .jpg file to a bucket.

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
    - **Comparmentid.** 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.

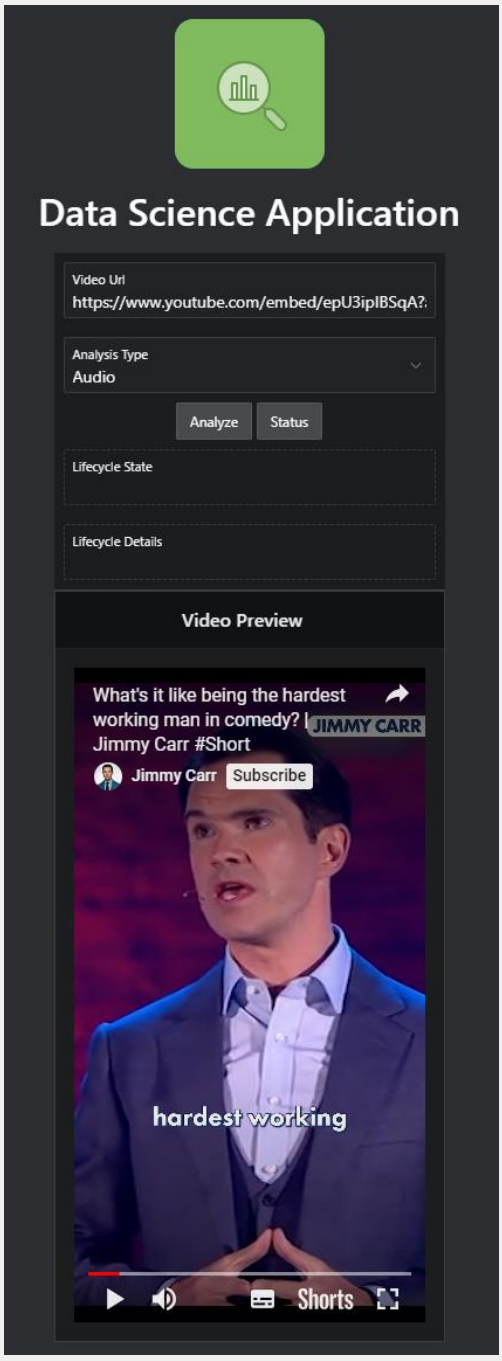


Example of BUCKET_NAME and replacing the static value with the Bucket Name

18. Save and run the application.

END EXERCISE 4

Lab 5.

WHAT YOU SEE	WHAT YOU DO
	1. Step into your Application and click "**Run Application**" 2. Enter a **YouTube URL**. Please note: • 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 seconds 5. Click on '**Status'** 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. When the processing is done, the results will show automatically in-screen. To do Video processing: 6. Enter a YouTube URL 7. 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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Manage Offensive Behavior Using AI Language, Speech, and Video with Oracle APEX