



DIY – Build Your Own Report Workshop in APEX



Luis Flores

Co-Speaker

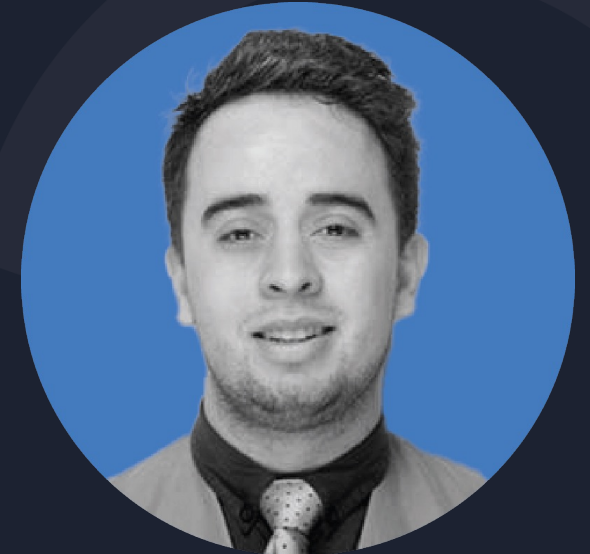
Senior Architect



W [linkedin.com/in/luis-gerardo-954a9a1a7/](https://www.linkedin.com/in/luis-gerardo-954a9a1a7/)



W luis.flores@viscosityna.com



Diego Fion

Speaker

Solutions Architect



W [linkedin.com/in/dfion](https://www.linkedin.com/in/dfion)



W dfion@viscosityna.com

Why a Report Workshop?

Benefits

- Custom Functionality.
- Let power users handle their data sources.
- User-friendly and easy to use.
- Flexible integrations for developers and end-users.
- Control Over Updates and Maintenance

Building Steps

Building Steps

- Configure APEX Office Print on DBS and APEX.
- Understand the use cases.
- Create Database Objects.
- Create custom Utils to interact with Database Objects.
- Build the Screens.
- Test and check the results.

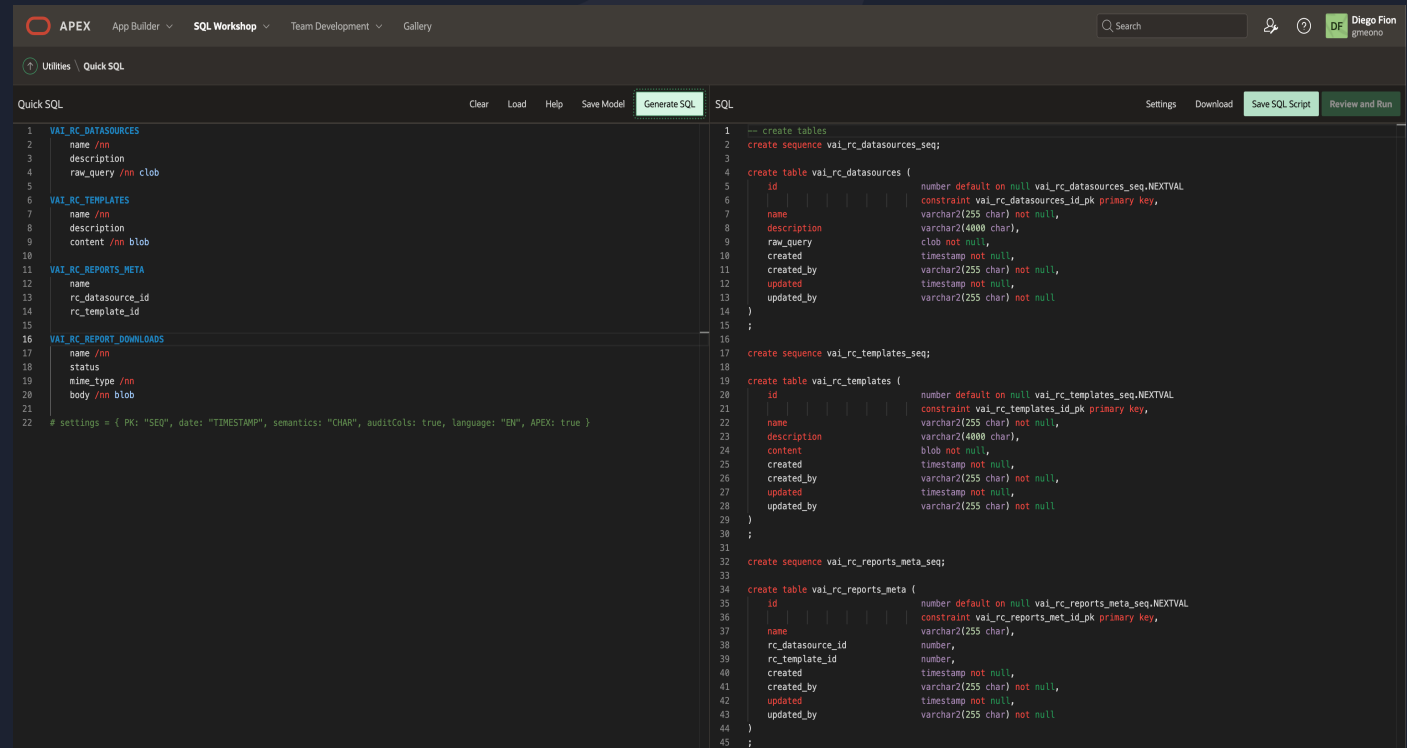
Install AOP

1. Unzip the file you downloaded from <https://www.apexofficeprint.com>
2. Install the PL/SQL API.
3. Go to APEX to SQL Workshop > SQL Scripts > Upload
4. Select file /apex_version_\- 5. Give it a name and click the Upload button.
- 6. Click the run icon for the script you just uploaded, confirm that the schema in the upper right-hand corner of the screen is correct, and click Run Now.
- 7. All statements should be successful.

For a detailed reference, go to: <https://www.apexofficeprint.com/docs/quick-install.html>

Create Database Objects.

- Go to SQL Workshop > Utilities > Quick SQL
- Paste the Quick SQL code.
- Modify according to your needs.
- Click “Generate SQL” option.
- Deploy it in your Database.



```
1 VAI_RC_DATASOURCES
2   name /n
3   description
4   raw_query /n clob
5
6 VAI_RC_TEMPLATES
7   name /n
8   description
9   content /n blob
10
11 VAI_RC_REPORTS_META
12   name
13   rc_datasource_id
14   rc_template_id
15
16 VAI_RC_REPORT_DOWNLOADS
17   name /n
18   status
19   mine_type /n
20   body /n blob
21
22 # settings = { PK: "SEQ", date: "TIMESTAMP", semantics: "CHAR", auditCols: true, language: "EN", APEX: true }
```

```
1 -- create tables
2 create sequence vai_rc_datasources_seq;
3
4 create table vai_rc_datasources (
5   id number default on null vai_rc_datasources_seq.NEXTVAL
6   constraint vai_rc_datasources_id_pk primary key,
7   name varchar2(255 char) not null,
8   description varchar2(4000 char),
9   raw_query clob not null,
10  created timestamp not null,
11  created_by varchar2(255 char) not null,
12  updated timestamp not null,
13  updated_by varchar2(255 char) not null
14 )
15 ;
16
17 create sequence vai_rc_templates_seq;
18
19 create table vai_rc_templates (
20   id number default on null vai_rc_templates_seq.NEXTVAL
21   constraint vai_rc_templates_id_pk primary key,
22   name varchar2(255 char) not null,
23   description varchar2(4000 char),
24   content blob not null,
25   created timestamp not null,
26   created_by varchar2(255 char) not null,
27   updated timestamp not null,
28   updated_by varchar2(255 char) not null
29 )
30 ;
31
32 create sequence vai_rc_reports_meta_seq;
33
34 create table vai_rc_reports_meta (
35   id number default on null vai_rc_reports_meta_seq.NEXTVAL
36   constraint vai_rc_reports_meta_id_pk primary key,
37   name varchar2(255 char),
38   rc_datasource_id number,
39   rc_template_id number,
40   created timestamp not null,
41   created_by varchar2(255 char) not null,
42   updated timestamp not null,
43   updated_by varchar2(255 char) not null
44 )
45 ;
```

Install VAI_RC_UTILS

- Download the VAI_RC_UTILS.sql package and run it into your database.
- Configure the necessary variables to use your AOP installation.
- Review package functions and procedures for a better understanding.

```
-- Create a custom record type to hold different data types
CREATE OR REPLACE TYPE t_varchar_array_record AS OBJECT (
    nm_val NUMBER,
    v2_val VARCHAR2(4000),
    cb_val CLOB,
    dt_val DATE
);

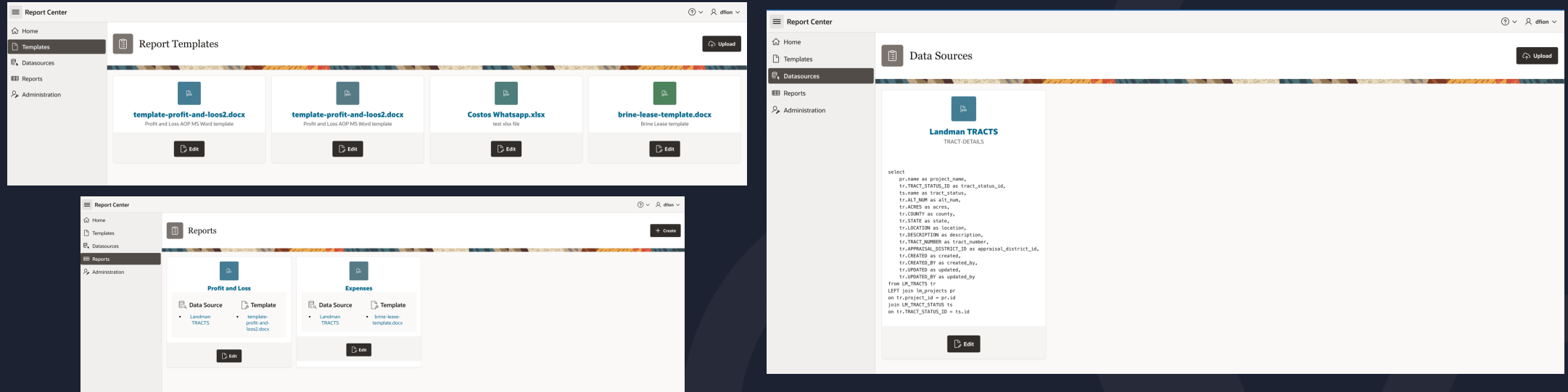
-- Create a nested table type based on the custom record type
CREATE OR REPLACE TYPE t_varchar_array IS TABLE OF t_varchar_array_record;

CREATE OR REPLACE PACKAGE VAI_RC_UTILS AS
/*
    @Purpose: Provides utilities for generating and storing AOP reports
    @Author: Diego Fion
    @Date: 2023-04-27
*/

/*
    @Function: get_json_object_from_raw_query
    @Purpose: Converts a given raw SQL query into a JSON query notation
    @param p_sql: The raw SQL query to be converted
    @param p_datasources_common_parameters: An optional array of dynamic parameters to be used
    @return: A CLOB containing the converted SQL query in JSON notation
    @Note:
        t_varchar_array_record supported types are:
            nm_val -> NUMBER
            v2_val -> VARCHAR2
            cb_val -> CLOB
            dt_val -> DATE
    @Example:
        DECLARE
            l_sql CLOB := 'SELECT * FROM employees WHERE department_id = #P1# AND manager_id = #P2#';
            l_params t_varchar_array := t_varchar_array(); -- Initialize the nested table
        BEGIN
            l_params.extend(3);
            l_params(1) := t_varchar_array_record(10, NULL, empty_clob(), NULL); -- Number (dept_id)
            l_params(2) := t_varchar_array_record(101, NULL, empty_clob(), NULL); -- Number (manager_id)
            l_params(3) := t_varchar_array_record(NULL, 'IT_PROG', empty_clob(), NULL); -- Var (job_id)
            DBMS_OUTPUT.PUT_LINE(VAI_RC_UTILS.get_json_object_from_raw_query(l_sql, l_params));
        END;
*/
FUNCTION get_json_object_from_raw_query(p_sql IN CLOB
                                        , p_datasources_common_parameters IN t_varchar_array)
RETURN CLOB;

/*
    @Function: get_json_object
    @Purpose: Generates a JSON object based on data source IDs
    @param p_datasource_ids: A CLOB containing a comma-separated list of data source IDs
*/
```


Install the VAI RC Sample App



- Go to App Builder > Import and follow the import steps.
- Verify the app was installed correctly.
- You should have:
 - Template Maintenance Screen
 - Data sources Screen
 - Reports Screen

Demo and Use Cases

Questions?

Follow Us Online!



Facebook.com/ViscosityNA



LinkedIn.com/company/Viscosity-North-America



[@ViscosityNA](https://twitter.com/ViscosityNA)



[Viscosity North America](https://www.youtube.com/ViscosityNorthAmerica)



[Viscosity_NA](https://www.instagram.com/Viscosity_NA)