

# Corso APEX – Carpisa - Yamamay

- **Ing. Roberto Capancioni**
- Lezione 11 - 19 Settembre 2023

# Chi Sono

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# JSON

---

# JSON

Il dato elementare JSON è  
una coppia chiave:valore

**"Nome" : "Mario"**

# JSON

I dati sono coppie del tipo  
chiave:valore separati da virgole

"Nome": "Mario", "Cognome": "Rossi", "Eta": 30

# JSON

Le parentesi graffe racchiudono un oggetto (elenco di coppie chiave:valore)

```
{"Nome": "Mario", "Cognome": "Rossi", "Eta": 30}
```

# JSON

Le parentesi quadre racchiudono un array  
(lista di valori)

"Nomi": ["Mario", "Anna", "Paola"]

# JSON

La Chiave è sempre una Stringa (con i doppi apici)



```
"Nomi": ["Mario", "Anna", "Paola"]
```



# JSON {

Il valore può essere:

- una stringa
- un numero
- un oggetto
- un array
- un boolean (true/false)
- null

```
"name": "Mario",
"surname": "Rossi",
"telephone": null,
"active": true,
"favoriteNumber": 54,
"birthday": {
  "day": 1,
  "month": 1,
  "year": 2000
},
"languages": [ "it", "en" ],
"addresses": [
  {"type": "Main",
   "address": "Oxfors St.",
   "city": "London"
  },
  {"type": "Alternative",
   "address": "Cambridge St.",
   "city": "London"
  }
]
```

Array di Oggetti

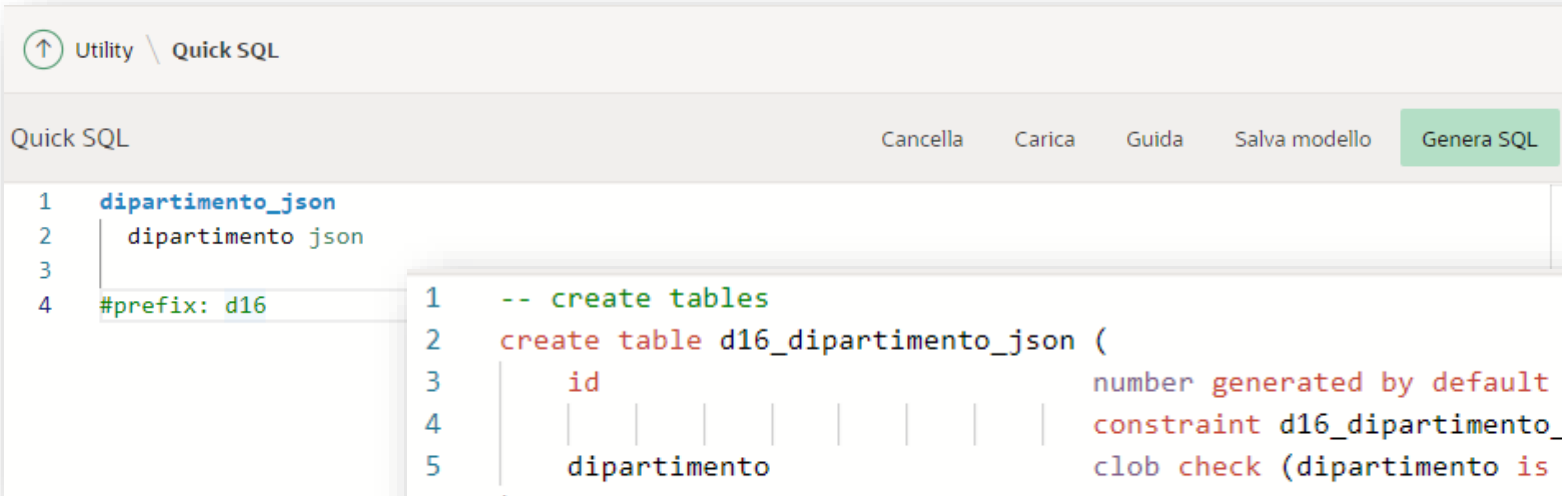
# D11 Ancora su JSON

---

# D11 JSON

dipartimento\_json  
dipartimento json

#prefix: D11



```
1 -- create tables
2 create table d16_dipartimento_json (
3 | id number generated by default on null as identity
4 | | | | | | | | constraint d16_dipartimento_j_id_pk primary key,
5 | dipartimento clob check (dipartimento is json)
6 )
7 ;
8
```

```
create table D11_dipartimento_json (
    id number generated by default on null as identity
    constraint D11_dipartimento_j_id_pk primary key,
    dipartimento clob check (dipartimento is json)
)
;
```

# D11 JSON

dipartimento\_json  
dipartimento json

#prefix: D11

```
insert into D11_dipartimento_json (dipartimento)
values (
    '{"dipartimenti": [{ "name": "dipartimento1","label": "My dipartimento 1","value": "ABCD"},
                        { "name": "dipartimento2","label": "My dipartimento 2","value": "XYZ"},
                        { "name": "dipartimento3","label": "My dipartimento 3","value": "Y"}
                      ]
    }'
);
```

# D11 JSON

```
insert into D11_dipartimento_json (dipartimento)
values (
```

```
'{"dipartimenti": [{
    : "dipartimento1", "label": "My dipartimento 1", "value": "ABCD"},
  {"name": "dipartimento2", "label": "My dipartimento 2", "value": "XYZ"},
  {"name": "dipartimento3", "label": "My dipartimento 3", "value": "Y"}
]
}';
```

JSON non  
valido

```
dipartimento_json (dipartimento)
```

```
'{"dipartimenti": [{
    : "dipartimento1", "label": "My dipartimento 1", "value": "ABCD"},
  {"name": "dipartimento2", "label": "My dipartimento 2", "value": "XYZ"},
  {"name": "dipartimento3", "label": "My dipartimento 3", "value": "Y"}
]
}';
```

```
);
```

ati Spiega Descrivi SQL salvato Cronologia

ORA-02290: restrizione di controllo violata (AT0.SYS\_C0087732)  
ORA-06512: a "SYS.DBMS\_SQL", line 1721

```
1. insert into d16_dipartimento_json (dipartimento)
2.   values (
3.     '{"dipartimenti": [{
      : "dipartimento1", "label": "My
dipartimento 1", "value": "ABCD"},
```

# D11 JSON

```
select dipartimento
  from D11_dipartimento_json;
```

## DIPARTIMENTO

```
{"dipartimenti": [{ "name": "dipartimento1", "label": "My dipartimento 1", "value": "ABCD"}, { "name": "dipartimento2", "label": "My dipartimento 2", "value": "XYZ"}, { "name": "dipartimento3", "label": "My dipartimento 3", "value": "Y"} ] }
```

1 righe restituite in 0,01 secondi   Scarica

🔄 ↺ 🔍 ✎ A:

```
1
2 select dipartimento.dipartimenti
3   from d16_dipartimento_json;
4
5
6
```

Risultati   Spiega   Descrivi   SQL salvato   Cronologia



Errore alla riga 2/8: ORA-00904: "DIPARTIMENTO"."DIPARTIMENTI": identificativo non valido

Sarebbe comodo una notazione  
puntata (dot notation)

# D11 JSON

```
select d.dipartimento.dipartimenti  
from D11_dipartimento_json d;
```

Risultati

Spiega

Descrivi

SQL salvato

Cronologia

## DIPARTIMENTI

```
[{"name":"dipartimento1","label":"My dipartimento 1","value":"ABCD"}, {"name":"dipartimento2","label":"My dipartimento 2","value":"XYZ"}, {"name":"dipartimento3","label":"My dipartimento 3","value":"Y"}]
```

1 righe restituite in 0,00 secondi

[Scarica](#)

# D11 JSON

```
select d.dipartimento.dipartimenti.name as name,  
       d.dipartimento.dipartimenti.label as label  
from D11_dipartimento_json d;
```

NAME	LABEL
["dipartimento1","dipartimento2","dipartimento3"]	["My dipartimento 1","My dipartimento 2","My dipartimento 3"]



# D11 JSON

```
select d.dipartimento.dipartimenti.name as name,  
       d.dipartimento.dipartimenti.label as label  
from D11_dipartimento_json d;
```

NAME	LABEL
["dipartimento1","dipartimento2","dipartimento3"]	["My dipartimento 1","My dipartimento 2","My dipartimento 3"]

# D11 JSON

```
create table D11_persona (  
    id    integer not null primary key,  
    persona clob not null check (persona is json)  
);
```

# D11 JSON

```
insert into D11_persona  
values ( 1, '{"id":1,
```

```
"nome":"Giovanni",  
"cognome":"Rossi",  
"indirizzo": {"via":"Viale della Vittoria",  
              "citta":"Roma",  
              "cap":"00100",  
              "provincia":"MI",  
              "telefono":null  
            }  
}');
```

```
insert into D11_persona  
values ( 2, '{"id":2,
```

```
"nome":"Maria",  
"cognome":"Verdi",  
"indirizzo": {"via":"Viale dei Giardini",  
              "citta":"Milano",  
              "cap":"20100",  
              "provincia":"MI",  
              "telefono":null  
            }  
}' );
```

# D11 JSON

```
update D11_persona
set    persona =
'{'
  "id":1,
  "nome":"Giovanni",
  "cognome":"Rossi",
  "indirizzo": {"via":"Viale della Vittoria",
    "citta":"Roma",
    "cap":"00100",
    "provincia":"RM",
    "telefono":"06 333 333"
  }
}'
where  id = 1;
```

# D11 JSON

```
update D11_persona
set    persona =
'{'
  "id":1,
  "nome":"Giovanni",
  "cognome":"Rossi",
  "indirizzo": {"via":"Viale della Vittoria",
    "citta":"Roma",
    "cap":"00100",
    "provincia":"RM",
    "telefono":"06 333 333"
  }
}'
where id = 1;
```

# D11 JSON

```
update D11_persona
set    persona = json_mergepatch (
        persona,
        '{"cognome":"Bianchi",
         "indirizzo" : {"telefono":"06 444 444"}
        }'
      )
where  id = 2;
```

```
update D11_persona
set    persona = json_mergepatch (
        persona,
        '{"titolo":"Sig.ra"}'
      )
where  id = 2;
```

# D11 JSON

```
update D11_persona  
set    persona = json_transform (  
    persona,  
    replace '$.indirizzo.telefono' = '06 999 999'  
)  
where id = 2;
```



path expression

```
update D11_persona  
set    persona = json_transform (  
    persona,  
    set '$.indirizzo.nazione' = 'IT'  
)  
where id = 2;
```



path expression

## Funzioni json\_transform:

- REMOVE
- KEEP
- RENAME
- SET
- REPLACE
- INSERT
- APPEND

# D11 JSON

```
select p.persona.titolo,  
       p.persona.nome,  
       p.persona.cognome,  
       p.persona.indirizzo.via via,  
       p.persona.indirizzo.citta citta,  
       p.persona.indirizzo.cap cap,  
       p.persona.indirizzo.provincia provincia,  
       p.persona.indirizzo.telefono telefono,  
       p.persona.indirizzo.nazione nazione  
from D11_persona p;
```



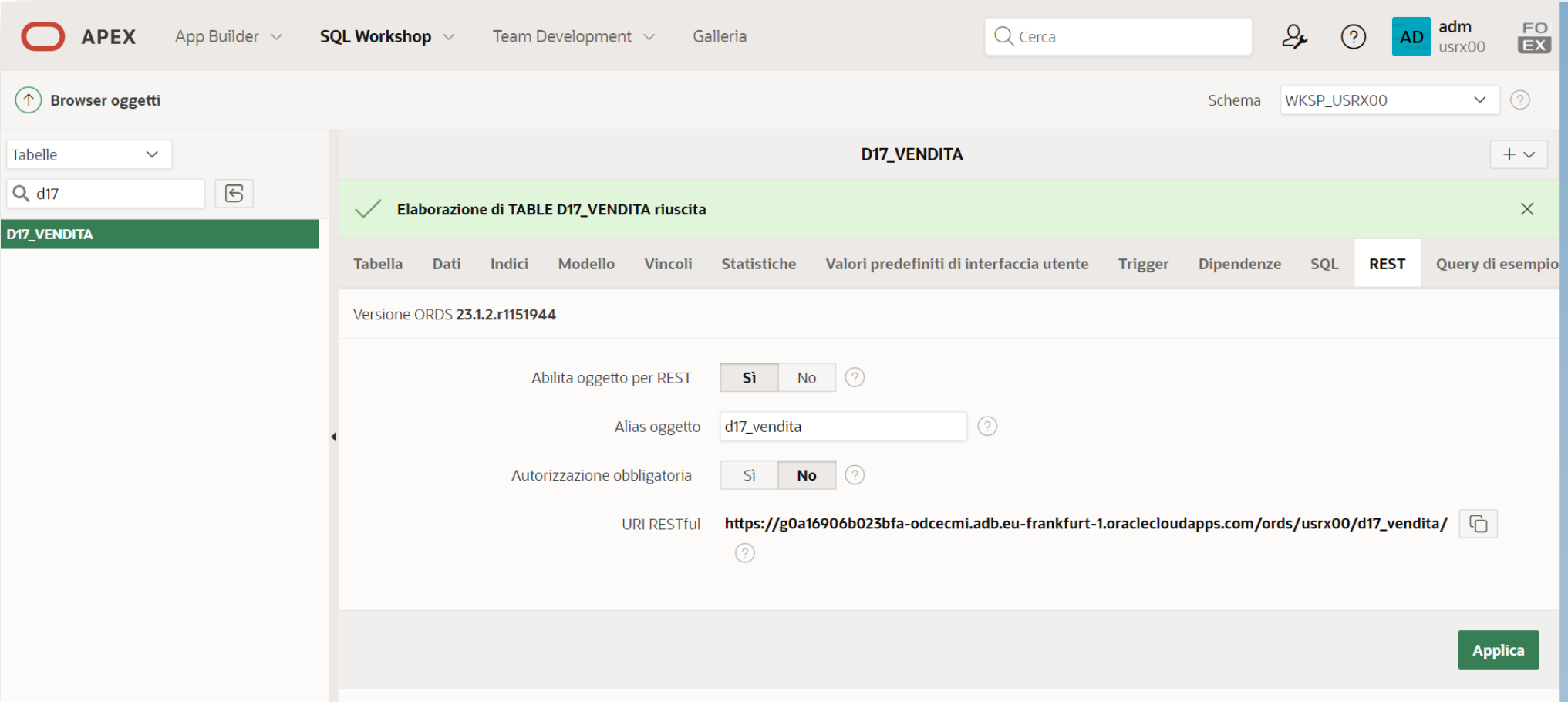
# D11 JSON

```
select json_value (persona,'$.titolo' returning varchar2) titolo,  
       json_value (persona,'$.nome' returning varchar2) nome,  
       json_value (persona,'$.cognome' returning varchar2) cognome,  
       json_value (persona,'$.indirizzo.via' returning varchar2) via,  
       json_value (persona,'$.indirizzo.citta' returning varchar2) citta  
from   D11_persona p
```

# d11 REST

---

# d11 REST



[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11\\_vendita/](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11_vendita/)

# d11 REST

APEX

App Builder

SQL Workshop

Team Development

Galleria

Cerca

AD

adm

usrx00

Servizi RESTful

Oggetti abilitati per ORDS

Schema

WKSP\_USRX00

Servizi dati RESTful

Oggetti abilitati

Moduli

Privilegi

Ruoli

Oggetti abilitati per RESTful

Vai

1. Report primario

Azioni

Schema di analisi	Oggetto analizzato	Alias oggetto	Tipo	Stato	Autenticazione REST automatica	Operazioni consentite	Percorso tipo	Con alias
WKSP_USRX00	D16_PERSONA	d16_persona	TABLE	ENABLED	DISABLED	-	ENABLED	
WKSP_USRX00	<u>D16_VENDITA</u>	<u>d16_vendita</u>	TABLE	ENABLED	DISABLED	-	ENABLED	

Browser oggetti

Schema

WKSP\_USRX00

Tabelle

d16

D16\_DIPARTIMENTO\_JSON

D16\_EVENTI

D16\_PERSONA

D16\_VENDITA

D16\_VENDITA

Tabella

Dati

Indici

Modello

Vincoli

Statistiche

Valori predefiniti di interfaccia utente

Trigger

Dipendenze

SQL

REST

Query di esempi

Versione ORDS 23.1.2.r1151944

Abilita oggetto per REST

Sì

No

Alias oggetto

d16\_vendita

Autorizzazione obbligatoria

Sì

No

URI RESTful

https://g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16\_vendita/

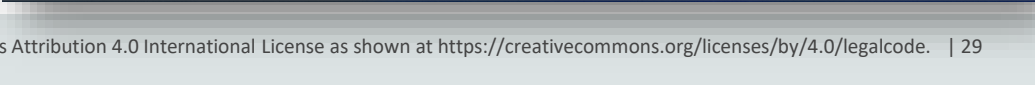
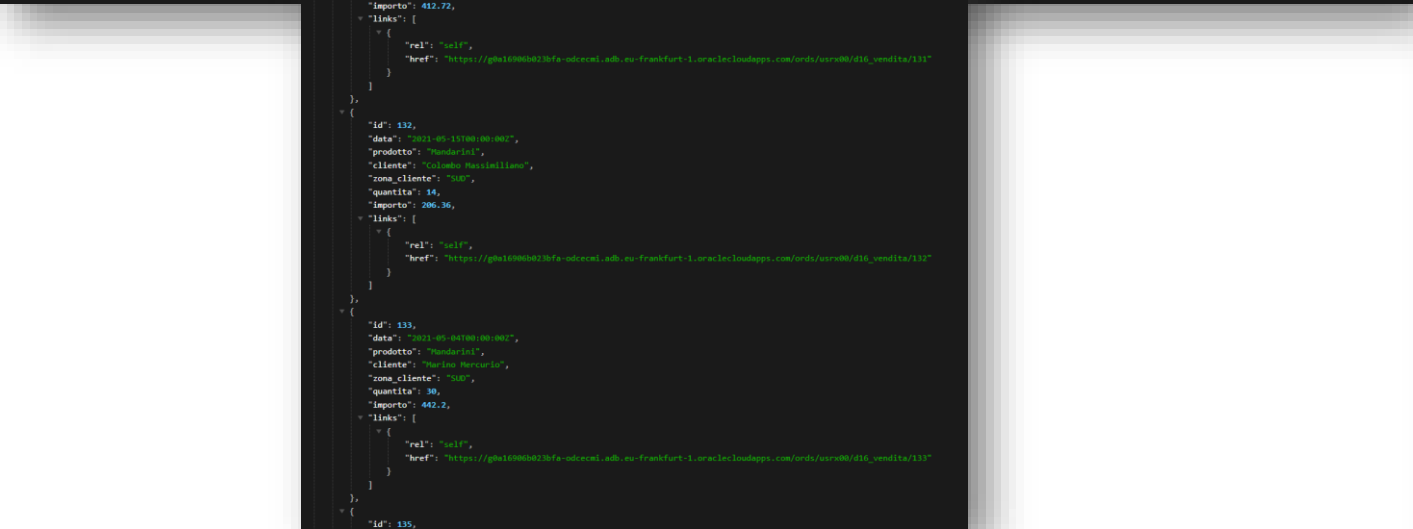
Applica

[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11\\_vendita/](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11_vendita/)

ORACLE

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[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11\\_vendita/](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11_vendita/)



# d11 REST

The screenshot shows the Oracle SQL Command Editor interface. At the top, the 'Comandi SQL' tab is active, and the 'Schema' dropdown is set to 'WKSP\_USRX00'. The 'Lingua' dropdown is set to 'SQL', and the 'Righe' dropdown is set to '100'. The 'Cancella comando' and 'Trova tabelle' buttons are visible. The SQL editor contains the following code:

```
1 select
2 apex_web_service.make_rest_request(
3   p_url => 'https://g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com' ||
4   '/ords/usrx00/d16_vendita/',
5   p_http_method => 'GET'
6 ) vendita
7 from dual
```

Below the editor, the 'Risultati' tab is active, showing the JSON response of the REST API call. The response is titled 'VENDITA' and contains a list of items with their details, including dates, products, clients, quantities, and import values.

```
select apex_web_service.make_rest_request(
  p_url => 'https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/' ||
  '/ords/cy0/d11_vendita/',
  p_http_method => 'GET'
) vendita
from dual
```

# d11 REST

```
select *
  from json_table(
apex_web_service.make_rest_request(
  p_url => 'https://cnde8nae4maapcd-capancioni.adb.eu-zurich-
1.oraclecloudapps.com/ords/cy0/' || '/ords/cy0/d11_vendita/',
  p_http_method => 'GET'
),
'$.*items[*]' columns(
      id                number                path '$.id'
    ,data               date                  path '$.data'
    ,prodotto           varchar2(100)         path '$.prodotto'
    ,cliente            varchar2(100)         path '$.cliente'
    ,zona_cliente       varchar2(100)         path '$.zona_cliente'
    ,quantita           number                path '$.quantita'
    ,importo            number                path '$.importo'
  )
);
```

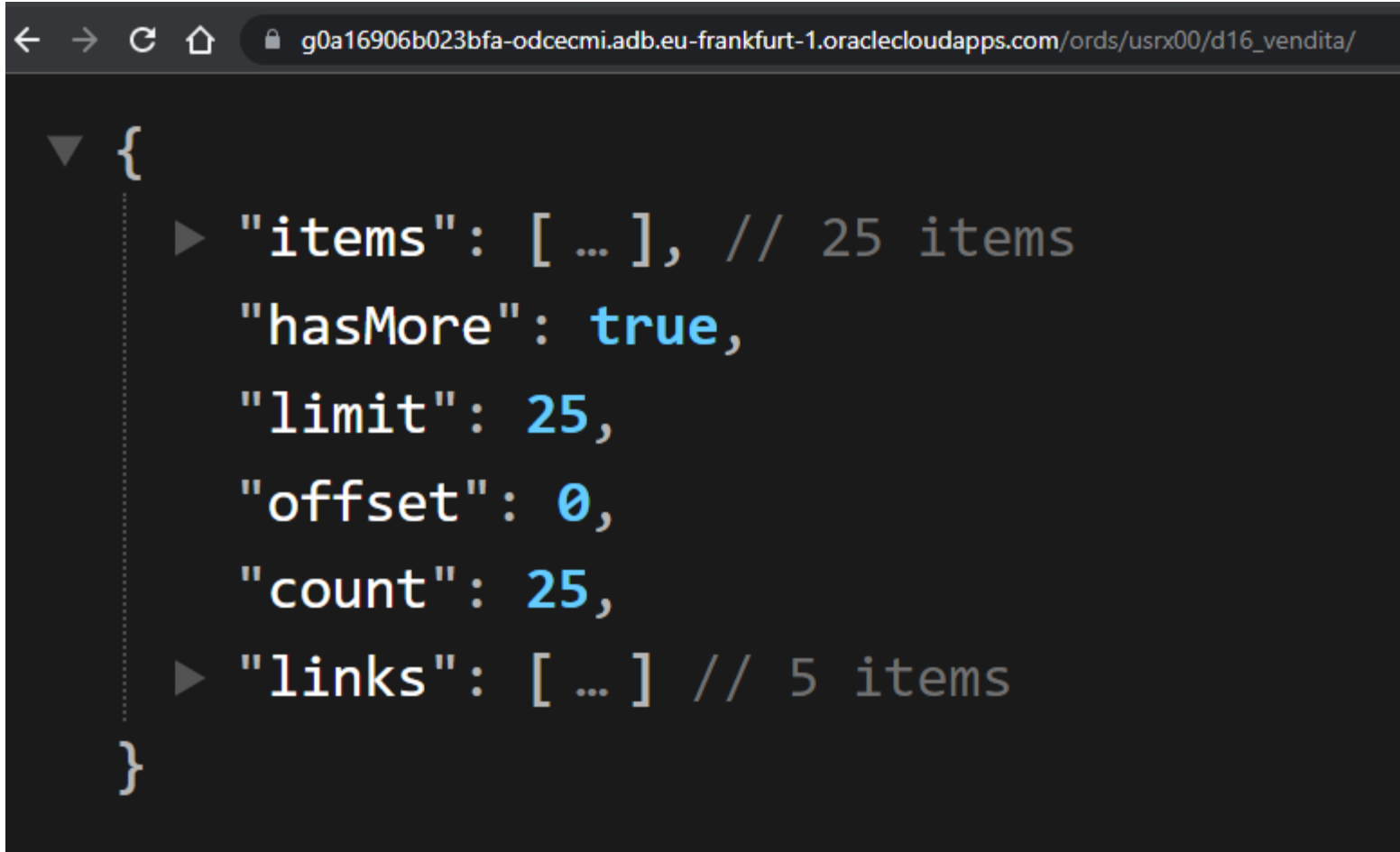
# d11 REST

```
8
9  select *
10  from json_table(
11  apex_web_service.make_rest_request(
12    p_url => 'https://g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16_vendita/',
13    p_http_method => 'GET'
14  ),
15  '$.items[*]' columns(
16    id          number      path '$.id'
17    ,data        date        path '$.data'
18    ,prodotto    varchar2(100) path '$.prodotto'
19    ,cliente     varchar2(100) path '$.cliente'
20    ,zona_cliente varchar2(100) path '$.zona_cliente'
21    ,quantita    number      path '$.quantita'
22    ,importo     number      path '$.importo'
23  )
24 );
```

Risultati						
Spiega Descrivi SQL salvato Cronologia						
ID	DATA	PRODOTTO	CLIENTE	ZONA_CLIENTE	QUANTITA	IMPORTO
131	07/08/2020	Mandarino	Costa Marianna	NORD2	28	412,72
132	15/05/2021	Mandarini	Colombo Massimiliano	SUD	14	206,36
133	04/05/2021	Mandarini	Marino Mercurio	SUD	30	442,2



# d11 REST

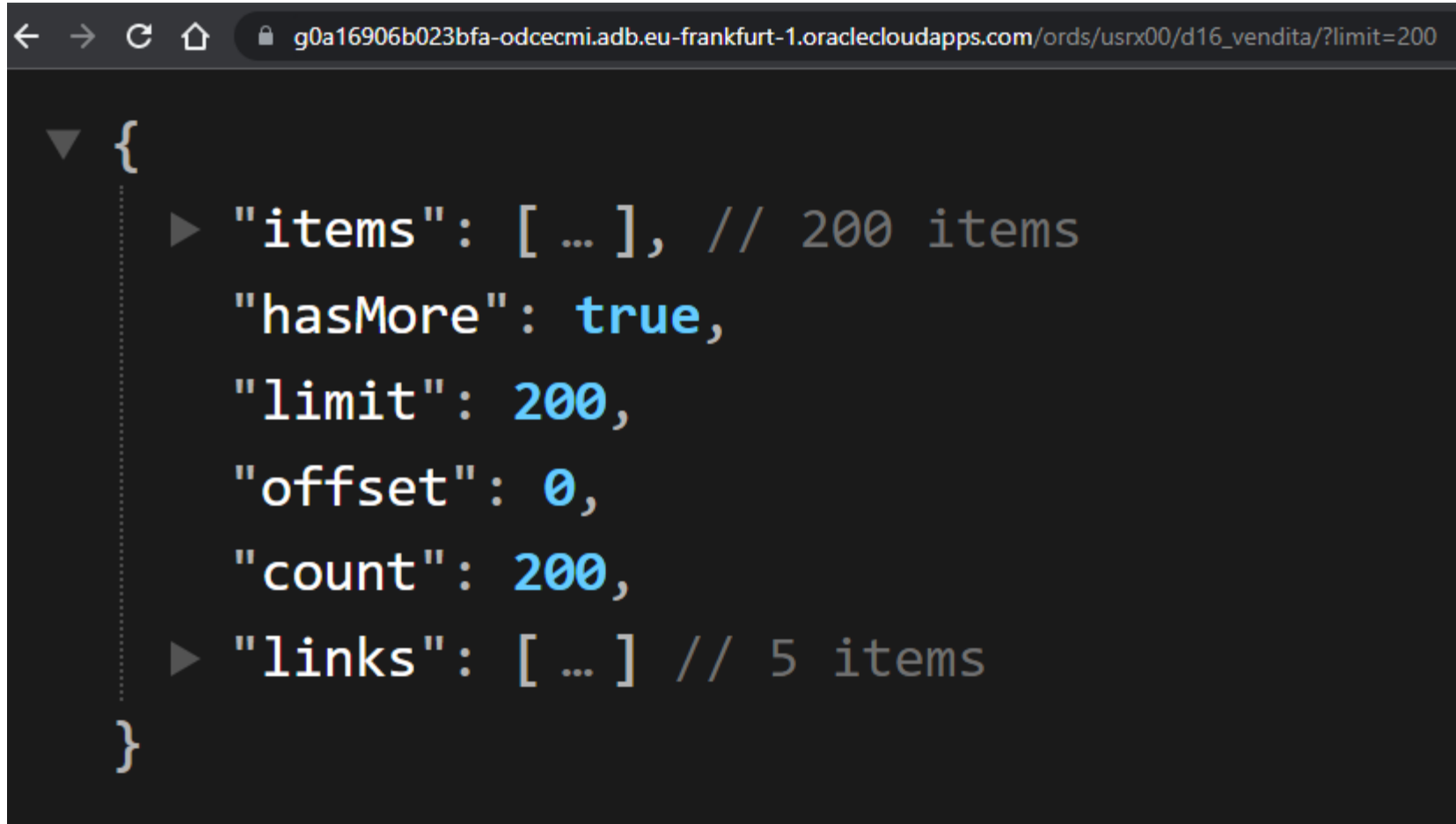


A screenshot of a REST client interface. The address bar shows the URL: `g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16_vendita/`. The response body is a JSON object displayed in a dark-themed editor with syntax highlighting. The JSON structure is as follows:

```
{
  "items": [ ... ], // 25 items
  "hasMore": true,
  "limit": 25,
  "offset": 0,
  "count": 25,
  "links": [ ... ] // 5 items
}
```

# d11 REST

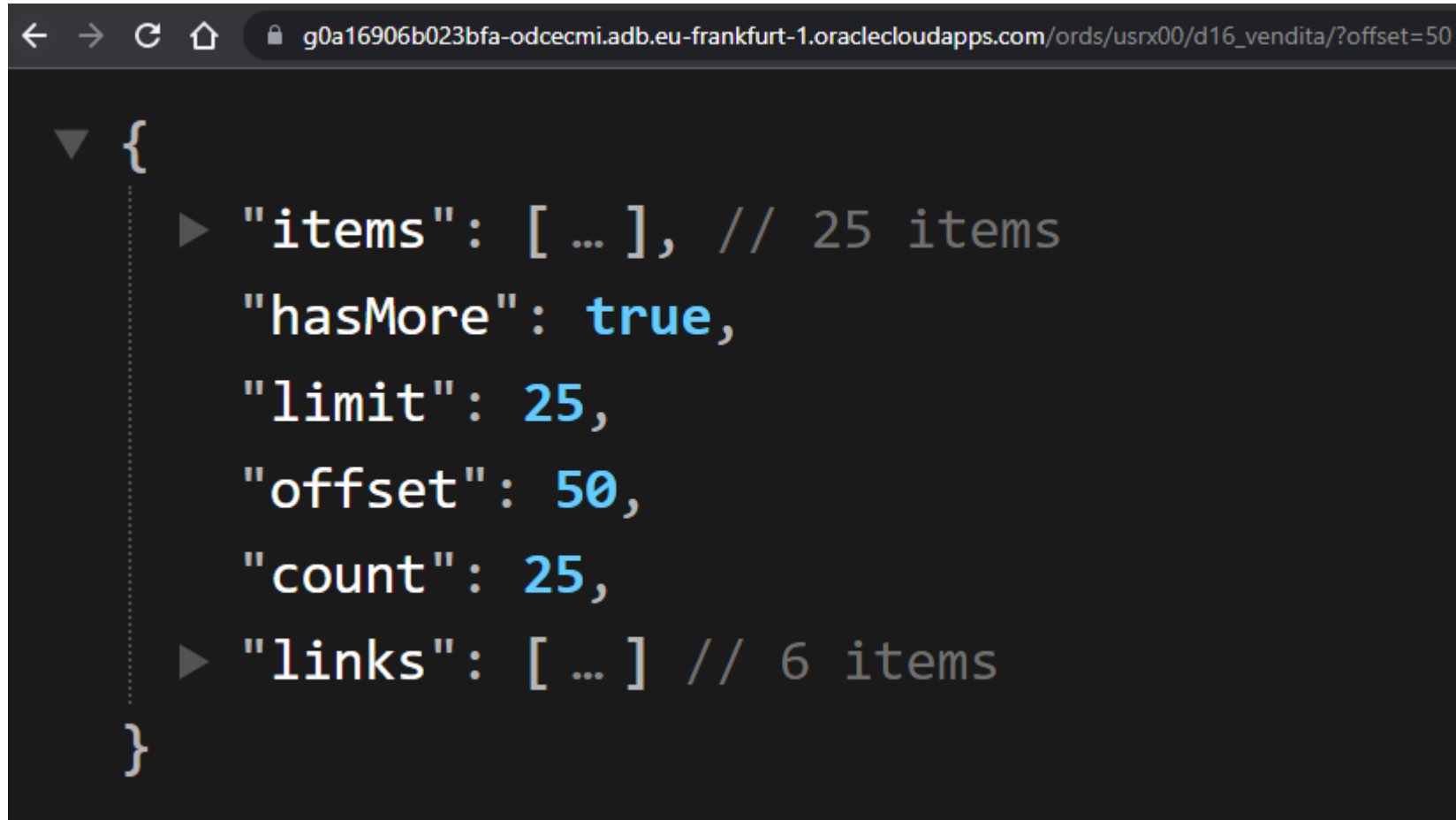
[https://cn8e8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11\\_vendita/?limit=200](https://cn8e8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11_vendita/?limit=200)

A screenshot of a web browser window. The address bar shows the URL: g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16\_vendita/?limit=200. The main content area displays a JSON response, which is partially expanded to show the following fields: "items": [ ... ], // 200 items; "hasMore": true; "limit": 200; "offset": 0; "count": 200; "links": [ ... ] // 5 items. The JSON is color-coded with blue for booleans and numbers, and grey for strings and comments.

```
▼ {  
  ▶ "items": [ ... ], // 200 items  
    "hasMore": true,  
    "limit": 200,  
    "offset": 0,  
    "count": 200,  
  ▶ "links": [ ... ] // 5 items  
}
```

# d11 REST

[https://cn8e8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11\\_vendita/?offset=50](https://cn8e8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11_vendita/?offset=50)



The screenshot shows a web browser window with the address bar displaying the URL: `g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16_vendita/?offset=50`. The main content area shows a JSON response with the following structure:

```
{
  "items": [ ... ], // 25 items
  "hasMore": true,
  "limit": 25,
  "offset": 50,
  "count": 25,
  "links": [ ... ] // 6 items
}
```

# d11 REST

[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11\\_vendita/?q={"Prodotto":{"\\$instr":"cotto"}}](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11_vendita/?q={)



```
▼ {
  ▼ "items": [
    ▼ {
      "id": 1,
      "data": "2020-08-26T00:00:00Z",
      "prodotto": "Prosciutto cotto",
      "cliente": "Russo Maida",
      "zona_cliente": "SUD",
      "quantita": 24,
      "importo": 413.04,
      ▼ "links": [
        ▼ {
          "rel": "self",
          "href": "https://g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16_vendita/1"
        }
      ]
    },
    ▼ {
```

# d11 REST

[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11\\_vendita/?q={"importo":{"\\$lte":100}}](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11_vendita/?q={)

```
▼ {
  ▼ "items": [
    ▼ {
      "id": 139,
      "data": "2021-01-24T00:00:00Z",
      "prodotto": "Latte",
      "cliente": "Esposito Marinetta",
      "zona_cliente": "NORD",
      "quantita": 18,
      "importo": 72.93,
      ▼ "links": [
        ▼ {
          "rel": "self",
          "href": "https://g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16_vendita/139"
        }
      ]
    },
    ▼ {
```

# d11 REST

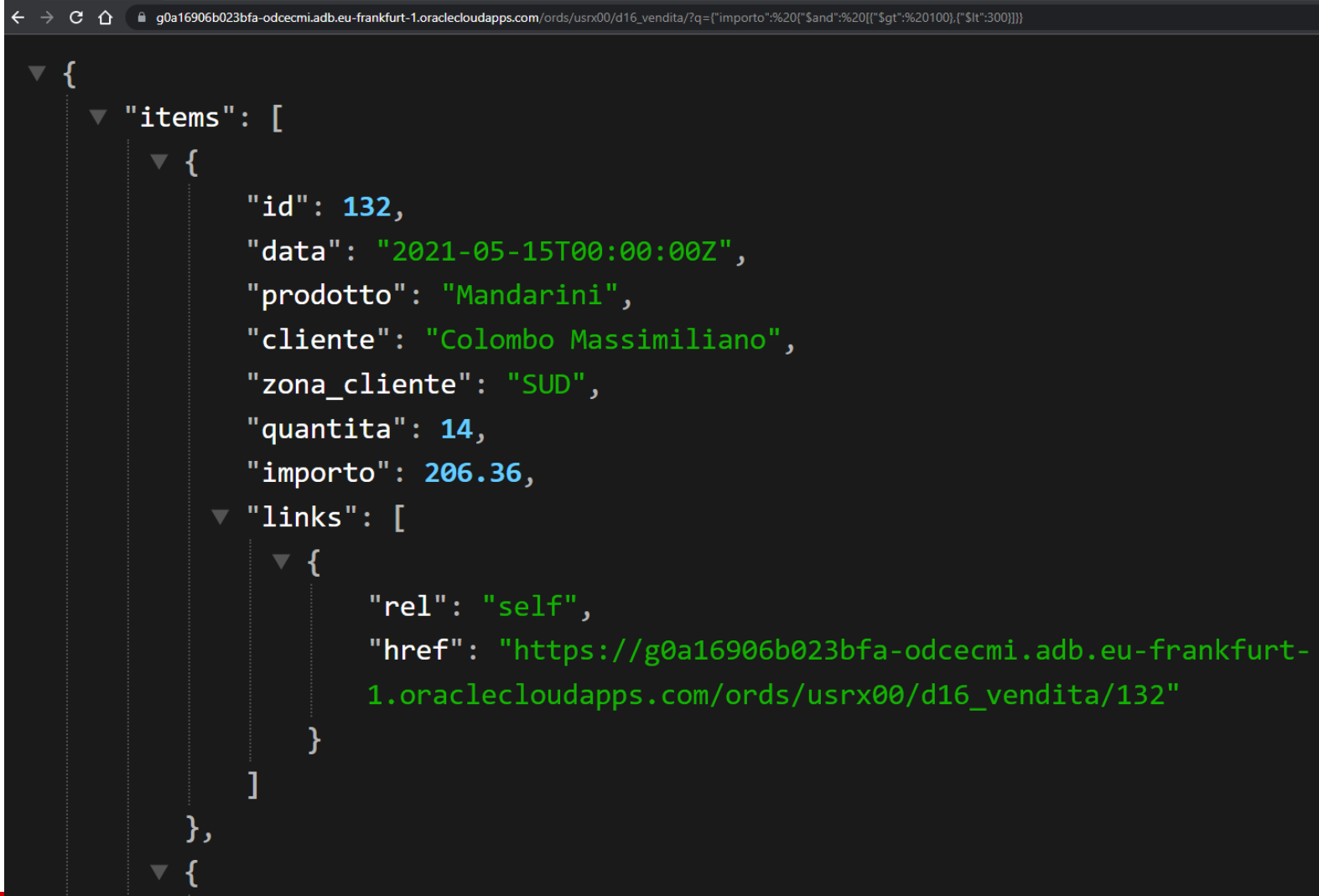
[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11\\_vendita/?q={"data":{"\\$lte":{"\\$date":"2021-03-08T23:59:59Z"}}}}](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11_vendita/?q={)

```
g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16_vendita/?q={"data":{"$lte":{"$date":"2021-03-08T23:59:59Z"}}}}
{
  "items": [
    {
      "id": 131,
      "data": "2020-08-07T00:00:00Z",
      "prodotto": "Mandarino",
      "cliente": "Costa Marianna",
      "zona_cliente": "NORD2",
      "quantita": 28,
      "importo": 412.72,
      "links": [
        {
          "rel": "self",
          "href": "https://g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16_vendita/131"
        }
      ]
    },
    {

```

# d11 REST

[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11\\_vendita/?q={"importo": {"\\$and": \[{"\\$gt": 100}, {"\\$lt": 300}\]}}](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11_vendita/?q={)



```
{
  "items": [
    {
      "id": 132,
      "data": "2021-05-15T00:00:00Z",
      "prodotto": "Mandarini",
      "cliente": "Colombo Massimiliano",
      "zona_cliente": "SUD",
      "quantita": 14,
      "importo": 206.36,
      "links": [
        {
          "rel": "self",
          "href": "https://g0a16906b023bfa-odcecmi.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d16_vendita/132"
        }
      ]
    }
  ],
  ...
}
```

# d11 REST

[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11\\_vendita/?q={"importo": {"\\$and": \[{"\\$gt": 100}, {"\\$lt": 300}\]}}](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11_vendita/?q={)

"\$eq"	:	string		number		date
"\$ne"	:	string		number		date
"\$lt"	:	number		date		
"\$lte"	:	number		date		
"\$gt"	:	number		date		
"\$gte"	:	number		date		
"\$instr"	:	string				
"\$ninstr"	:	string				
"\$like"	:	string				
"\$null"	:	null				
"\$notnull"	:	null				
"\$between"	:	betweenValue				



# d11 REST

## Syntax

```
APEX_WEB_SERVICE.MAKE_REST_REQUEST (  
  p_url                                IN  VARCHAR2,  
  p_http_method                        IN  VARCHAR2,  
  p_username                           IN  VARCHAR2 DEFAULT NULL,  
  p_password                           IN  VARCHAR2 DEFAULT NULL,  
  p_scheme                             IN  VARCHAR2 DEFAULT 'Basic',  
  p_proxy_override                       IN  VARCHAR2 DEFAULT NULL,  
  p_transfer_timeout                     IN  NUMBER   DEFAULT 180,  
  p_body                                IN  CLOB      DEFAULT EMPTY_CLOB(),  
  p_body_blob                           IN  BLOB      DEFAULT EMPTY_BLOB(),  
  p_parm_name                           IN  apex_application_global.vc_arr2  
                                         DEFAULT empty_vc_arr,  
  p_parm_value                          IN  apex_application_global.vc_arr2  
                                         DEFAULT empty_vc_arr,  
  p_wallet_path                         IN  VARCHAR2 DEFAULT NULL,  
  p_wallet_pwd                          IN  VARCHAR2 DEFAULT NULL,  
  p_https_host                          IN  VARCHAR2 DEFAULT NULL,  
  p_credential_static_id               IN  VARCHAR2 DEFAULT NULL,  
  p_token_url                          IN  VARCHAR2 DEFAULT NULL )  
RETURN CLOB;
```

 Copy

# d11 REST

APEX App Builder SQL Workshop Team Development Galleria

Cerca

AD adm usrx00

Servizi RESTful \ Moduli \ Definizione modulo

Schema WKSP\_USRX00

Definizione modulo ORDS

Nome modulo D17

Percorso di base /d17/

Pubblicato ☒

Dimensione impaginazione 25

Origini consentite

Commenti

Legenda: ☒ Modello protetto completamente da un privilegio

Servizi dati RESTful

Oggetti abilitati

Moduli

Privilegi

Ruoli

Annulla Crea modulo

```
ords.define_module(  
    p_module_name => 'd11' ,  
    p_base_path   => '/d11/' ,  
    p_items_per_page => 25 ,  
    p_status      => 'PUBLISHED'  
);
```

APEX App Builder SQL Workshop Team Development Galleria

Cerca

AD adm usrx00

Servizi RESTful \ Moduli \ Definizione modulo

Schema WKSP\_USRX00

Modulo creato

Definizione modulo ORDS

Nome modulo D17

Percorso di base /d17/

URL completo https://g0a16906b023bfa-odcecml.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d17/

Pubblicato ☒

Dimensione impaginazione 25

Modulo creato

Applica modifiche

<https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11/>

# d11 REST

Servizi RESTful \ Moduli \ Definizione modulo \ Modello risorsa

Schema WKSP\_USRX00

Servizi dati RESTful

- Oggetti abilitati
- Moduli
  - D17
- Privilegi
- Ruoli

**Definizione modello ORDS**

Modulo servizio RESTful **D17**

Percorso di base modulo **/d17/**

\* Modello URI

\* Priorità

\* Tipo di tag entità HTTP

Commenti

Annulla Crea modello

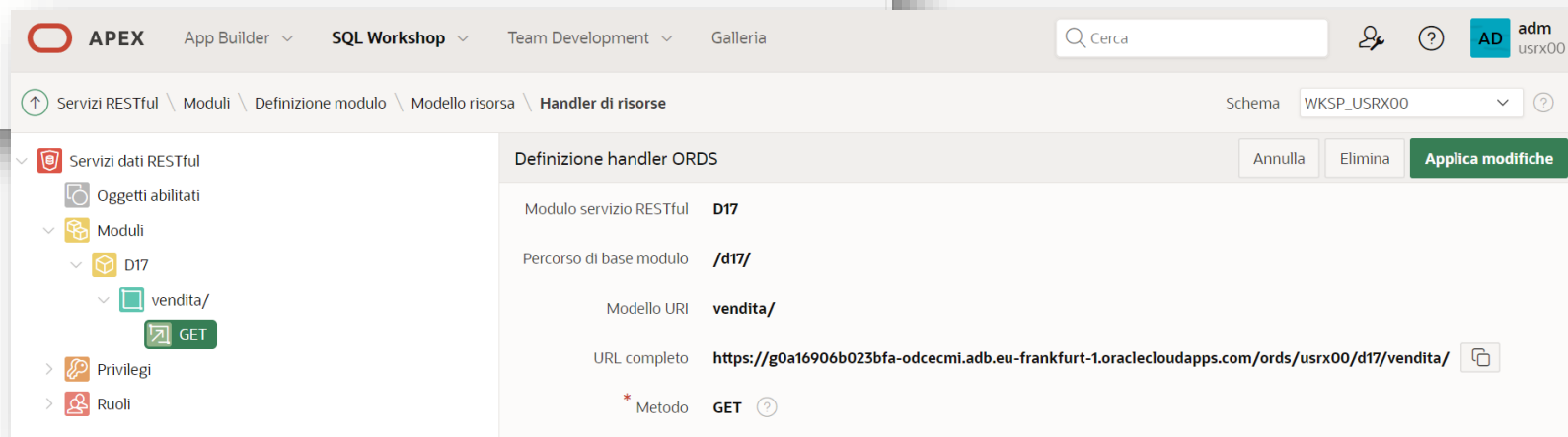
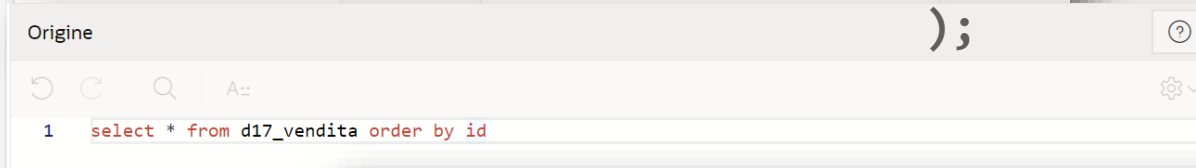
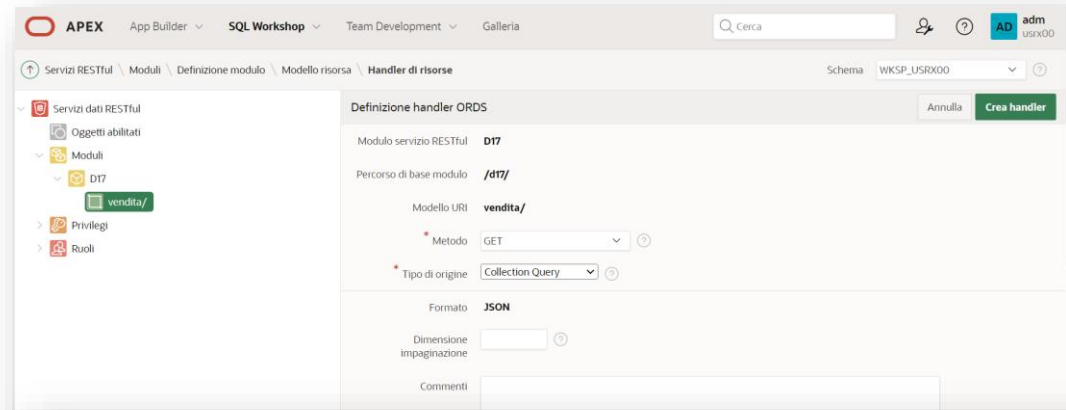
```
ords.define_template(  
    p_module_name => 'd11' ,  
    p_pattern => 'vendita/'  
);
```

<https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11/vendita/>

# d11 REST

```
ords.define_handler(
```

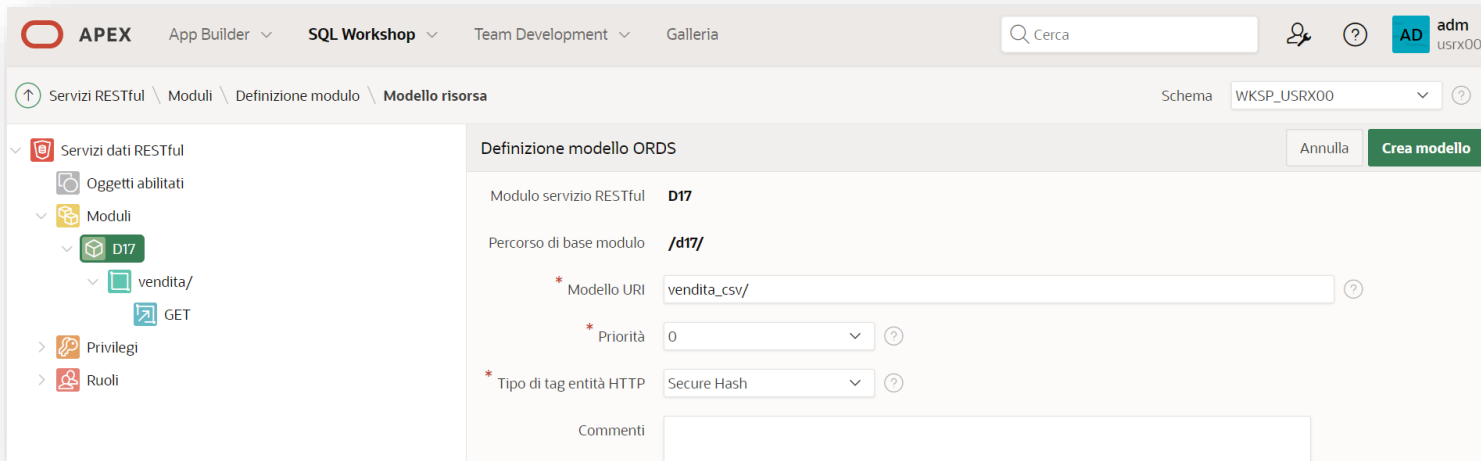
```
p_module_name => 'd11' ,  
p_pattern => 'vendita/',  
p_method => 'GET',  
p_source_type => ords.source_type_collection_feed,  
p_source => 'select *  
              from d11_vendita  
              order by id',  
p_items_per_page => 25
```



<https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11/vendita/>

# d11 REST

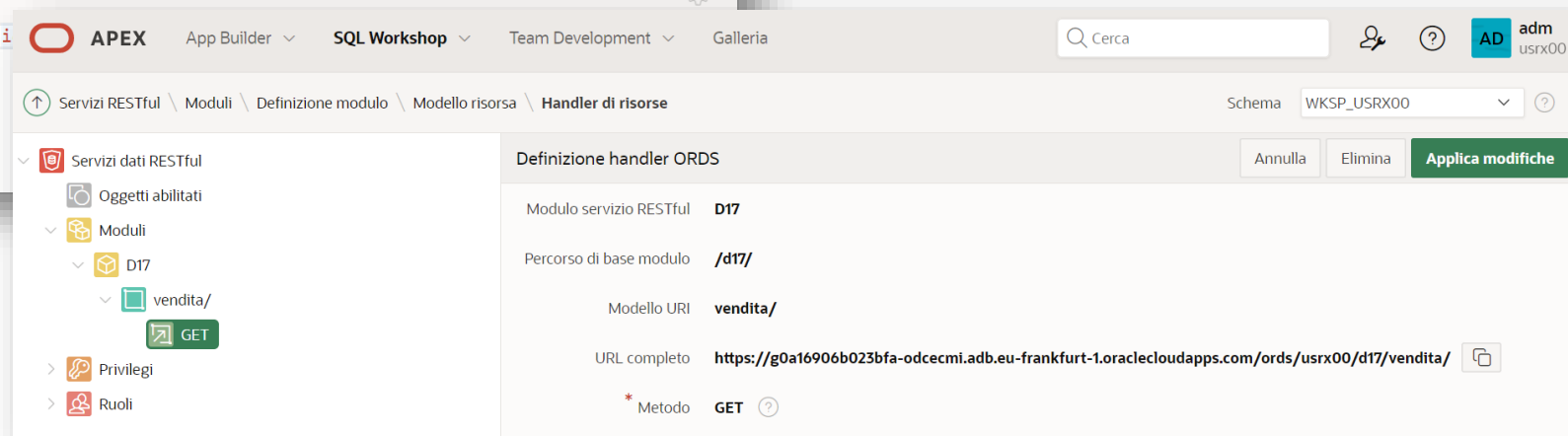
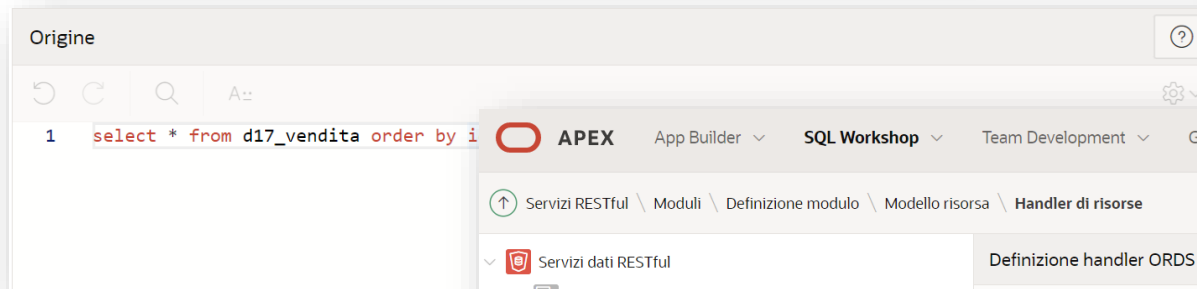
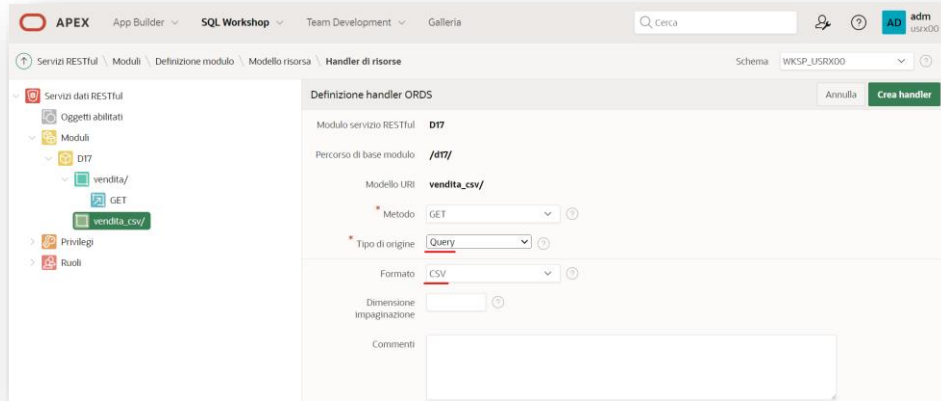
```
ords.define_template(  
    p_module_name => 'd11' ,  
    p_pattern => 'vendita_csv/'  
);
```



[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11/vendita\\_csv/](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11/vendita_csv/)

# d11 REST

```
ords.define_handler(  
  p_module_name => 'd11' ,  
  p_pattern => 'vendita/',  
  p_method => 'GET',  
  p_source_type => ords.source_type_csv_query,  
  p_source => 'select *  
                from d11_vendita  
                order by id',  
  p_items_per_page => 25  
);
```



[https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11/vendita\\_csv/](https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0//ords/cy0/d11/vendita_csv/)

# d11 REST

```
1 select
2 apex_web_service.make_rest_request(
3   p_url => 'https://g0a16906b023bfa-odcecm1.adb.eu-frankfurt-1.oraclecloudapps.com/ords/uxrx00/d17/vendita/',
4   p_http_method => 'GET'
5 ) vendita
6 from dual;
```

Risultati Spiega Descrivi SQL salvato Cronologia

## VENDITA

```
[{"items":[{"id":1,"data":"2020-08-07T00:00:00Z","prodotto":"Mandarino","cliente":"Costa Marianna","zona_cliente":"NORD2","quantita":28,"importo":412.72}, {"id":2,"data":"2021-05-15T00:00:00Z","prodotto":"Mandarini","cliente":"Colombo Massimiliano","zona_cliente":"SUD","quantita":14,"importo":206.36}, {"id":3,"data":"2021-05-04T00:00:00Z","prodotto":"Mandarini","cliente":"Marino Mercurio","zona_cliente":"SUD","quantita":30,"importo":442.2}, {"id":4,"data":"2021-04-30T00:00:00Z","prodotto":"Mandarini","cliente":"Lombardi Minervino","zona_cliente":"SUD","quantita":20,"importo":294.8}, {"id":5,"data":"2021-01-05T00:00:00Z","prodotto":"Mandarini","cliente":"Romano Marcella","zona_cliente":"CENTRO","quantita":14,"importo":206.36}, {"id":6,"data":"2020-12-27T00:00:00Z","prodotto":"Mandarini","cliente":"Marino Mercurio","zona_cliente":"SUD","quantita":13,"importo":191.62}, {"id":7,"data":"2021-03-25T00:00:00Z","prodotto":"Latte","cliente":"Costa Marianna","zona_cliente":"NORD","quantita":30,"importo":128.69999999999999}, {"id":8,"data":"2021-01-24T00:00:00Z","prodotto":"Latte","cliente":"Esposito Marinetta","zona_cliente":"NORD","quantita":18,"importo":72.9300000000000007}, {"id":9,"data":"2020-09-12T00:00:00Z","prodotto":"Latte","cliente":"Costa Marianna","zona_cliente":"NORD","quantita":18,"importo":72.9300000000000007}, {"id":10,"data":"2020-08-25T00:00:00Z","prodotto":"Latte","cliente":"Martinielli Medardo","zona_cliente":"NORD","quantita":20,"importo":85.8}, {"id":11,"data":"2021-06-26T00:00:00Z","prodotto":"Latte","cliente":"Giordano Mario","zona_cliente":"NORD","quantita":16,"importo":68.64}, {"id":12,"data":"2021-01-23T00:00:00Z","prodotto":"Latte","cliente":"Marino Mercurio","zona_cliente":"SUD","quantita":29,"importo":124.41}, {"id":13,"data":"2021-05-08T00:00:00Z","prodotto":"Latte","cliente":"Lombardi Minervino","zona_cliente":"SUD","quantita":29,"importo":124.41}, {"id":14,"data":"2021-04-06T00:00:00Z","prodotto":"Latte","cliente":"Marino Mercurio","zona_cliente":"SUD","quantita":10,"importo":42.9}, {"id":15,"data":"2020-12-02T00:00:00Z","prodotto":"Latte","cliente":"Martinielli Medardo","zona_cliente":"NORD","quantita":19,"importo":81.5}, {"id":16,"data":"2021-06-27T00:00:00Z","prodotto":"Latte","cliente":"Greco Metrofane","zona_cliente":"NORD","quantita":12,"importo":51.48}, {"id":17,"data":"2020-11-23T00:00:00Z","prodotto":"Panna","cliente":"Gallo Margherita","zona_cliente":"SUD","quantita":14,"importo":145.04}, {"id":18,"data":"2020-10-25T00:00:00Z","prodotto":"Panna","cliente":"Lombardi Minervino","zona_cliente":"SUD","quantita":12,"importo":124.32}, {"id":19,"data":"2020-08-05T00:00:00Z","prodotto":"Panna","cliente":"Rossi Macaria","zona_cliente":"NORD","quantita":23,"importo":238.28}, {"id":20,"data":"2021-01-13T00:00:00Z","prodotto":"Panna","cliente":"Fontana Mariella","zona_cliente":"CENTRO","quantita":10,"importo":103.6}, {"id":21,"data":"2021-03-28T00:00:00Z","prodotto":"Panna","cliente":"Martinielli Medardo","zona_cliente":"NORD","quantita":13,"importo":134.68}]]
```

select

```
apex_web_service.make_rest_request(
  p_url => 'https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11/vendita/',
  p_http_method => 'GET'
) vendita
from dual;
```

```
1 select
2 apex_web_service.make_rest_request(
3   p_url => 'https://g0a16906b023bfa-odcecm1.adb.eu-frankfurt-1.oraclecloudapps.com/ords/uxrx00/d17/vendita_csv/',
4   p_http_method => 'GET'
5 ) vendita
6 from dual;
```

Risultati Spiega Descrivi SQL salvato Cronologia

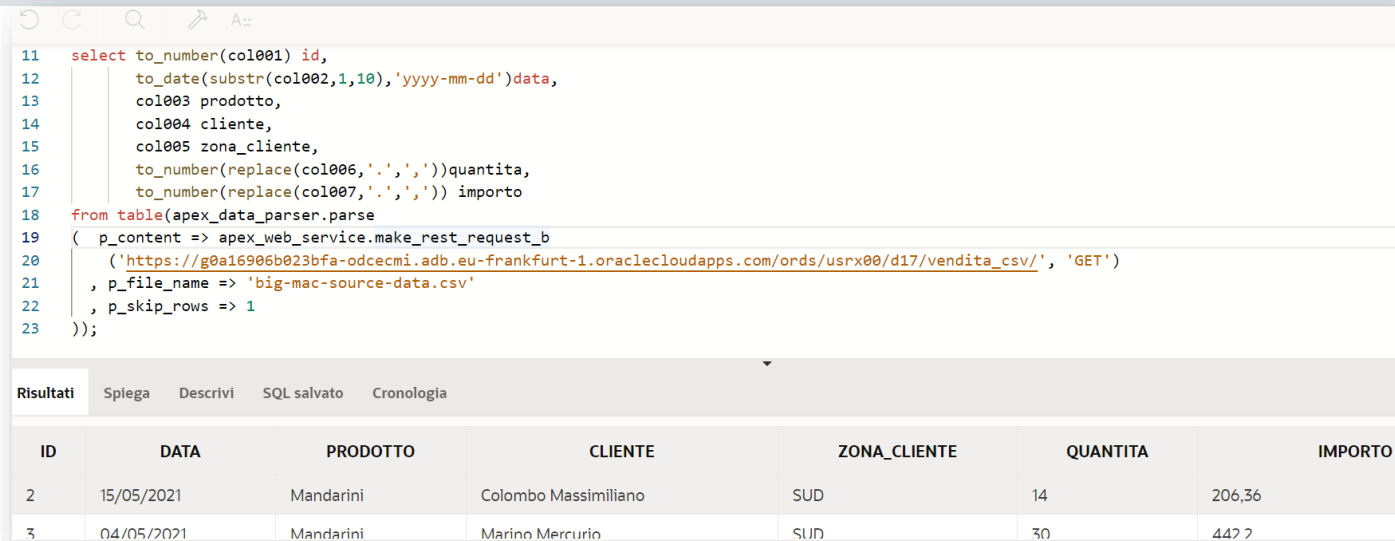
## VENDITA

```
1,2020-08-07T00:00:00Z,Mandarino,Costa Marianna,NORD2,28,412.72,2,2021-05-15T00:00:00Z,Mandarini,Colombo Massimiliano,SUD,14,206.36,3,2021-05-04T00:00:00Z,Mandarini,Marino Mercurio,SUD,30,442.2,4,2021-04-30T00:00:00Z,Mandarini,Lombardi Minervino,SUD,20,294.8,5,2021-01-05T00:00:00Z,Mandarini,Romano Marcella,CENTRO,14,206.36,6,2020-12-27T00:00:00Z,Mandarini,Marino Mercurio,SUD,13,191.62,7,2021-03-25T00:00:00Z,Latte,Costa Marianna,NORD,30,128.69999999999999,8,2021-01-24T00:00:00Z,Latte,Esposito Marinetta,NORD,18,72.9300000000000007,9,2020-09-12T00:00:00Z,Latte,Costa Marianna,NORD,17,72.9300000000000007,10,2020-08-25T00:00:00Z,Latte,Martinielli Medardo,NORD,20,85.8,11,2021-06-26T00:00:00Z,Latte,Giordano Mario,NORD,16,68.64,12,2021-01-23T00:00:00Z,Latte,Marino Mercurio,SUD,29,124.41,13,2021-05-08T00:00:00Z,Latte,Lombardi Minervino,SUD,29,124.41,14,2021-04-06T00:00:00Z,Latte,Marino Mercurio,SUD,10,42.9,15,2021-07-02T00:00:00Z,Latte,Marino Mercurio,SUD,10,42.9,16,2020-12-02T00:00:00Z,Latte,Martinielli Medardo,NORD,19,81.5,17,2021-06-27T00:00:00Z,Latte,Greco Metrofane,NORD,12,51.48,18,2020-11-23T00:00:00Z,Panna,Panna Gallo Margherita,SUD,14,145.04,19,2020-10-25T00:00:00Z,Panna,Lombardi Minervino,SUD,12,124.32,20,2020-08-05T00:00:00Z,Panna,Rossi Macaria,NORD,23,238.28,21,2021-01-13T00:00:00Z,Panna,Fontana Mariella,CENTRO,10,103.6,22,2021-03-28T00:00:00Z,Panna,Martinielli Medardo,NORD,13,134.68
```

select

```
apex_web_service.make_rest_request(
  p_url => 'https://cnde8nae4maapcd-capancioni.adb.eu-zurich-1.oraclecloudapps.com/ords/cy0/ords/cy0/d11/vendita_csv/',
  p_http_method => 'GET'
) vendita
from dual;
```

# d11 REST



The screenshot shows the Oracle SQL Developer interface. The top pane displays a SQL query that uses the `apex_data_parser` package to fetch data from a REST endpoint. The bottom pane shows the results of the query in a table format.

```
11 select to_number(col001) id,
12        to_date(substr(col002,1,10), 'yyyy-mm-dd') data,
13        col003 prodotto,
14        col004 cliente,
15        col005 zona_cliente,
16        to_number(replace(col006, '.', ',')) quantita,
17        to_number(replace(col007, '.', ',')) importo
18 from table(apex_data_parser.parse
19 ( p_content => apex_web_service.make_rest_request_b
20   ('https://g0a16906b023bfa-odcecml.adb.eu-frankfurt-1.oraclecloudapps.com/ords/usrx00/d17/vendita_csv/', 'GET')
21   , p_file_name => 'big-mac-source-data.csv'
22   , p_skip_rows => 1
23 ));
```

ID	DATA	PRODOTTO	CLIENTE	ZONA_CLIENTE	QUANTITA	IMPORTO
2	15/05/2021	Mandarini	Colombo Massimiliano	SUD	14	206,36
3	04/05/2021	Mandarini	Marino Mercurio	SUD	30	442,2

```
select to_number(col001) id,
       to_date(substr(col002,1,10), 'yyyy-mm-dd') data,
       col003 prodotto,
       col004 cliente,
       col005 zona_cliente,
       to_number(replace(col006, '.', ',')) quantita,
       to_number(replace(col007, '.', ',')) importo
from table(apex_data_parser.parse(
  p_content => apex_web_service.make_rest_request_b(
    'https://cnde8nae4maapcd-capancioni.adb.eu-zurich-
1.oraclecloudapps.com/ords/cy0//ords/cy0/d11/vendita_csv/', 'GET')
  , p_file_name => 'vendita.csv'
  , p_skip_rows => 1
  )
);
```