

OSCARCON '23

OPTIMIZING YOUR OSCAR EMR EXPERIENCE

Report By Template

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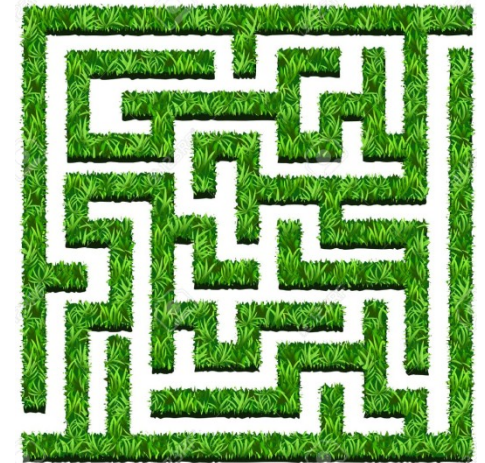


Report by Template (RbT's): A great way to extract useful information

- Very few EMRs incorporate tools that allow users to create custom queries.
- The Oscar Report By Template (RbT) tool allows authorized users to extract data from ALL parts of the Oscar system.
- Run-time parameters allow complicated queries to be run by anyone.
- These templates use standard SQL syntax with a simple method to enter variable criteria, so that they can be run as required by other staff.
- You will learn how to write them, modify them and where to find existing templates..

You're In A Maze Of Twisty Little Passages, All Alike

- There is usually more than one way to achieve your results.
- Some paths will be much better / faster.
- Bad: There are multiple versions and releases.
 - BC vs ON databases – billing completely different
 - Oscar versions. V12, V15, V19 are all slightly different.
 - Oscar forks – OpenOSP, Ontario .deb, Well Health (Kai, Trimara, Nerd, Juno, Indivica)
- Good: All MySQL and they are all very similar.



We will cover:

- How to find and install Report by Template scripts.
- How to modify the scripts.
- How to debug the scripts.
- Formatting the output.
- Adding run-time parameters.

- How to write ad-hoc scripts.
- Limiting your results to prevent crashing your server.

We will NOT cover:

- Advanced SQL scripting. There are lots of excellent online resources.
- Using ChatGPT to write scripts. There has been some discussion about using AI and this may be useful in the future.
 - WARNING: ChatGPT lies!!!!

KISS: Start simple

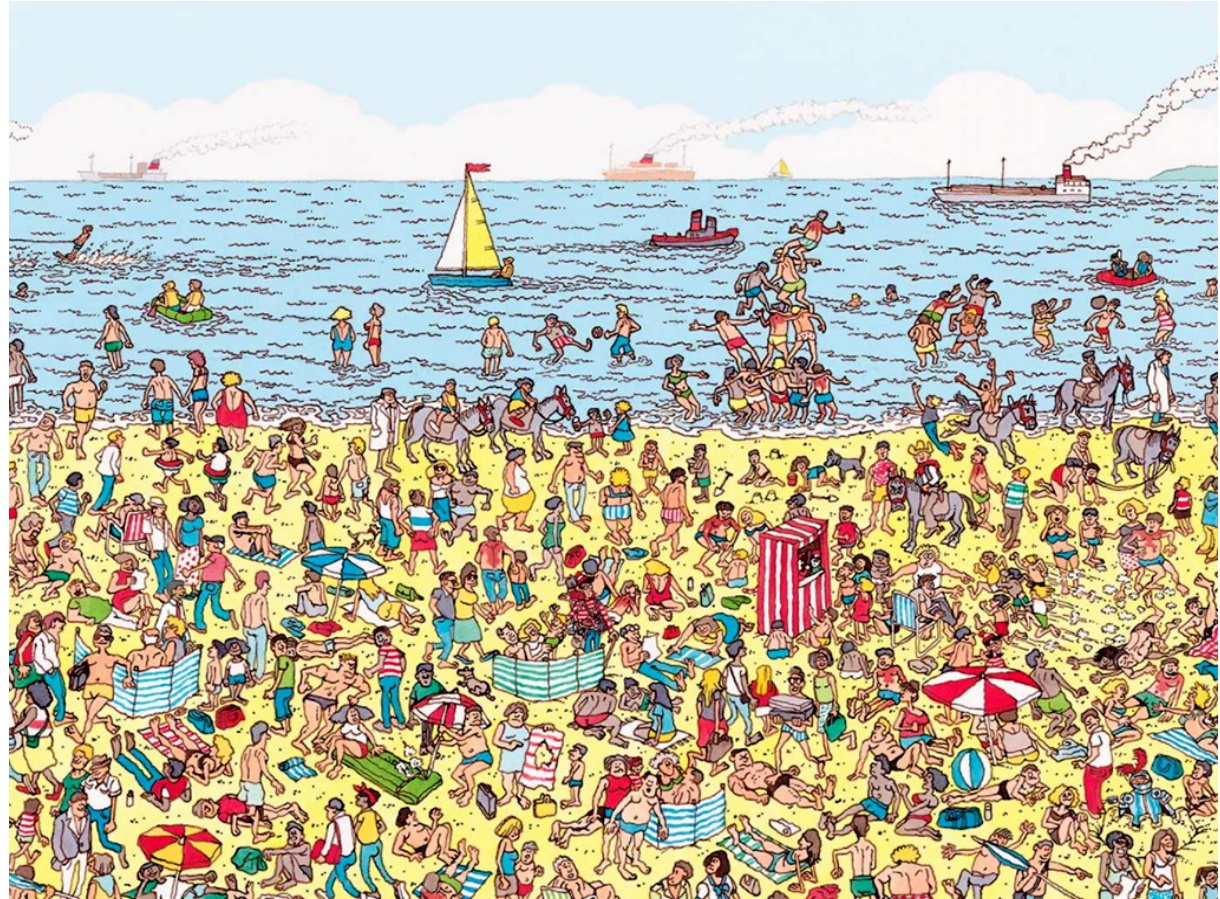
- Know what results you want and where in Oscar they are coming from. Visualize your objective. Like getting into your car.
- (Almost) Every piece of data that is presented on the Oscar site can be extracted from the SQL database.
- Don't reinvent the wheel

It's just SQL

- SQL: Structured Query Language.
 - History: Started from an article in 1970 by Edgar Frank Codd.
 - It's a very mature RDMS (Relational Database Management System)
 - Versions – Oracle PL/SQL, Microsoft SQL Server, PostgreSQL, MySQL
 - Oscar uses MariaDB or MySQL depending on version/fork.
- Resources
 - Oscar BC Users mailing list
 - OscarGalaxy.org <https://oscargalaxy.org/downloads/report-by-template-rbt/>
 - Google

Where's Waldo?

- Demographic
- Appointments
- Medications
- Preventions
- Measurements
- Encounter Notes
- Billing (BC vs ON)
- Log (Admin)
- Forms
- eForms



Getting started

- Basic tools
 - Use Query By Example to get list of database tables, table contents (schema) or ask the mailing list.
 - Use QbE to ensure you have the correct data.
- Commands
 - `SELECT * FROM <tablename> LIMIT 10 ;`
 - `SELECT <fieldname> FROM <tablename> WHERE <fieldname> LIKE 'Smith%' LIMIT 10 ;`
- Useful Analysis to see value frequency
 - `SELECT roster_status, count(*) FROM demographic GROUP BY roster_status;`

Generic Query Wrapper

```
<report title="Generic Query Wrapper" description="Generic Query Wrapper for Ad-Hoc SQL queries"
  active="1">
<!-- put SQL commands between 'query' and '/query' tags, below -->
  <query>
select * from demographic LIMIT 5 ;
  </query>
  <param> </param>
</report>
```

3 sections: Title & Description, SQL query code, Parameters (optional)

Title: Title should be short and sweet. Use alpha sorting to make finding RbT easier. Description should describe what it does.
to add lines

SQL code: Does the work extracting and presenting/sorting the data

Parameters: Makes the template useful in different contexts. Range of appointment dates, Specific provider, Medication name, etc

Source, Sorting, Grouping, Presentation

- Source of data: Where is the information coming FROM?
 - `select * FROM demographic limit 10 ;`
- Sorting: In what order do you want it? By Provider / Patient DOB / Patient Lastname / Appointment Date
- Grouping: Remember `SELECT roster_status, count(*) FROM demographic GROUP BY roster_status;`
- Presentation: What columns to list (Title, Order, Format), Show related name instead of number (Provider, Demographic), Link to specific Oscar page (Demographic), Export (simple titles)

Source of data

- What data we have vs data we don't have.
 - Eg. Patients not seen for >5 years. From Demographic or Appointment tables?
 - What if data was never entered in a format that can be searched?
 - Text vs measurements
- Using JOIN to find related information.
 - Demographic_no and Provider_no are ubiquitous, but Names are more useful
 - LEFT JOIN to find optional matching information.
 - LEFT JOIN provider prov ON prov.provider_no = a.provider_no
- Aliases to eliminate ambiguity in fieldnames.
 - 'prov' is the alias for the provider table.

Sorting

- ORDER BY alias.column_name
- ORDER BY appt.provider_no, appt.demographic_no
- ORDER BY appt.demographic_no, appt.provider_no

- GROUP BY appt.provider

Presentation

- Headings can and should be customized for improved readability. The default title is the SELECTed Fieldname. Just add AS 'Field Name'
 - Need quotes if 'Field Name' has spaces, Beware reserved words.
- Convert codes to useful information.
 - Eg. Provider lastname instead of number, Patient name instead of Demographic_no
 - Using JOIN to extract name or description from number.
- DOB formatting
- Links to existing Oscar screens
 - https://192.168.0.177:8443/oscar/demographic/demographiccontrol.jsp?demographic_no=12345&displaymode=edit&dboperation=search_detail
 - CONCAT("(", **dem.demographic_no**, ")<a/>") AS Link

A NUMBER.



FREE MAN.

Parameters

- Make using RbTs simple for any staff.
- Eliminate duplicated queries.
 - My rule: Never write the same query more than twice !
- Types of parameters
 - Dates – From/To, Starting date, Cutoff date
 - Text – anything! Medication name, Keyword in notes, Starting with
 - List of choices – Patient Status = AC/IN/MO/DE/TE
 - Lookup list – Specific Provider, Demographic Set
 - UNION to add ALL option to list and a matching IF statement in the WHERE section.

RBT parameter example

```
<report title="RBT Title" description="Sample RBT parameters" active="1">
<query>
  SELECT * FROM demographic LIMIT 1;
</query>
<param id="medname" type="text" description="Enter medication"> </param>
<param id="start_date" type="date" description="From date"> </param>
<param id="provider" type="list" description="Provider">
  <param-query>
    ( select distinct provider_no, concat(last_name,',',first_name,'(',provider_no,')') as name
      from provider where provider_type = 'doctor' and status = 1 )
    UNION
    ( select ' ALL', 'All providers' )
    order by provider_no ;
  </param-query>
</param>
<param id="appt_types" type="check" description="Appointment Type">
  <param-query> select name, name from appointmentType;</param-query>
</param>
</report>
```


Debugging your RbT

- No error messages ;-)
- Start simple, with something that works.
- Copy all the code into Notepad++ as a backup.
- If you added something, delete it to see if that was the cause.
- Limit the returned records to reduce response time.



Examples

- Encounter (CPP) text search
 - <https://oscargalaxy.org/download/free-text-search-for-the-following-fields-social-hx-family-hx-medical-hx-ongoing-concerns-reminders-encounter/>
- Patients taking medication (Specific / Generic)
 - <https://oscargalaxy.org/download/report-by-template-medication-number-by-age-with-link/>
- Billing Analysis (ON vs BC)
- Mass Mailing to Patients

Additional Resources

- oscargalaxy.org
- Mailing List – BC-Users, Advanced

Questions?

- 42
- “eForm magic for pushing/pulling measurements from the database”
 - `<input type="text" name="m$UPDR#value" id="UPDRSScore" style="width: 30px;" value="">/124`
 - `<input type="text" name="PrUPDRSc" id="PrEPWSc" size="2" oscarDB=m$UPDR#value>/`
 - `<input type="text" name="PrUPDRDa" id="PrUPDRDa" size="16" oscarDB=m$UPDR#dateObserved>`

**For inquiries,
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Oscar Mailing lists

<https://sourceforge.net/p/oscarcmcmaster/mailman/>

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