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Segment 1

Case description: Volunteer Information System

Willow Creek Academy is a public charter school that offers a core knowledge curriculum to grades K to 8 with two classes per grade consisting of 25 students per class. As a charter school, it lacks the resources provided to traditional public schools and requires parental involvement through various volunteer activities. The school senate is interested in a computerized system to reduce the effort to track volunteer activities and communicate volunteer information to parents. To streamline operations, the school wants to augment the current manual system by providing the ability to create and remove ad hoc volunteer areas throughout the school year, maintain calendars for repetitive volunteer areas, send reminders to parents with few or no volunteer hours, audit volunteer hours, and integrate information about families that is outside of the information currently stored in the manual volunteer information system. The current manual system revolves around the volunteer book, a binder with one page per family, as its central repository. The lunchroom and traffic areas have signup documents and calendars for scheduling. The volunteer coordinators maintain most of the information in the manual system through informal communication and non-standard documents. Willow Creek Academy needs a computerized system to manage volunteers more efficiently.

Workflow

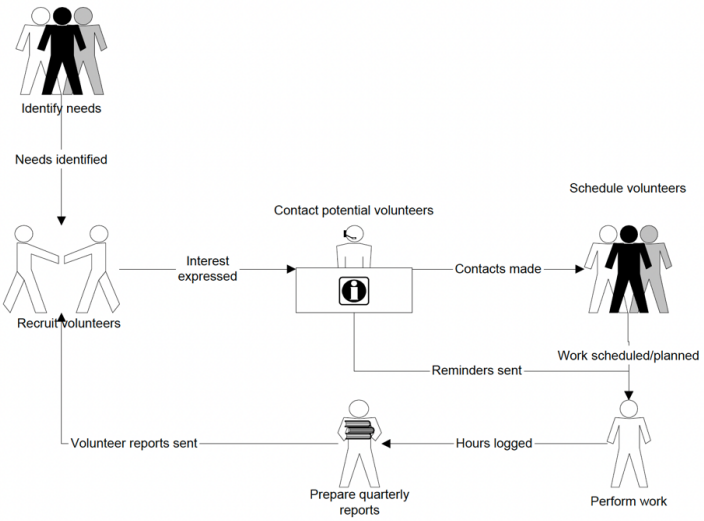


Figure 1: Typical Workflow for Volunteer Information and Processing

Business Rules

1. A volunteer may volunteer for one or more events during the school year.
2. A volunteer is associated with only one family.
3. A volunteer area is controlled by one Family.
4. A volunteer area may have one or more families.
5. A family may have one or more volunteers working for them.

Conceptual data models (i.e., ERDs, etc.)

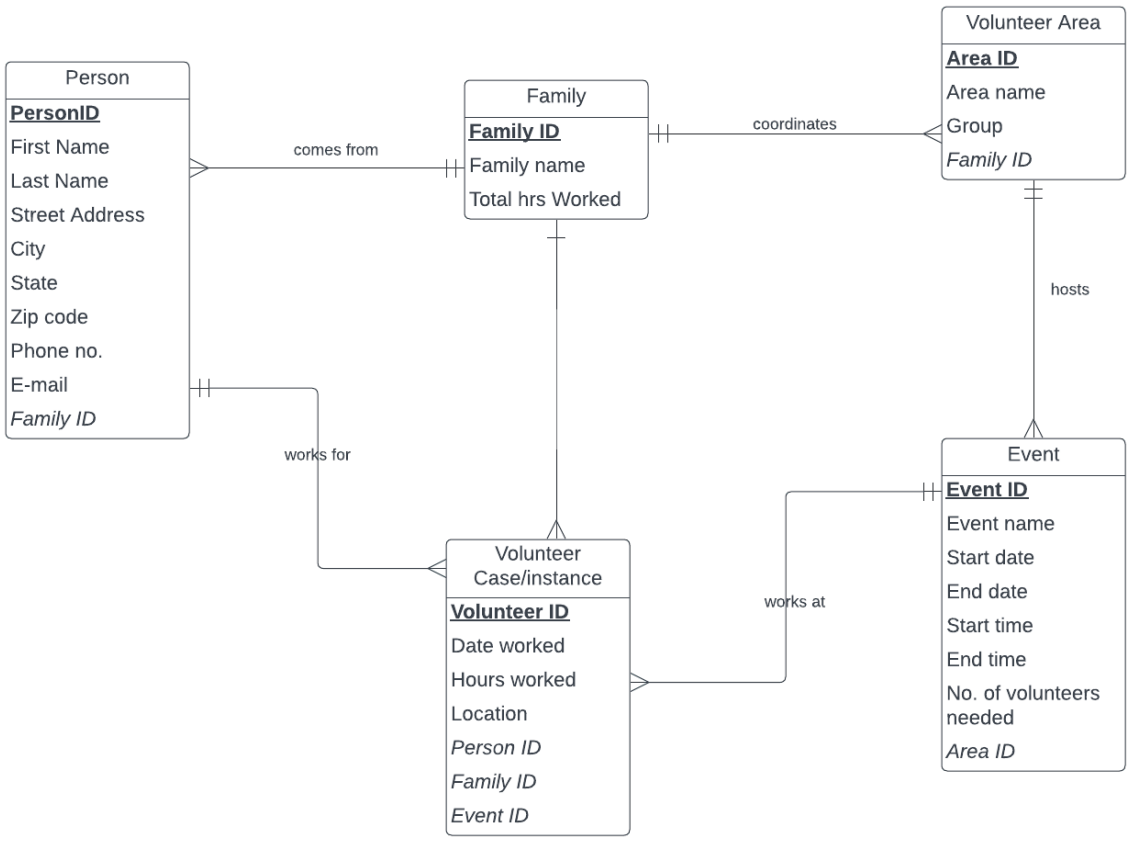


Figure 2: ERD for the Volunteer Information System

Schema

family(family_id, family_name,total_hours_worked)
Area(area_id, area_name, control_group, *family_id*)
Event (event_id, event_name, start_date, end_date,volunteers_needed, *area_id*)
Person(person_id, first_name,last_name, street_address, city, state, zip_code, phone_number, email, *family_id*)
VolunteerCase(Volunteer_id, date_worked,hours_worked,location, *person_id, family_id*, *event_id*)

Populated data in tables

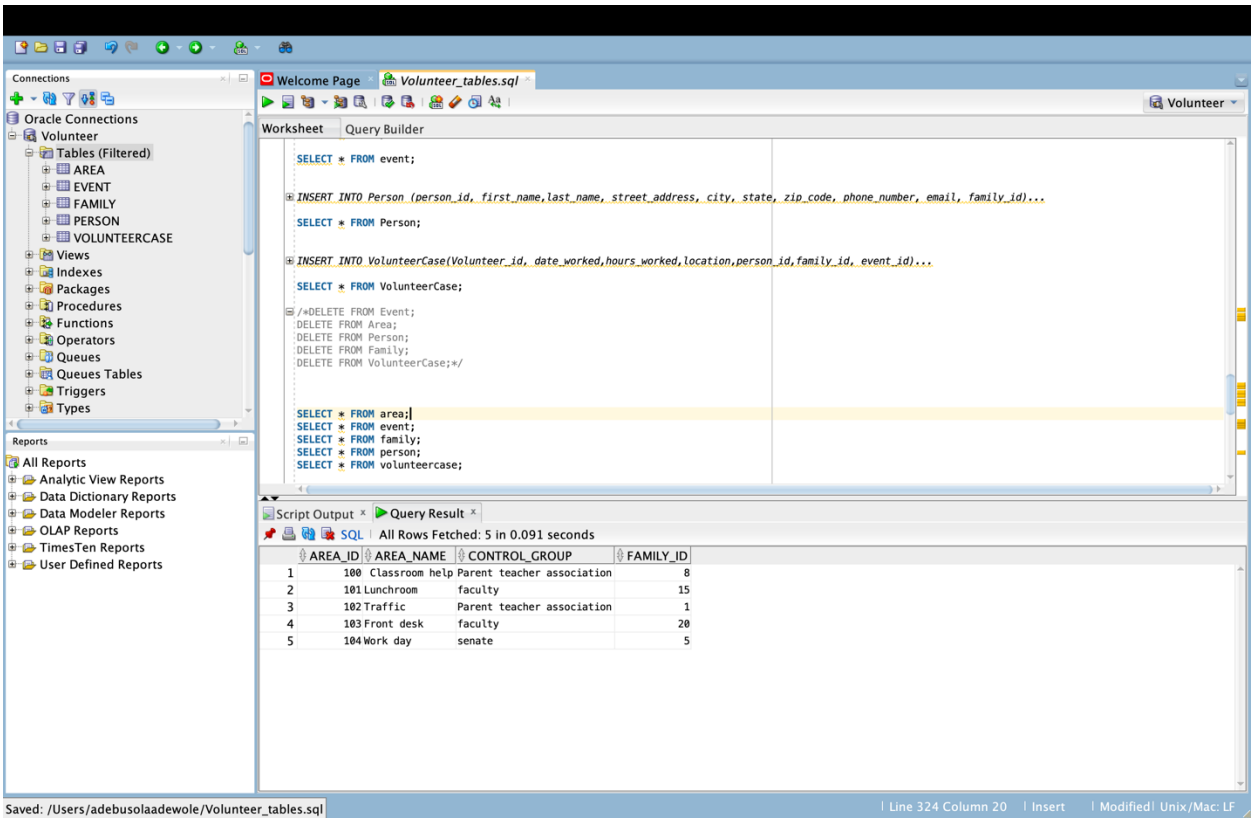


Figure 3: Area table

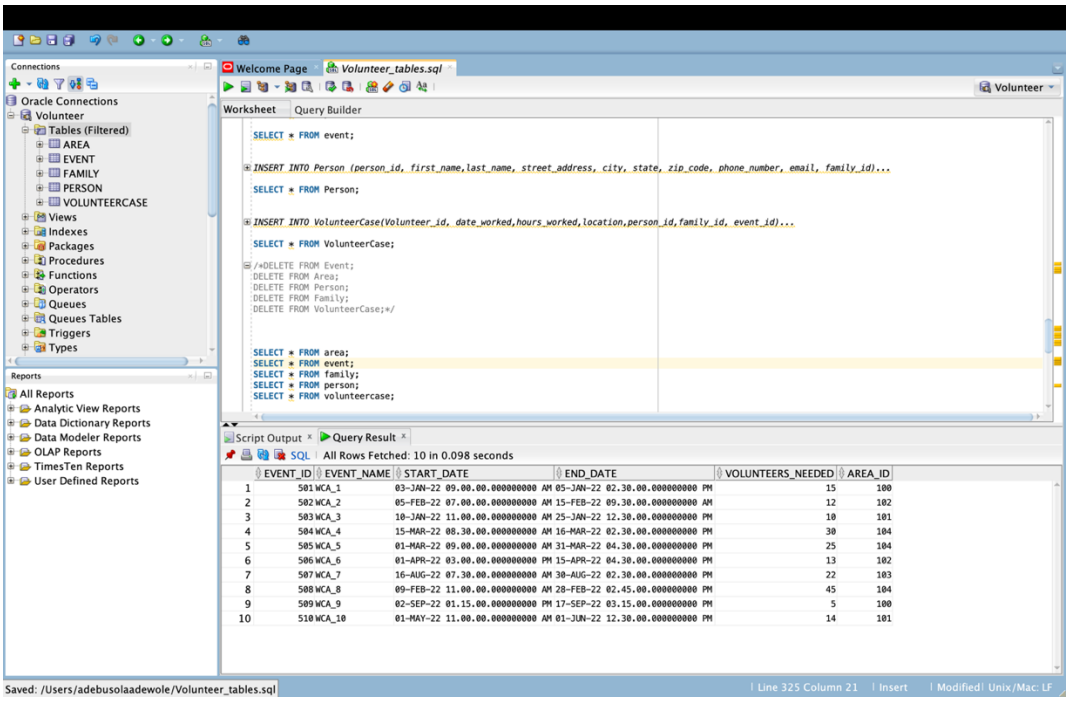


Figure 4: Event table

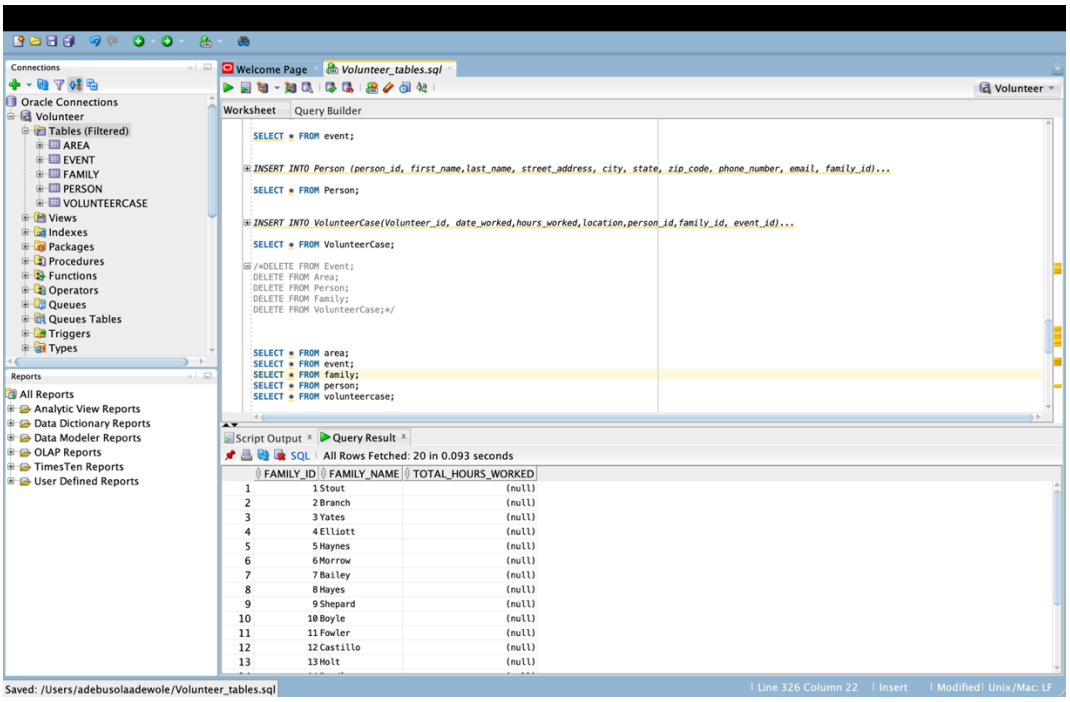


Figure 5 : Family table

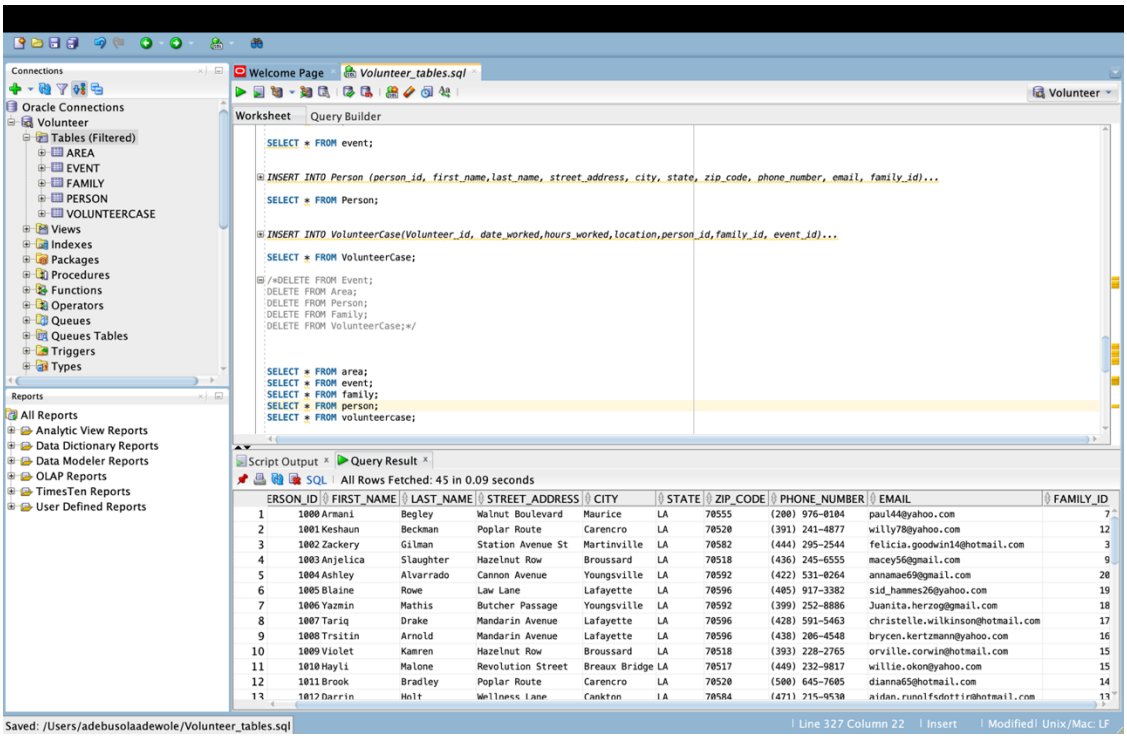


Figure 6: Person table

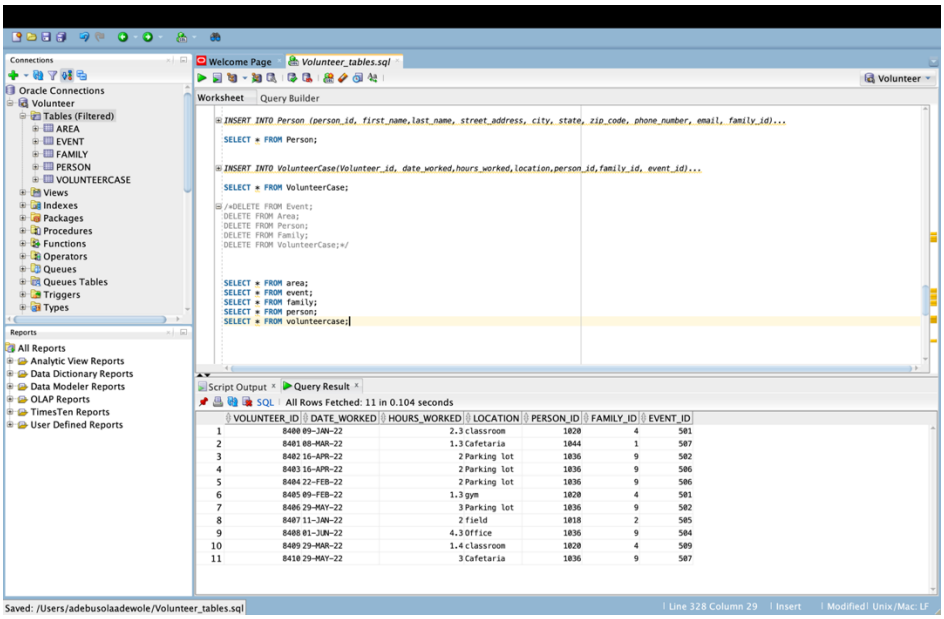
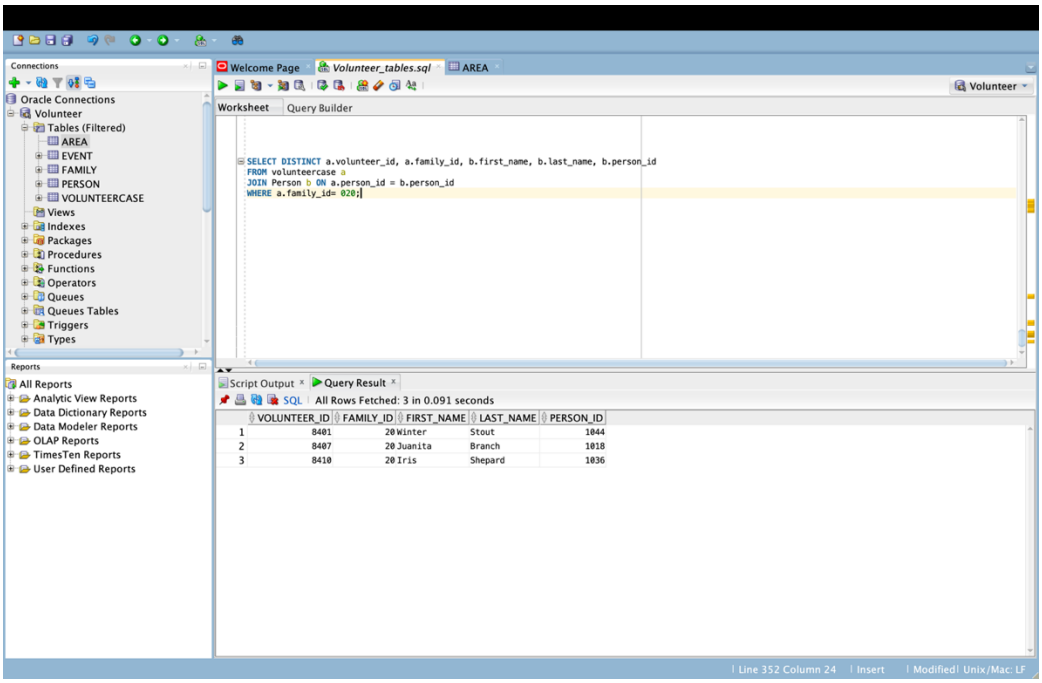


Figure 7: VolunteerCase table

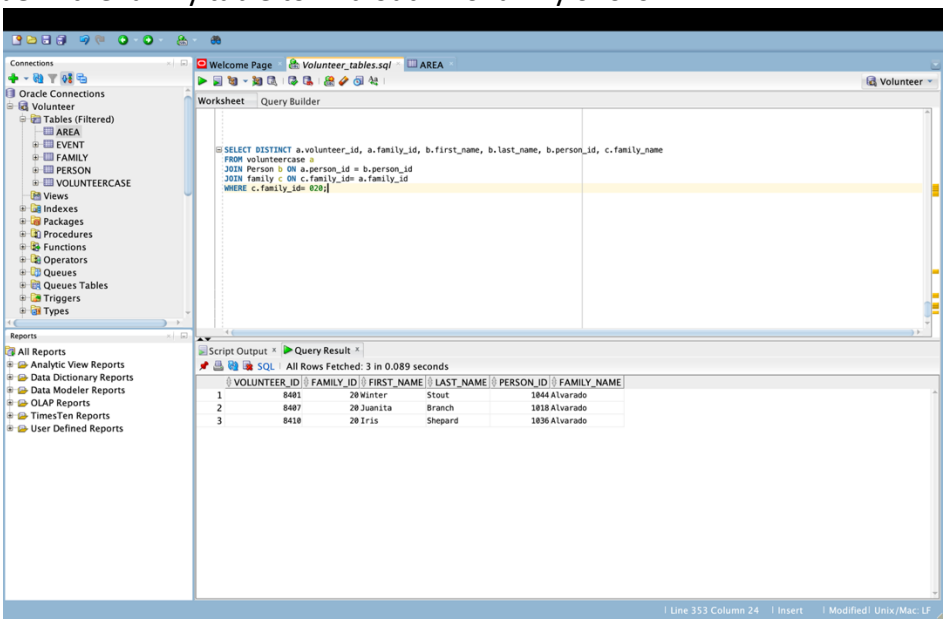
Technical Manual (report) for DB backend

Family & Volunteer report:

Select statement to find all the volunteers that have worked under family 020

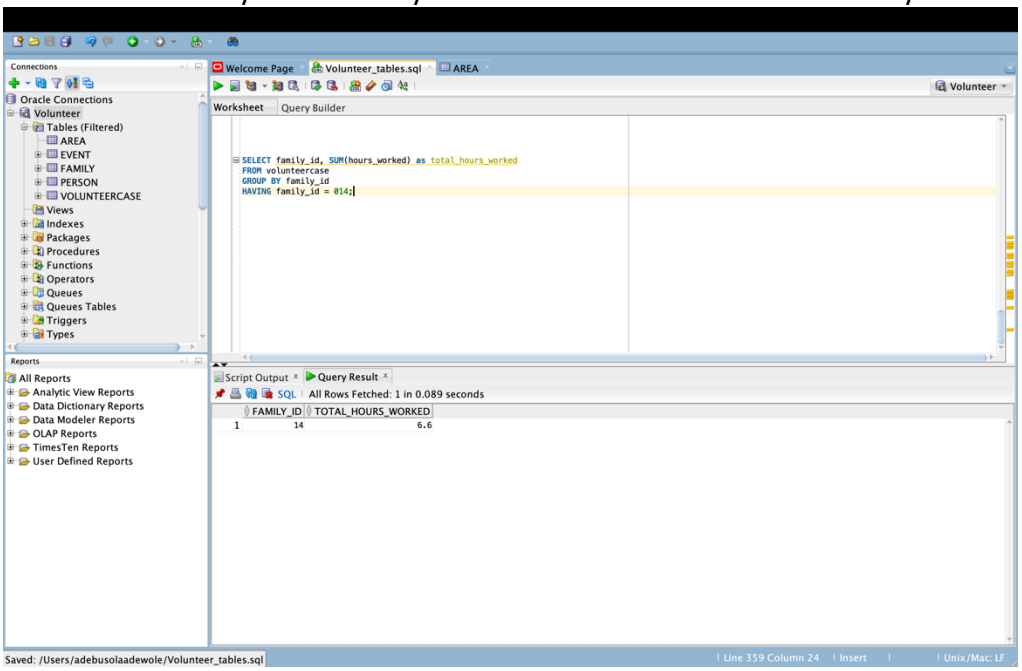


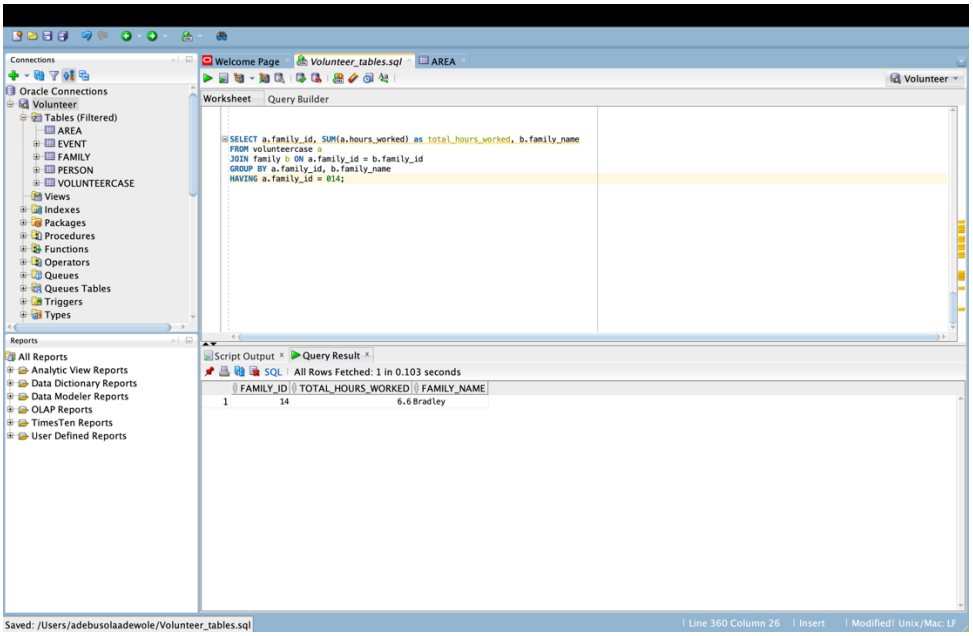
JOIN the family table to find out who family 020 is



From the screenshot Family Alvarado of those three volunteers during the event

Find out how many hours Family 014 has worked for the 2022 school year?





The Bradley family has worked for 6.6 hours so far.

Event report:

Find volunteers who worked during event 506?