

Name and Student Number: _____

Quiz 4

AptGTA.com is a website that allows young adults to find apartments for rent in the Greater Toronto Area. Here are three of the tables in AptGTA's database, described using the SQL create statements

```
create table landlord (
  id integer auto_increment not null,
  name varchar(100), -- landlord's name
  contact_name varchar(100), -- the name of the contact person
  tel char(10) not null, -- contact phone number
  primary key (id)
);

create table building (
  id integer auto_increment not null,
  address varchar(200), -- street address
  city varchar(100) not null, -- the city, e.g. "Mississauga"
  building_type enum("single", "duplex", "multi-family"),
  primary key (id)
);

create table apartment (
  -- a single residence house is treated as a building with 1 apartment
  id integer auto_increment not null,
  unit_no varchar(5), -- the number or code of the apartment ("1", "2", "A")
  num_bedrooms integer, -- number of bedrooms (0 for studio)
  floor integer, -- on which floor
  description text, -- a longer description
  date_available date, -- from which date is the apartment available,
  monthly_rent decimal(5,0), -- how much is the rent
  landlord_id integer not null,
  building_id integer not null,
  primary key (id),
  foreign key (landlord_id) references landlord(id),
  foreign key (building_id) references building(id)
);
```

Please write a query that answers the following question: What is the phone number for the landlord with the **largest** number of apartments available in Mississauga **today** and costing less than \$2000 per month? The result should just show the phone number. If you cannot write a query that would show the landlord with the largest number of such apartments, write one showing *all* matching landlords for partial credit.

The answer:

```
select landlord.tel
from landlord
join apartment on landlord.id=apartment.landlord_id
join building on building.id=apartment.building_id
where building.city="Mississauga"
  and apartment.monthly_rent < 2000
  and date_available <= current_date()
group by apartment.landlord_id
having count(*) > 0
order by count(*) desc
limit 1;
```

Some notes:

- Watch for basic syntax.
- Using `<=current_date()` is the best way to pick apartments available today. Using `<="2011-11-16"` would also work. Note that the format would need to be as shown. "2011/11/16" or "Nov-15-2011" would not work. Nor would "today".

- Watch for the conditions. Also, the conditions on the city, availability, and rent amount can only be imposed before grouping and therefore must be done with a “where”.
- Just using count(*) is sufficient. You do not need to specify a column as a parameter to count(), unless you want to exclude rows with null values for some field or if you want to use count(distinct ...).
- Don’t forget “desc”. Otherwise you get the landlord with the *least* number of offering.
- Think carefully before using subqueries. Some of you use them for cases that do not require subqueries. This is one of those cases. And getting subqueries to work can be quite tricky. So, ask yourself first whether a simpler query will do.