



# Applied Databases

## Topic 4 Exercise Sheet

1. Get garage.sql from Moodle and import it into MySQL.
2. How are the tables in the database related?  
`show create table manufacturer;` - No FK.  
`show create table vehicle;` - The manu\_code in vehicle is a FK referencing the manu\_code in manufacturer.
3. Show the manu\_code, manu\_name and the first 10 characters of the manu\_details followed by three dots (...) for each manufacturer.

```
The Ford Motor Compa...
General Motors is an...
Nissan Motor Company...
Toyota Motor Corpora...
Volkswagen is a Germ...
```

```
select manu_code, manu_name, concat(substr(manu_details,1,20),"...")
from manufacturer;
```

4. Show the average length of the manu\_name (displayed as "Length") with 0 characters after the decimal point.  
**HINT:** Functions needed are avg(), length() and format().  
`select format(avg(length(manu_name)),0) as "Length" from manufacturer;`

5. Show all details of all vehicles plus an extra column called "cost" which has the value 1.45 if the fuel is petrol otherwise has the value 1.30.  
`select *, IF(fuel="petrol",1.45,1.30) as cost
from vehicle;`

6. Show all the reg, manu\_code and associated manu\_name for each vehicle.  
`select v.reg, v.manu_code, m.manu_name
from vehicle v
inner join manufacturer m
on v.manu_code = m.manu_code;`

7. Show the manu\_code and manu\_name as well as associated reg, for each manufacturer who has vehicles listed in the vehicle table.  
`select m.manu_code, m.manu_name, v.reg
from manufacturer m
inner join vehicle v
on m.manu_code = v.manu_code;`



8. Show the manu\_code and manu\_name as well as associated reg, for all manufacturers and if they have vehicles listed in the vehicle table, show the reg of it.

```
select m.manu_code, m.manu_name, v.reg
from manufacturer m
left join vehicle v
on m.manu_code = v.manu_code;
```

9. Write a stored procedure called price\_less\_than that takes one parameter of type decimal(8,2) which represents the price of a vehicle:

```
price_less_than(p decimal(8,2))
```

The procedure should then return the following details for all vehicles where the price of the vehicle is less than **p** sorted by ascending price:

- Reg
- Manu\_code
- Manu\_name
- Mileage
- Price

```
CREATE PROCEDURE price_less_than(p decimal(8,2))
deterministic
begin
    select v.reg, v.manu_code, m.manu_name, v.mileage, v.price
    from vehicle v
    inner join manufacturer m
    on v.manu_code = m.manu_code
    where v.price < p
    order by v.price;
end
```