hw1

Part 1
1(d)
$\Pi_{hour,trips/100}(\sigma_{((hour\geq 7)\wedge(hour<10))\vee((hour\geq 17)\wedge(hour<19))}(hourly\_ridership)$
1(e)
$\Pi_{Occupancy.Station,Occupancy.DateTime,Occupancy.Riders,Weather.Condition}(\sigma_{Weather.Condition='sunny'\vee Weather.condition='rainy'}$
$(Occupancy \bowtie_{Occupancy.DateTime=Weather.DateTime\wedge Occupancy.Station=Weather.Station} Weather)$

Part 2
2(c)
If we insert the row when the user activates, then we can always see the latest information in the database, thus we could use the new data for analysis in real time. If we cache the ride data, then we could not safely store this information. It is likely that the information cached is lost during the trip then we could not retrieve them. However, by caching we could save the cost on changing the database and make less modifications on database.
2(d)