**APPOINTMENT (dentist\_id, dentist\_name, patient\_id, patient\_name, appointment\_datetime, surgery\_roomno)**

CKs:

1. dentist\_id, appointment\_datetime
2. appointment\_datetime, surgery\_roomno
3. patient\_id, appointment\_datetime

σ 🡪 returns the column

π 🡪 return the row

⋈ 🡪 keeps one attribute among the commons one

1. List the number and name for all hotels  
   π hotel\_no,hotel\_name(HOTEL)
2. List all single rooms with a price below $50

R= σ room\_type = ‘signle’ and room\_price <50 ROOM

1. List the numbers and names of all hotels in Melbourne

π hotel\_no, hotel\_name(σ hotel\_city=’Melbourne’(HOTEL))

1. List all numbers and names of hotels which have a presidential suite room  
   *π*hotel\_no, hotel\_name​(HOTEL⋈*π*hotel\_no​(*σ*room\_type=’presidential suite’​(ROOM)))
2. List the price and type of all rooms at the Grosvenor Hotel  
   *π*room\_price, room\_type​(ROOM⋈*π*hotel\_no​(*σ*hotel\_name=’Grosvenor Hotel’​(HOTEL)))
3. List all numbers, names, and addresses of guests currently staying in deluxe room of any hotel (assume that if the guest has a tuple in the BOOKING relation, then they are currently staying in the hotel)

πguest\_no,guest\_name,guest\_address​(GUEST⋈(σroom\_type=′Deluxe′​(ROOM)⋈BOOKING))

1. List all numbers, names, and addresses of guests currently staying at the Grosvenor Hotel (assume that if the guest has a tuple in the BOOKING relation, then they are currently staying in the hotel)

πguest\_no,guest\_name,guest\_address(GUEST⋈(BOOKING⋈σhotel\_name=′GrosvenorHotel′​(HOTEL)))

1. List ids, names of customers and descriptions of products bought by the customer. How many tuples will be returned by the relational algebra query that you have constructed as your answer?
2. List all names which are shared by customers and staff
3. List ids and descriptions of products that haven’t been sold
4. List names of clerks who don’t have any sales yet
5. List categories (positions) of staff who have made sales

**I**