

1) *patients with insomnia who haven't visited a doctor this year*

```
(
  (
    Diagnosing
    *
    Diagnosis (name="Insomnia") <id→diagnosis>
    ) [patient_id]
  \
  Examination (examination_date>='2020-01-01') [patient_id]
)
*
Patient [patient_id, patient_name]
```

2) *names of doctors who at least once examined in the room 323*

```
(
  Examination (examination_room=323)
  [doctor=employee_id]
  Employee
) [employee_name]
```

3) *doctors who diagnosed all diagnoses of group D*

```
Diagnosing [doctor, diagnosis]
÷
Diagnosis (group="D") <id→diagnosis> [diagnosis]
```

4) *currently available rooms in which patient with id 100 has never stayed*

```
(
  (
    Patient [patient_id] (patient_id=100)
    x
    Room [block, number] (available=True)
  )
  \
  Stay [patient_id, block, number]
) [block, number]
```

5) *list of doctors and departments they head*

```
Doctor <employee_id→id> [id]
*_L
Department <name→department, head→id> [id, department]
```