

1)

```
import C:\Users\rdieg\Downloads\movie.dat;
```

```
projection[movie.title](movie<270,140><280,60>;
```

2)

```
import C:\Users\rdieg\Downloads\movie.dat;
```

```
filter[ ( movie.release_year > 2005 )](movie<500,180><450,80>;
```

3)

```
import C:\Users\rdieg\Downloads\movie.dat;
```

```
import C:\Users\rdieg\Downloads\movie_cast.dat;
```

```
projection[movie.title, movie_cast.character_name](filter[ ( movie.movie_id ==  
movie_cast.movie_id  
)](cartesianProduct(movie<840,280>,movie_cast<1030,280><970,220><840,160><8  
50,110>;
```

4)

```
import C:\Users\rdieg\Downloads\movie.dat;
```

```
import C:\Users\rdieg\Downloads\person.dat;
```

```
import C:\Users\rdieg\Downloads\movie_cast.dat;
```

```
projection[movie.title, movie_cast.character_name](filter[ ( movie_cast.movie_id ==  
movie.movie_id )](cartesianProduct(filter[ ( movie.release_year > 2000  
)](movie<610,500><550,350>,filter[ ( person.person_id == movie_cast.person_id
```

```
))(cartesianProduct(movie_cast<410,497>,filter[ ( person.person_name == 'Bruce  
Willis'  
))(person<170,597><90,500><330,420><200,350><510,240><390,140><400,50>;
```

5)

```
import C:\Users\rdieg\Downloads\person.dat;
```

```
import C:\Users\rdieg\Downloads\movie_cast.dat;
```

```
hashUnion:union(projection[person.person_name](person<740,470><710,390>,proje  
ction[movie_cast.character_name](movie_cast<940,470><890,390><850,330>;
```