Lab Exercise: N + 1 Selects Problem

Task 1: As explained in the lecture on N + 1 Selects Problem, create the following data in the student and guide tables using an EntityManager and the default fetching strategies for One-To-Many and Many-To-One associations in the bi-directional One-To-Many Guide-To-Student relationship.

student

id	enrollment_id	name	guide_id
1	2014AL50456	Amy Jade Gill	2
2	2014JT50123	John Smith	2
3	2014BE50789	Bruce Lee	NULL
4	2014RG50347	Rahul Singh	3

guide

id	name	salary	staff_id
1	Mike Lawson	1000	2000MO10789
2	Ian Lamb	2000	2000IM10901
3	David Crow	3000	2000DO10777

Task 2: Write a query to print the following output on the console:

```
The enrollmentId of Amy Gil is 2014AL50456
The enrollmentId of John Smith is 2014JT50123
The enrollmentId of Bruce Lee is 2014BE50789
The enrollmentId of Rahul Singh is 2014RG50347
```

Task 3: How many SQL select statements were executed at runtime in completing the Task 2?

```
The guide of Amy Gil with enrollmentId 2014AL50456 is Ian Lamb
The guide of John Smith with enrollmentId 2014JT50123 is Ian Lamb
The guide of Rahul Singh with enrollmentId 2014RG50347 is David Crow
```

Task 6: If it's taking more than 1 SQL select statements at runtime in completing the Task 5, is it possible to reduce it to just 1 SQL select statement?

Task 7: Is it okay to have the fetching strategy of FetchType.*EAGER* for the single point Many-To-One Student-To-Guide association when you're querying for a particular student by its id? Consider the example given below.

```
Query query = em.createQuery("select student from Student student where student.id = :studentId");
query.setParameter("studentId", 4L);
Student student = (Student) query.getSingleResult();
```

***The source code files for the lecture on "N + 1 Selects Problem" are available to be downloaded with this lab exercise. You could use them to complete the given tasks successfully.