Theory Section

1. [3 pts] Describe what surrogate keys are (in the context of relational databases):

**Keys that have no meaning in the business domainm, unique, no change generated by the db**

1. [3 pts] Describe the difference between the Transient and Detached entity states**Transient: new in Java, hasn't been in cache or**

**DB Detached: in Java, thrown out of cache, still in DB**

1. ﻿﻿﻿[3 pts] Explain how Bi-Directional associations are mapped (what do you need to stop them from being 2 uni-directional associations)

**mappedBy =   
Giving up control**

1. [3 pts] What does the @MappedSuperClass annotation do?

**It doesn't map inheritance, it does code re-use**

**The tables look like table per concrete class**

1. ﻿﻿﻿[3 pts] What annotations do you need to map a table that has a composite key?

**@EmbeddedId @Embeddable**

1. ﻿﻿﻿[3 pts] Explain what the N+1 problem is in Hibernate

**When you retrieve some objects, and then loop over them, loading related data for each item in the collection causes many selects (N) this is not optimal as all of these could have been retrieved with 1 select.**

1. [3 pts] Describe what Optimistic Concurrency is

**Your application can run the database in a lower isolation level (making it faster)**

**hoping that lost updates don't happen -- BUT if they do we'll know because of the version column**

1. [3 pts] Describe what Auto Commit Mode is and how it relates to Hibernate

**When doing SQL work on the console we never do any commits.... But they're still there**

**They are auto-commited after every of statement. This is great for the console.**

**Not good for applications.**

**No unit of work, bad isolation**

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