CS544 EA
Applications

Concurrency: Application Transactions

Application Transactions

- Application Transactions are longer running conversations
  - Can be seen as a **Unit of Work** from the User Perspective
  - Spanning **two or more screens**

- The user expects these units of work to be
  - **A**tomic, **C**onsistent, **I**solated, and **D**urable
  - Submitting data after each screen would not allow us to roll back the entire unit of work (not Atomic)
  - Nor should you use a single database transaction across multiple screens
    - Keeping locks open during user think time

Checkout

- An online checkout is generally an Application Tx
  - Multiple screens (items, shipping, payment, etc)
  - Needs to be: Atomic, Consistent, Isolated, Durable

- Can be implemented with **optimistic concurrency**
  - Detach objects after first screen, store in session
  - Update objects on subsequent screens
  - Re-attach objects after final screen
    - Exception will be thrown if changes happened outside App TX