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Applying TDD in Green Field

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SOFTWARE

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  - FCI-2000
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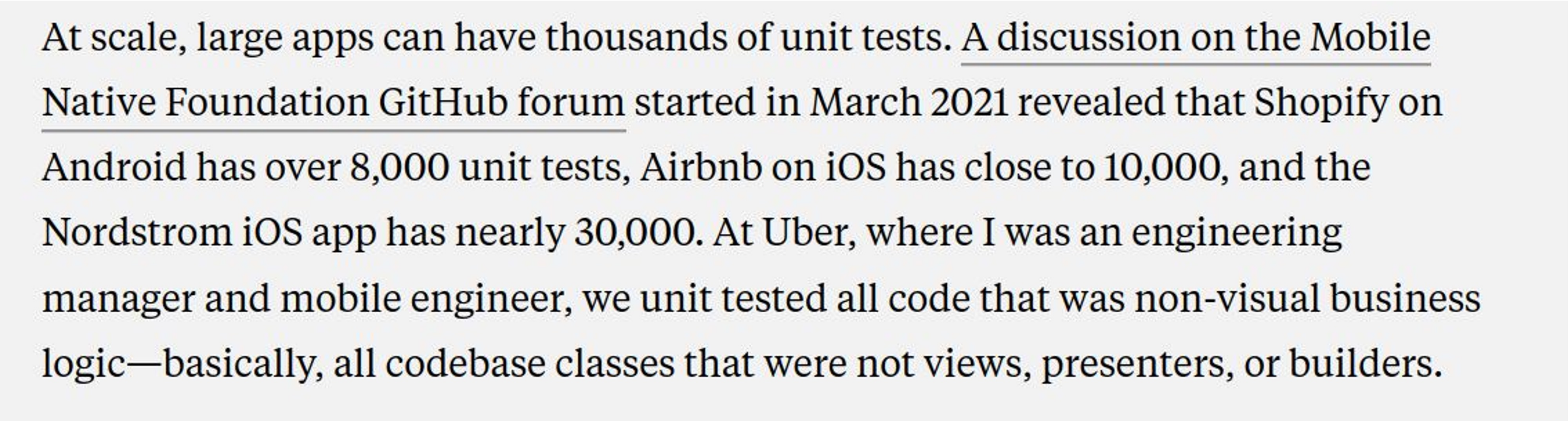

At scale, large apps can have thousands of unit tests. A discussion on the Mobile Native Foundation GitHub forum started in March 2021 revealed that Shopify on Android has over 8,000 unit tests, Airbnb on iOS has close to 10,000, and the Nordstrom iOS app has nearly 30,000. At Uber, where I was an engineering manager and mobile engineer, we unit tested all code that was non-visual business logic—basically, all codebase classes that were not views, presenters, or builders.

Session Outcomes

- What is TDD ?
- When to use TDD in your Software?
- Is it always useful ?
- Why TDD ?
- TDD Challenges
- How to parctice TDD ?

What is TDD ?

- Test First
- Design Technique
- Mindset

When to use TDD ?

- Product Design
  - Market Research
  - System Design
- Software Architecture Design
  - Attribute Driven Design (ADD)
- Internal Component Design
  - Components’ Structures
  - Components’ Interactions

Is it always Useful ?

- Green Field Projects vs Brown Field Projects
- Accompanied with other practices like BDD, Code Review, etc.
- All the members of the team got to do it
- Long life Products

Why TDD ?

- Correctness
  - Code Coverage
- Maintainble
  - High Cohesive
  - Loose Coupling
  - Control Change Impact
  - Reduce Maintenance Cost
- Defect Denisty
  - Less debugging
  - Less defects

TDD Challenges

- Misunderstanding
- It satisfies half of V&V
- Slow at the beginning
- It is a teamwork
- Tests maintenance

How to practice TDD

- Understand the problem domain (Business Goals)
- Undestand the Software Architecture Design
- Start by writing a test

Problem Domain (Business Goals)

- Patient went to clinic to see physicians but they always suffer from a long waiting queue
- Expand our market by
  - Increase the number of clinics the use our product
  - Aiding patients in mitigating their pain by exploiting their waiting time.

Software Architecture

- Module Decoposition Structures
- Component and Connector Structures
- Allocation Structures

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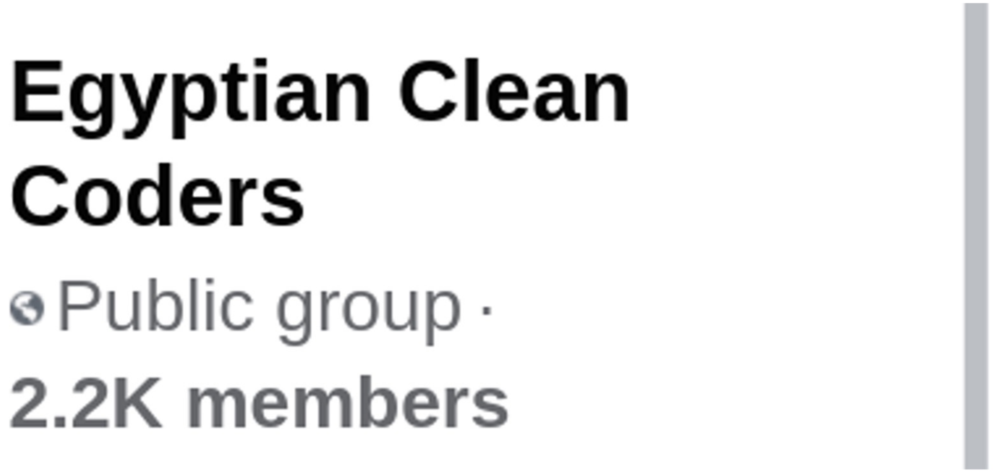
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