

Convert an Industry-Leading Native App to React Native

sdmay19-02

The logo for Buildertrend, featuring the word "buildertrend" in white lowercase letters inside a blue cloud-like shape.

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Client: Buildertrend

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About Our Client



buildertrend

- Buildertrend provides web-based home builder software
- Has mobile applications for both android and iOS
- **#1 Software** for home builders and remodelers

Project Plan

- Problem Statement
- Conceptual sketch
- Requirements
- Constraints
- Market Research
- Risks and Mitigation
- Costs
- Milestones

Problem Statement

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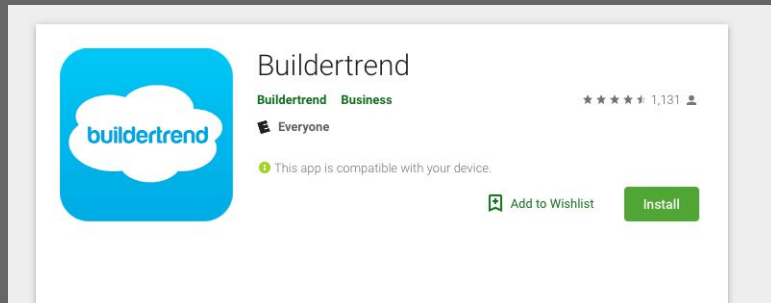
- Buildertrend currently has development teams for both iOS and Android
- Must develop, maintain, and test on both platforms
- React Native eliminates the need for development on two separate platforms



Market Research

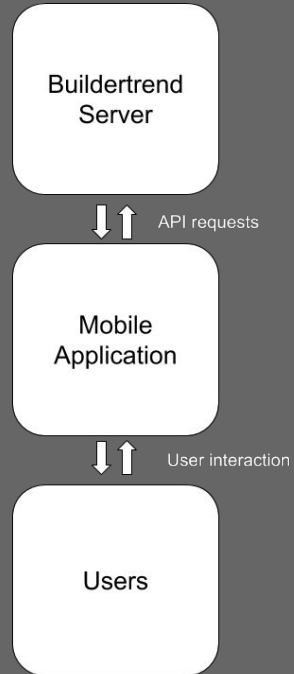
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- Researched Buildertrends current mobile applications so we can recreate it
- Were given user account to investigate design



Conceptual Sketch

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Functional Requirements

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- Users must be able to log in and out of their existing accounts
- Both iOS and Android platforms should look and feel consistent for the users
- Connect to Buildertrends servers and APIs
- Replicate project management functionality

Non-Functional Requirements

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- Performance - The application must handle areas with slow network connections
- Usability - The mobile application should be user-friendly and responsive
- Maintainability - Code should be easy to understand for future developers



Constraints



- React Native Framework
- Functionality must be the same as Buildertrend's current app
- Integration with pre-existing technology

Risks & Mitigation

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- Relying on captured HTTP requests - mitigate
- Lacking Understanding of React Native Framework - avoid
- Relying on mobile phones - mitigate

Resource/Cost Estimate

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- Open-source software: It's free to use!
- Developers are all using Macs and have rented these from Iowa State
- Platform testing can be done with free virtual devices

Milestones & Schedule



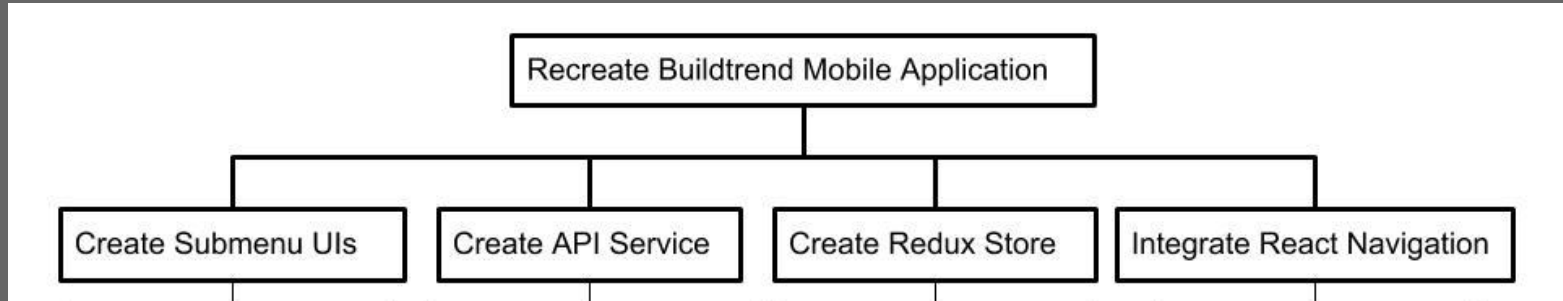
Name	Start	Finish	Duration	2018					2019					
				8	9	10	11	12	1	2	3	4	5	
Buildertrend App	27.08.2018	03.05.2019	250d											
Initial Prototype	27.08.2018	14.12.2018	110d											
Structured Prototype	15.12.2018	08.02.2019	56d											
Final Prototype	09.02.2019	03.05.2019	84d											

System Design

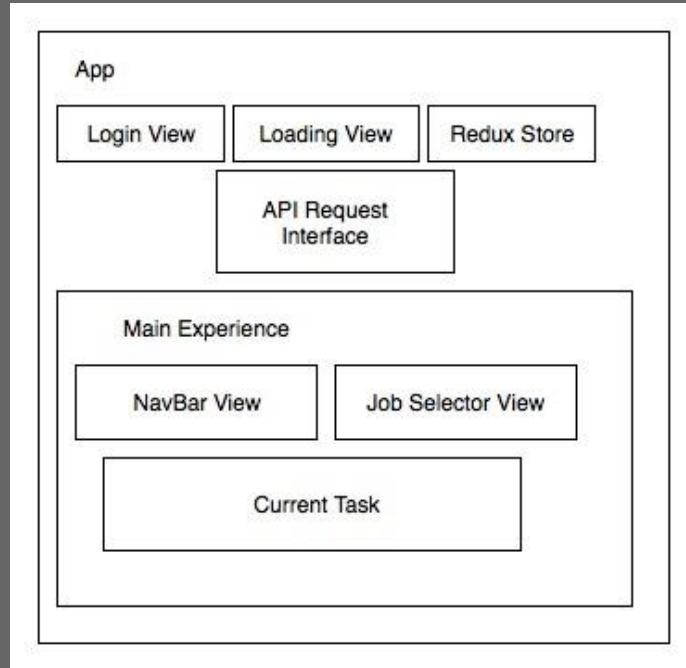
- Functional Decomposition
- Detailed Design
- Hardware and Software platforms
- Test Plans
- Prototypes

Functional Decomposition

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Detailed Design



Hardware & Software Platforms

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- Hardware: Smart Phones
- React Native
- Jest and Enzyme
- Redux
- Gitlab, ESLint
- Android Studio/XCode: Simulation
- Yarn



Test Plan

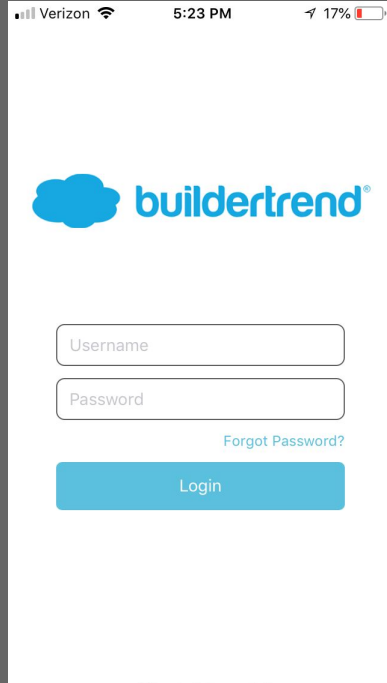
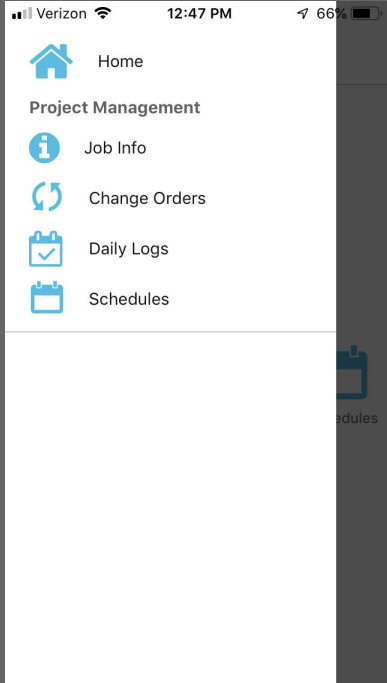
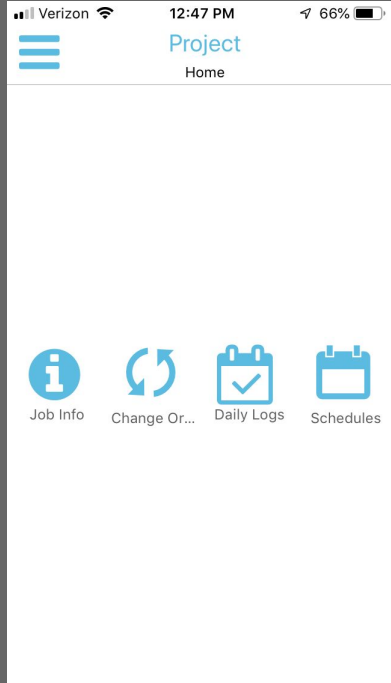


- Continuous Integration (automated testing)
 - Unit testing (component based)
 - Functional testing (component interactions)
 - Integration Testing
 - Connection to servers
- Manual testing

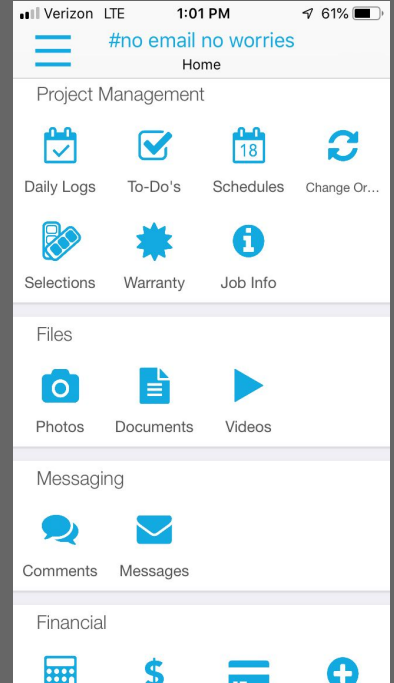


Initial Prototype

Our Application



Existing BT Application



Conclusion



Project Status



- Finished Phase 1: Initial Prototype
 - Architecture and skeleton of app
- Began Phase 2: Structured Prototype
 - Fill in the functionality of each component

Task Responsibilities

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- Frank - API Services
 - Login/Logout
 - Integration with BT backend
- Victor - Architect
 - Architecture Implementation
 - React Navigation
 - Redux Store
- Kyle - Scribe/Meeting Facilitator
 - Ambassador for Client
 - Arranges meetings
- Mich - Front End Dev
 - Implements UI Components
 - UI Styling
- Lucas - Architect
 - Designs architecture
 - React Navigation
- Walter - Front End Dev
 - Implements UI Components
 - UI Styling

Next Semester Plan

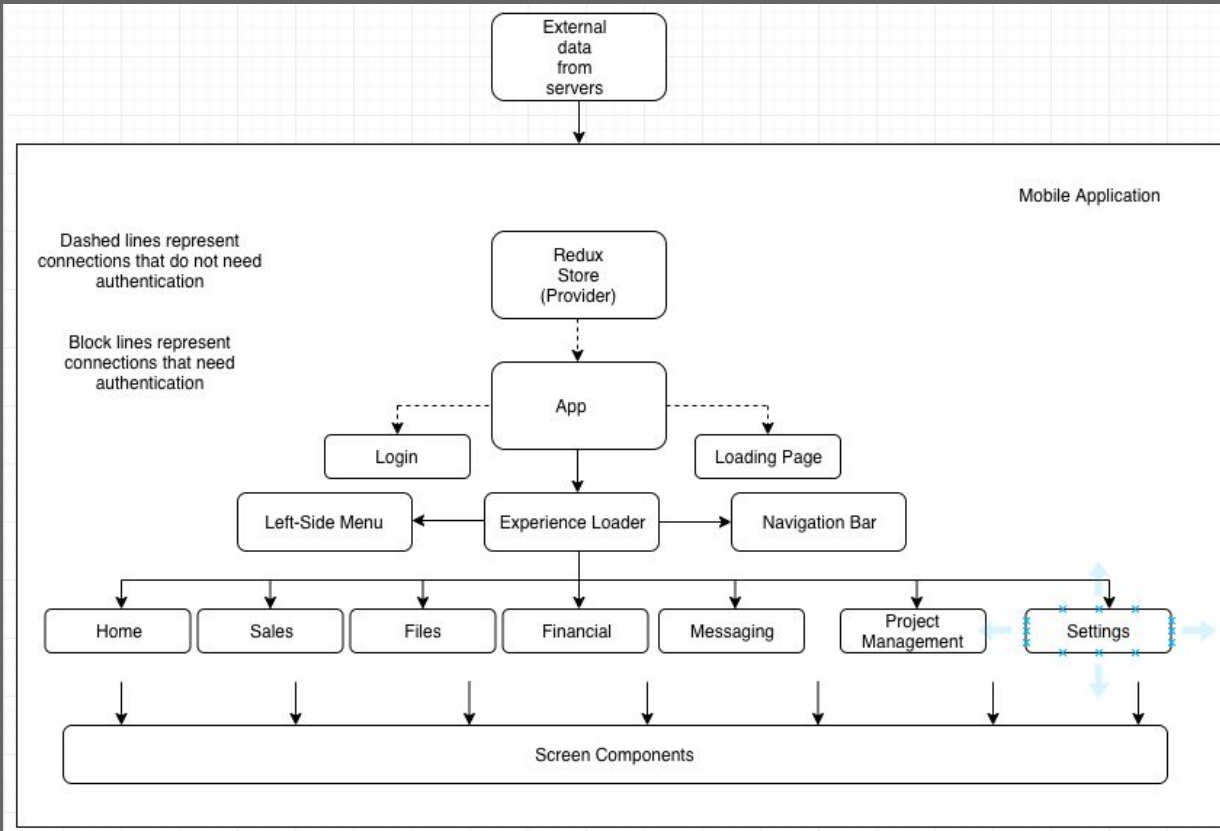
- Finish phase 2
 - Functional submenu component UIs
 - Complete navigation (Experiencing loading)
- Begin phase 3 of our application
 - Integration with BT backend
 - Finalized styling
- Prepare for project transition

Thank You!

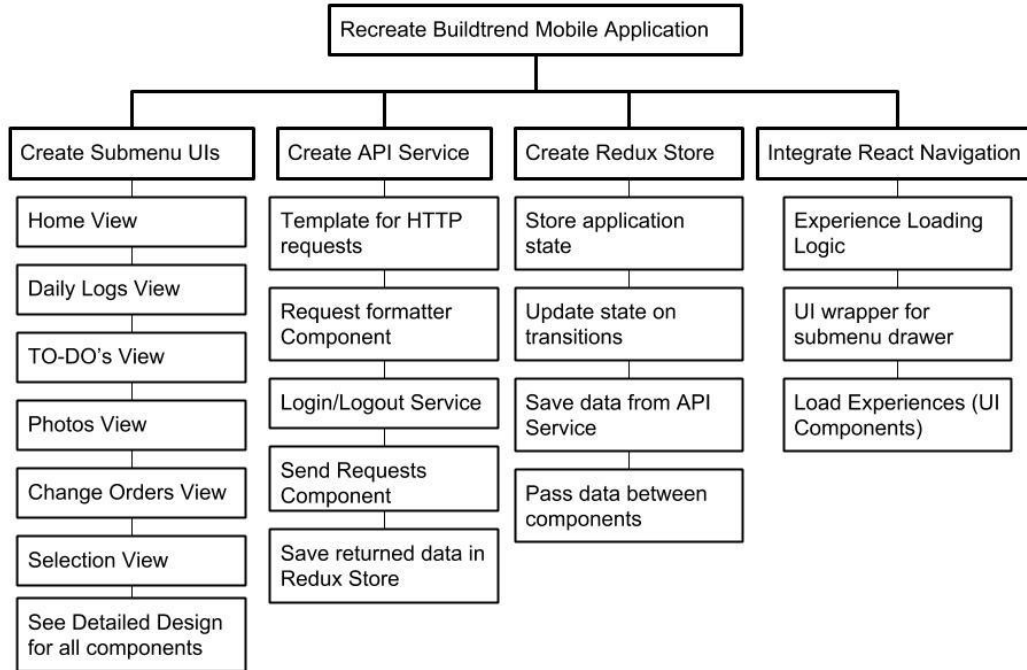
Questions?

Conceptual Sketch

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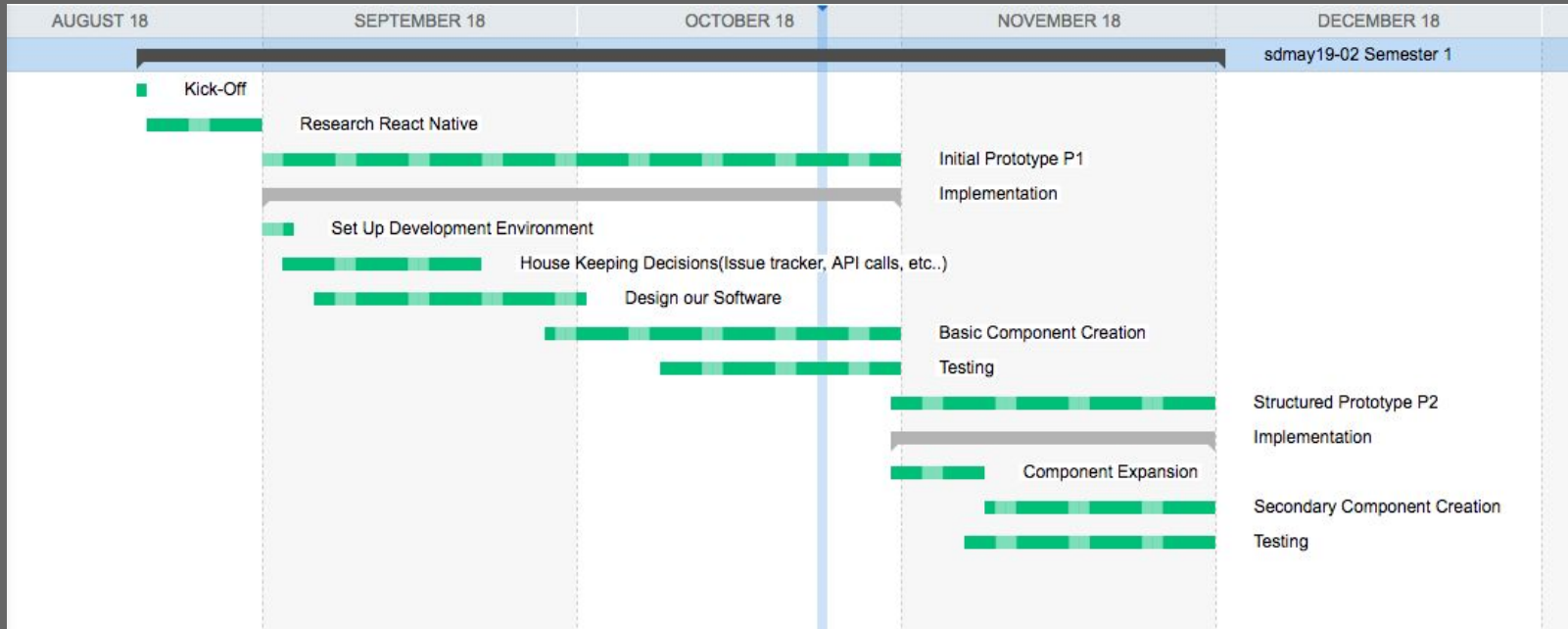


Functional Decomposition



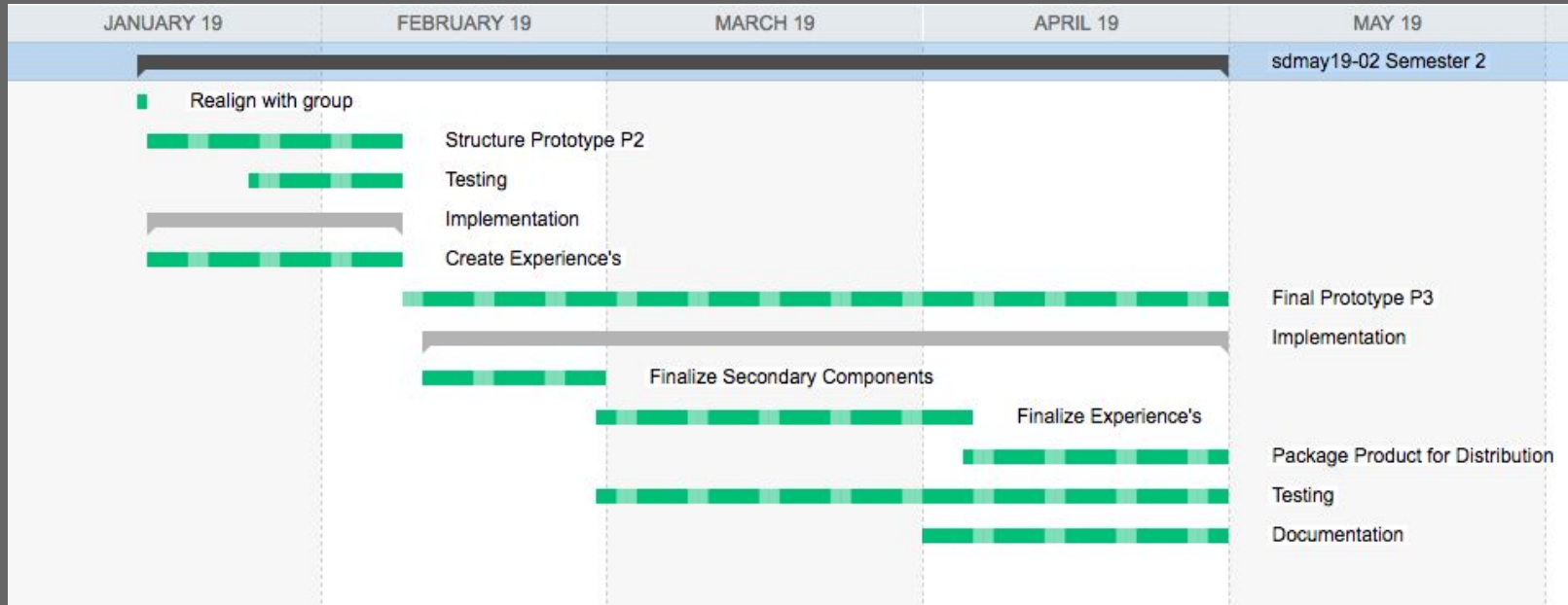
Gantt Chart Semester 1

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Gantt Chart Semester 2

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Detailed Design

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