

# CS310 Project Presentation

A Personal Finance Tool

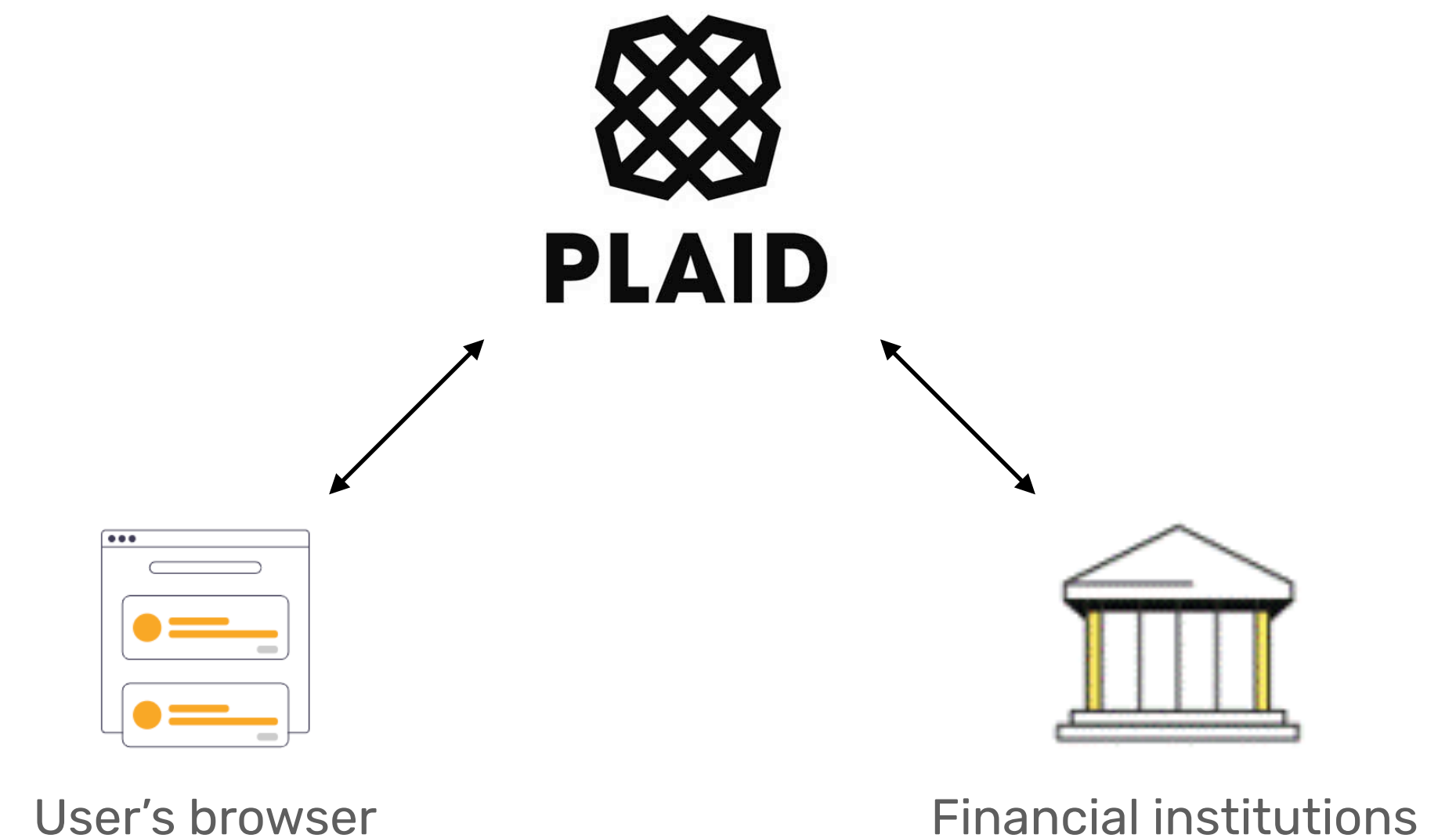
Kiran Sanganee



- Personal finance tool website
- Users can collate accounts to view analytics in one central dashboard
- Built using open banking technology
- 3 key parts:
  - Transactions
  - Budgets
  - Investments



- What is open banking?:  
*"APIs that enable third-party developers to build applications and services around the financial institution"*
- Plaid
  - Standardises the API interaction
  - Can access hundreds of different banks
  - Users have tokens to access financial information
  - Sandbox, development, production modes
- Ensured financial guidance rather than advice



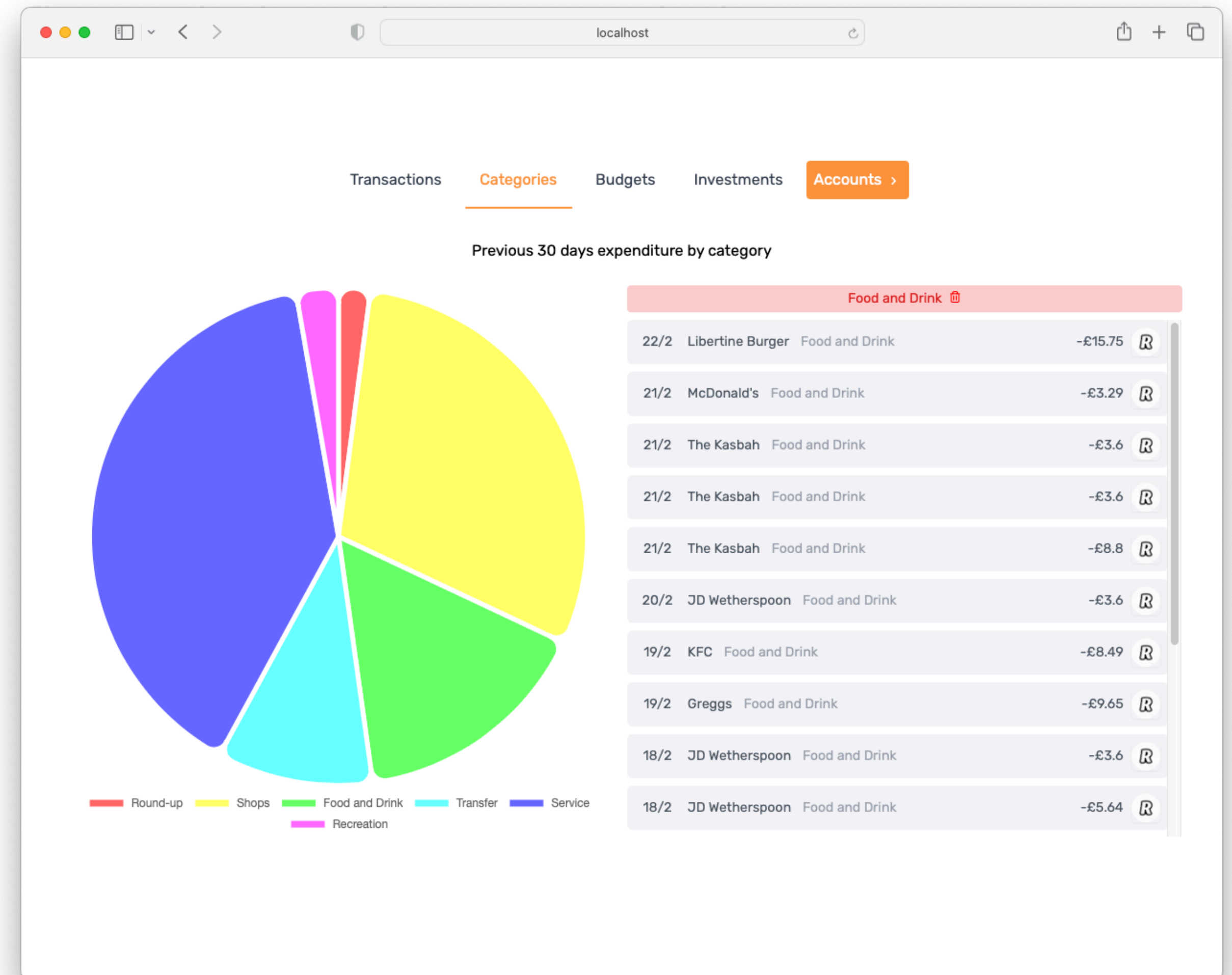
- Using new open banking technology - 5 years old
- Improve financial literacy and money management - MaPS recommend budget planner
- Limitations of current products: 3 types
  - Manual importing websites
  - Mobile banking apps
  - Expensive and lacking analytics
- View all accounts in one place
- Make spending predictions



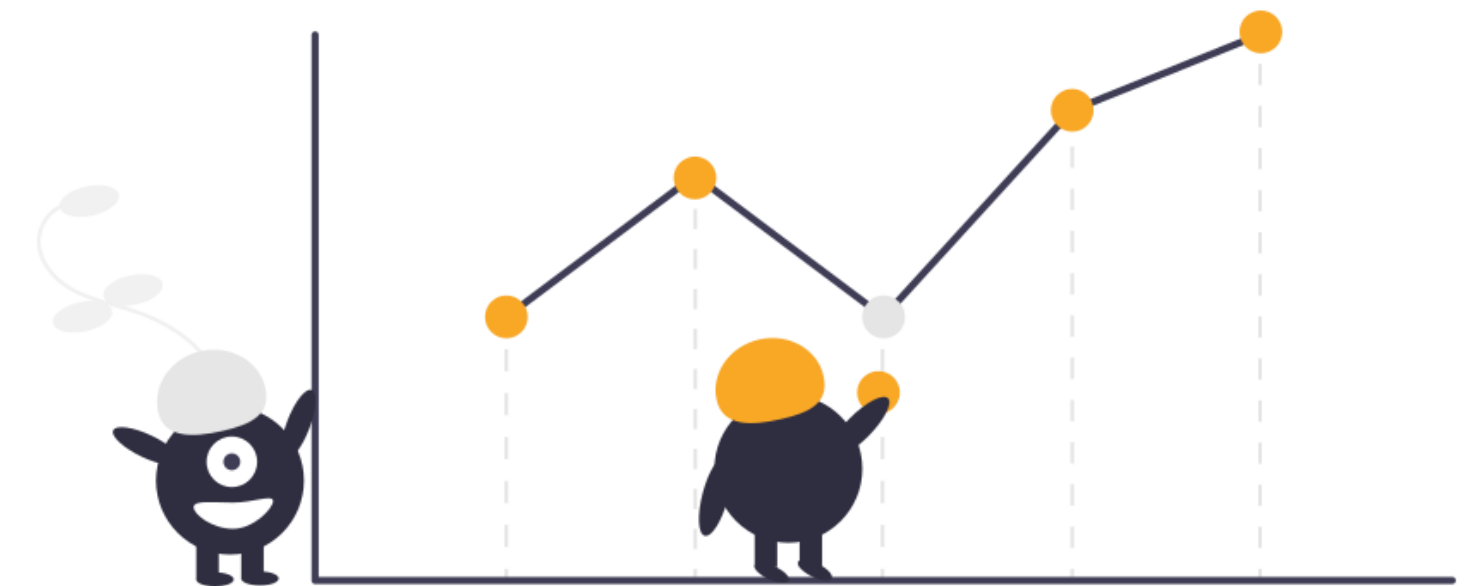
1. Research into development technologies
2. PoCs (authentication system, basic plaid) and merge
  - Waterfall as clear plan
3. Repeated strategy implementation
  - Agile with 3 week sprints (research, develop, test)
4. Budget prediction as separate major feature



- Prototyped several designs
- Focused on slick UI
  - Professional to trust with financial data
  - Scalable components - based in window size
- Works on range of devices

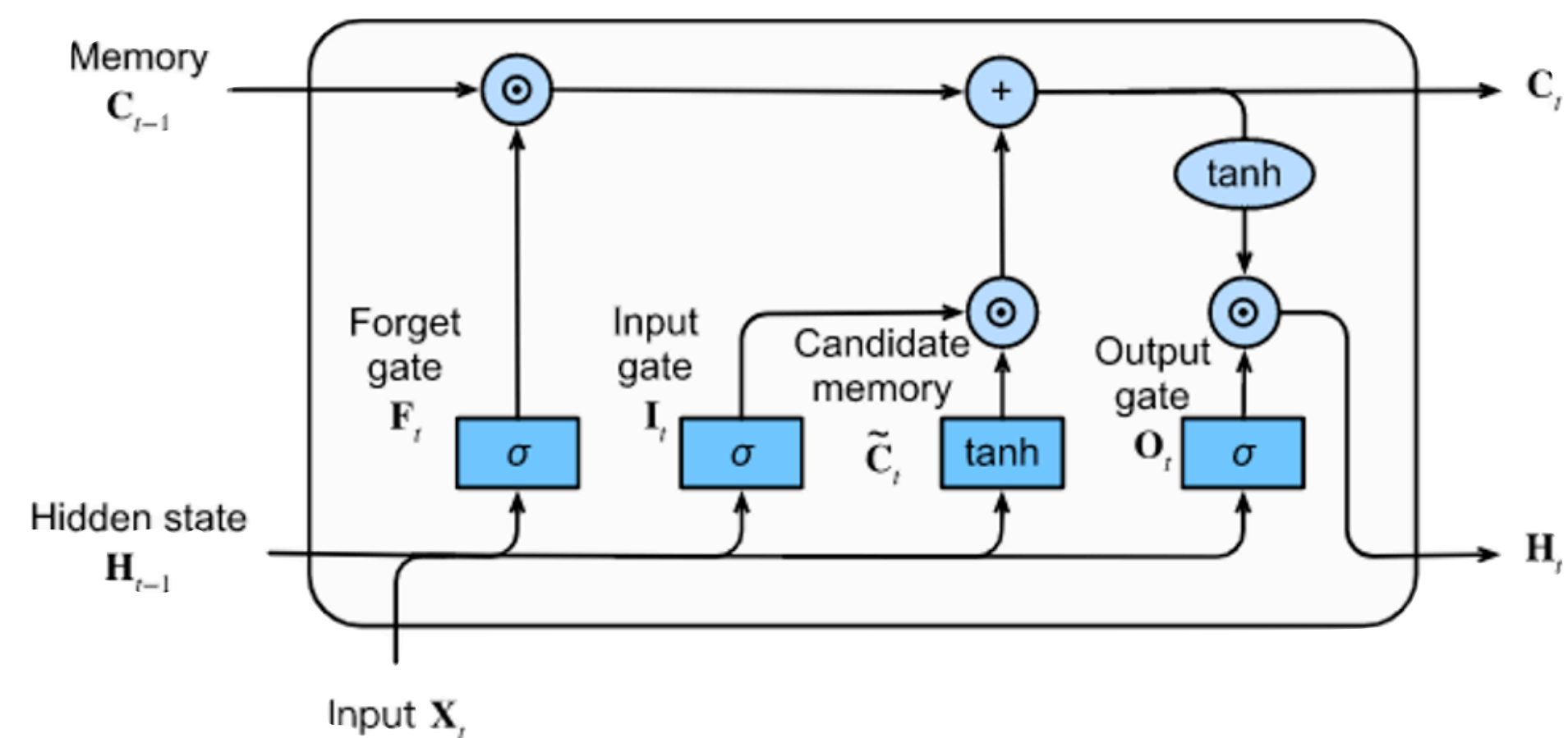
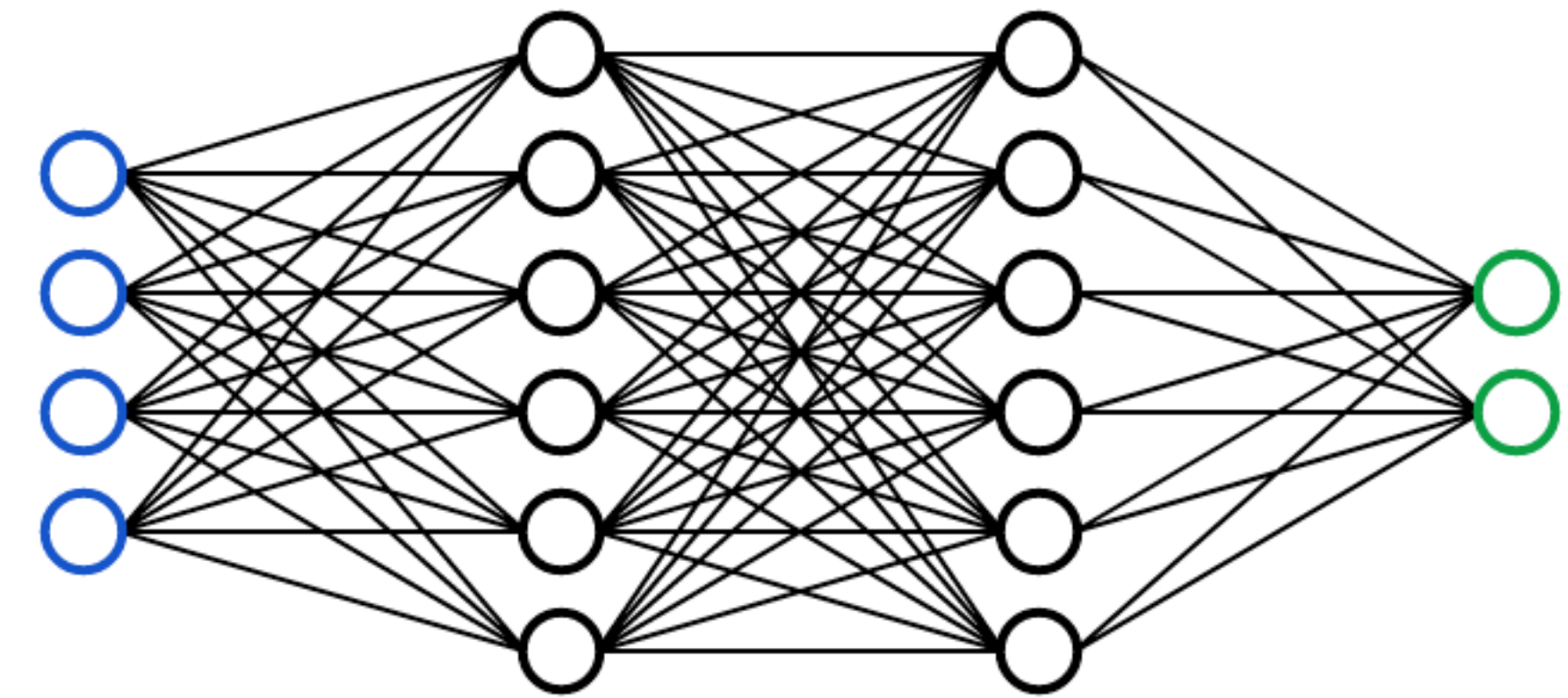


- Budget prediction options
  - Basic algorithm - manually identify features, detect cycles, simple + fast
  - Linear regression - linear unless projected into higher feature space (overly complicated)
  - Neural network
    - What is input size?
    - What should output be?
    - Involve training from financial data



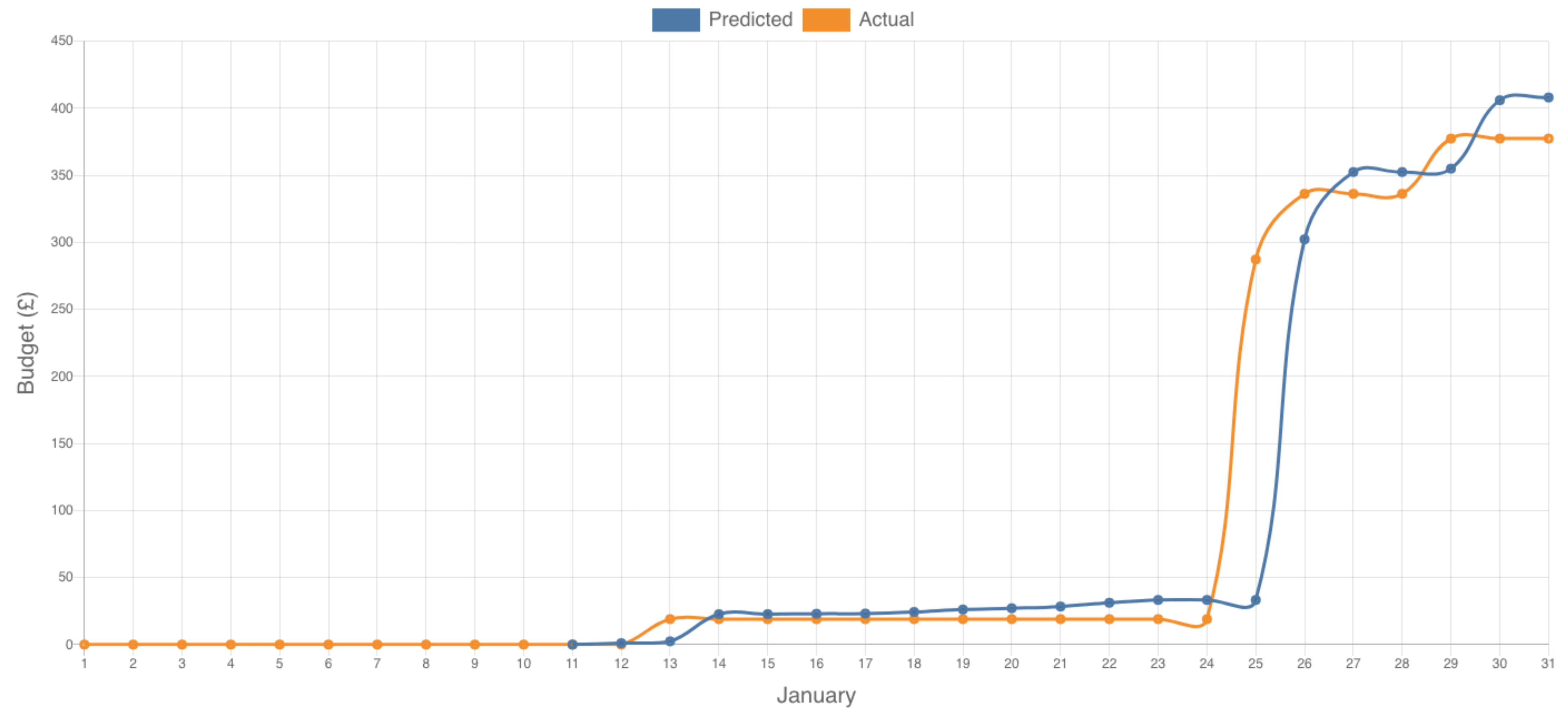


- Basic NN vs Recurrent NN
- Can treat data like time series financial data
- Using cumulative spendings
- LSTM nodes
- Window size of 30
- One model per user vs. One model





Budget Prediction Comparison



Introduction

Background

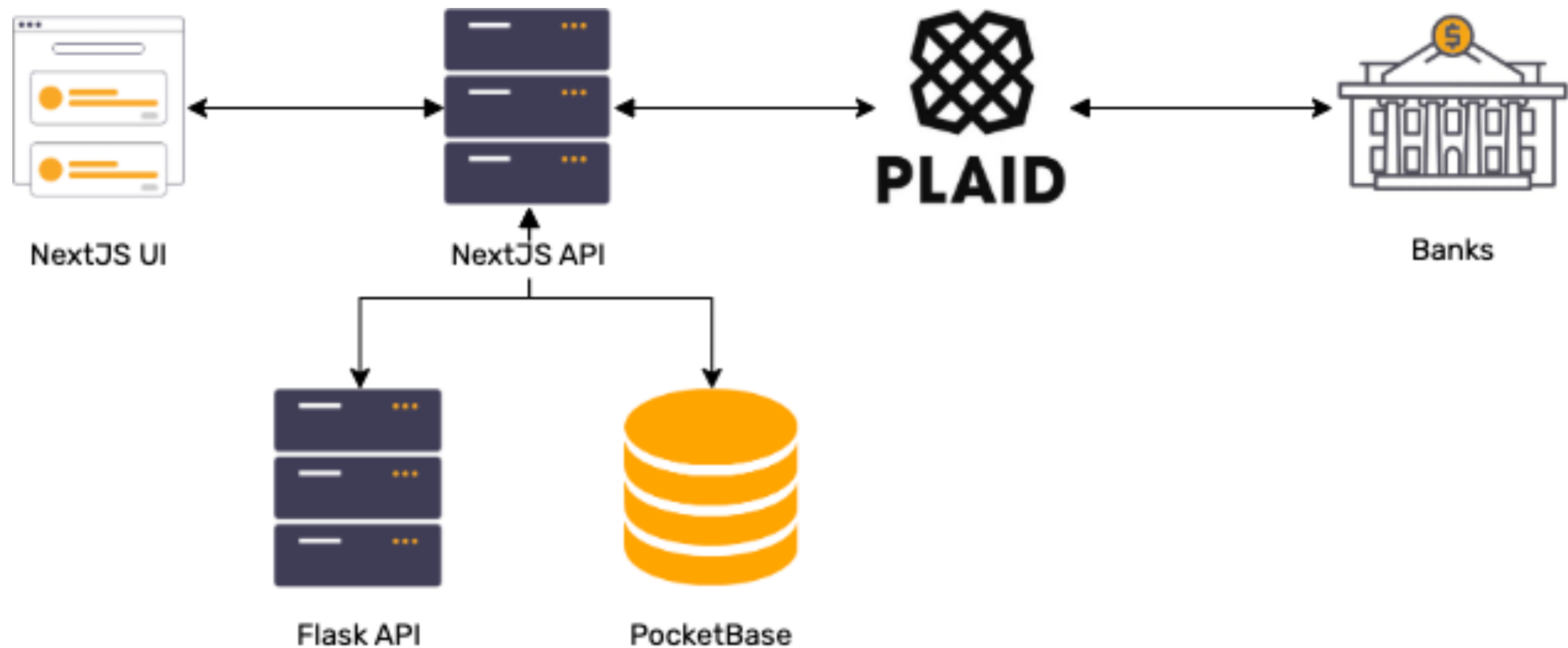
Motivation

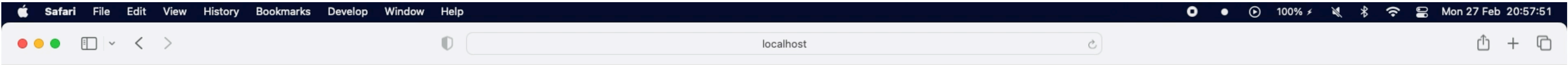
Timeline

Software

Demo

Management





You have signed out

Email

Password

Login

Don't have an account?



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- Used git for version control
  - Gitflow workflow - dev + feature branches, must pass test before merging
- Testing difficult as only can use plaid fake data or mine - managed 100 live credentials

### Successes

- Developed a personal finance tool with using open banking technology
- Assesses live financial data
- 'Accurate' budget prediction

### Future improvements

- Add further strategies e.g. balances
- Use more real financial data to improve training for neural network
- Macro and Micro models