



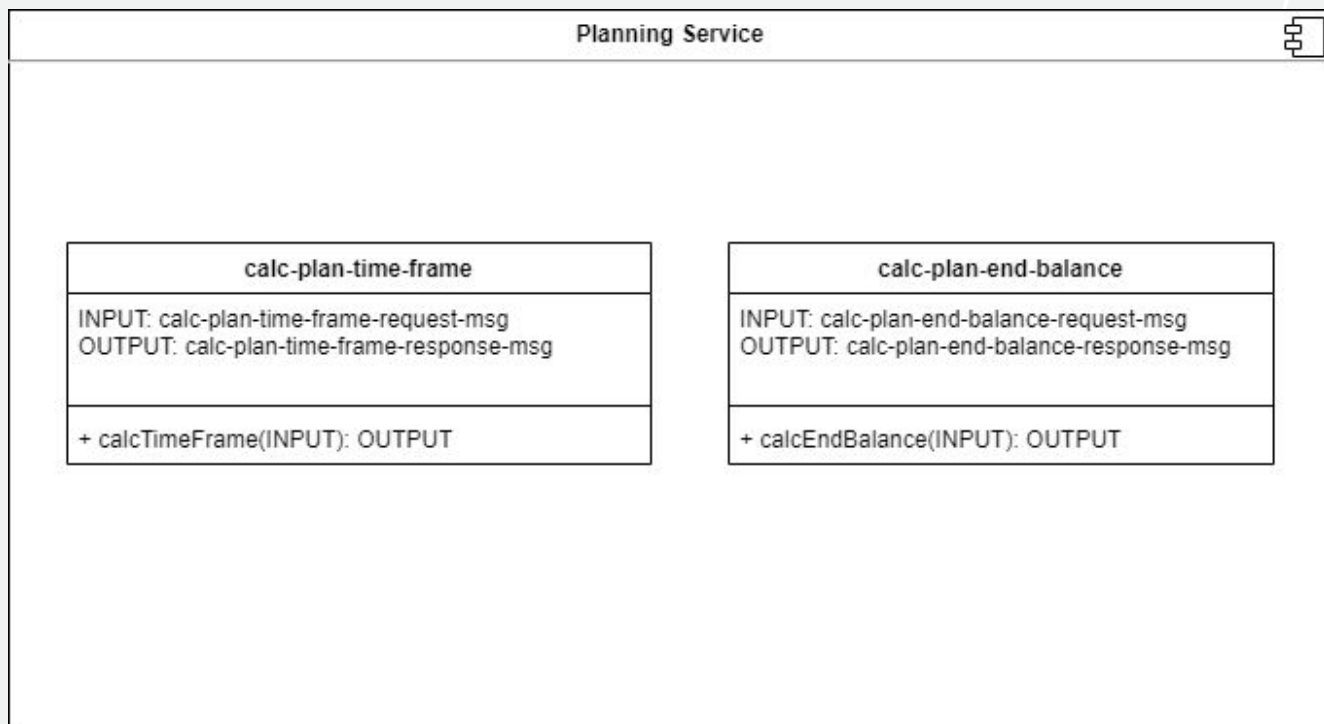
YggFinance

Design Documentation

Savings Planner Page
+ savingsPlannerData: object(See Appendix 3.1.2 for format)
+ onPageLoad() + refreshPage() + saveChanges() + saveToLocalStorage() + switchPlanningMode() + calculateTimeFrame() + calculateSavingsGoal()

Modules and Services

Savings Planner Page



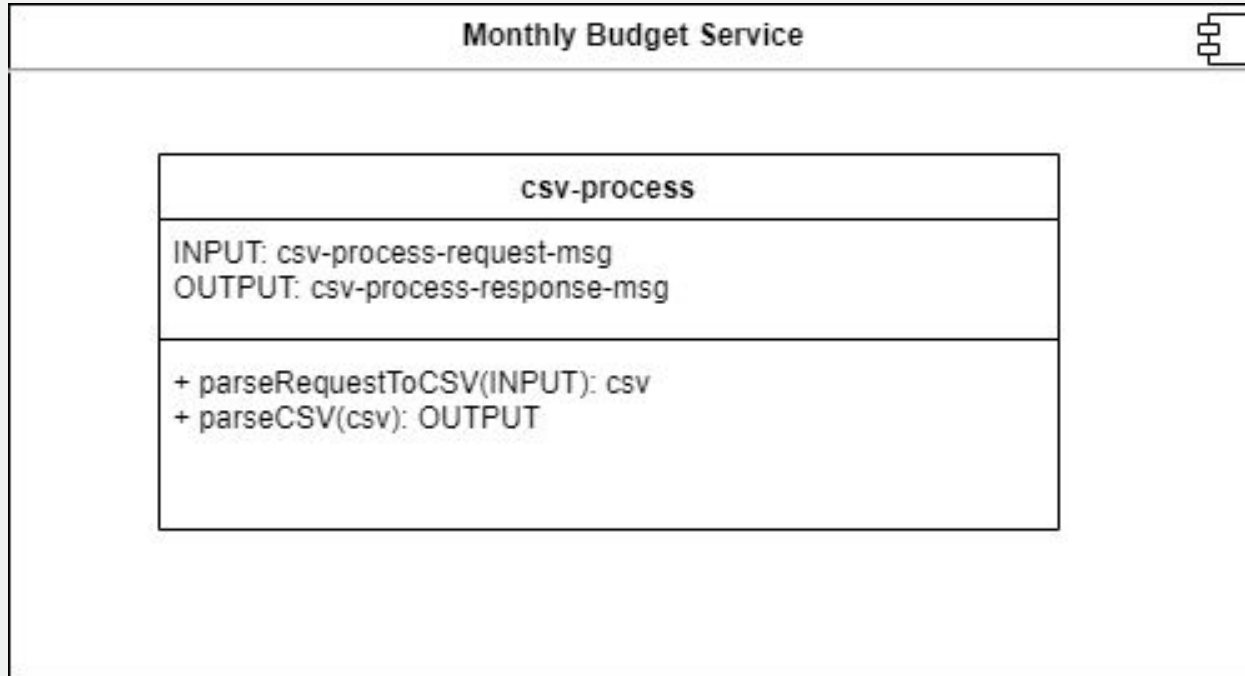
Modules and Services

Planning Service

Monthly Budget Page
+ monthlyBudgetData: object(See Appendix 3.2.2 for format)
+ onPageLoad() + refreshPage() + saveChanges() + addNewMonth() + confirmChanges() + switchVisiblePaper() + chooseFile() + uploadCSV()

Modules and Services

Monthly Budget Page



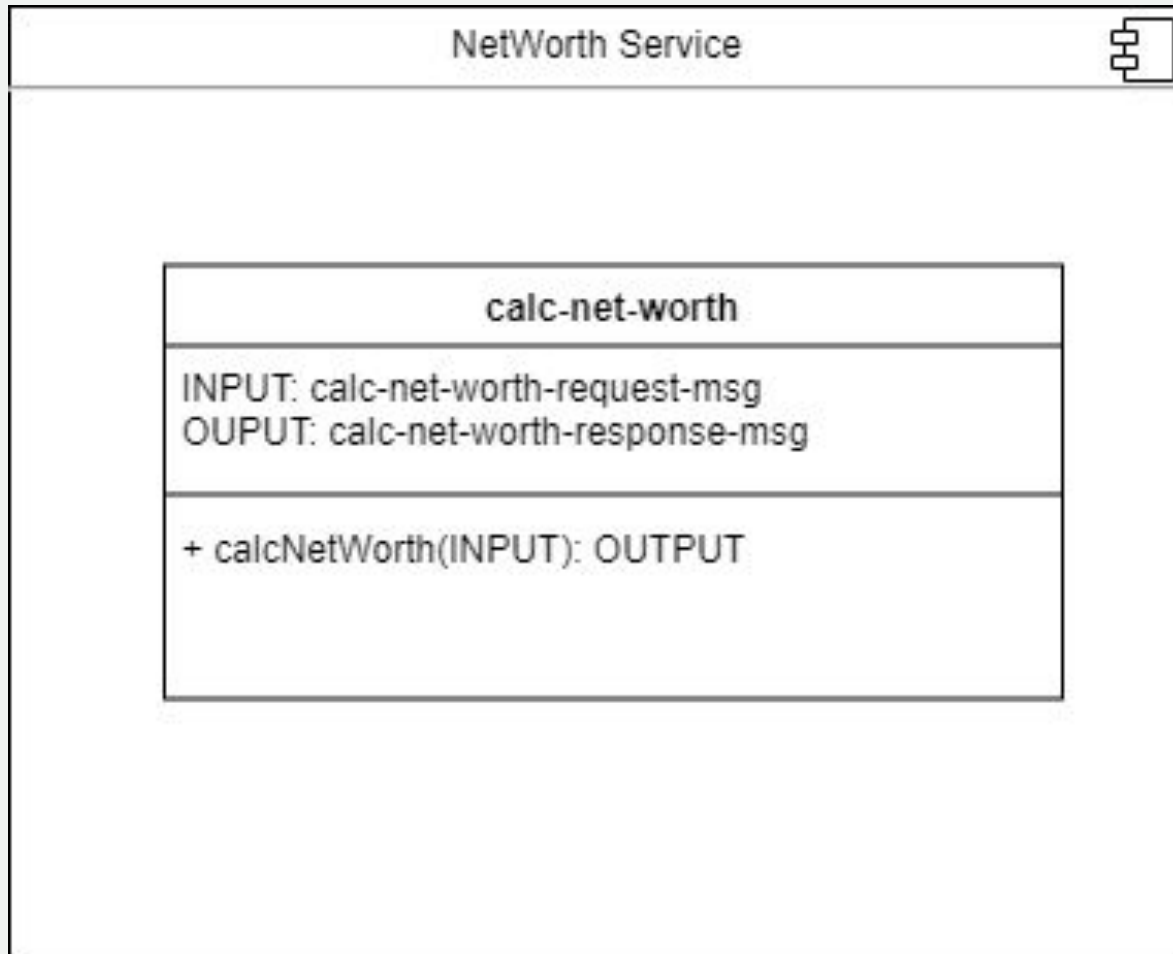
Modules and Services

Monthly Budget Service

Net Worth Page
+ netWorthData: object(See Appendix 3.3.2 for format)
+ onPageLoad() + refreshPage() + saveChanges() + saveToLocalStorage() + calculateNetWorth()

Modules and Services

Net Worth Page



Modules and Services

Net Worth Service

Storage Paradigm

- No Databases
- All data stored client side
- Local Storage

Savings Planner Storage

Entry: savings-planner-data

Value:

```
{  
  initialInvestment: number,  
  avgRateOfReturn: number,  
  monthlyContributions: number,  
  planningMode: boolean,  
  timeframe: number,  
  savingsGoal: number  
}
```

Entry: monthly-budget-data

Value:

```
{
  budgetedMonths : array[BudgetMonth]
}

const BudgetMonth = {
  month: number,
  year: number,
  categories: array[Category],
  bankTransactions: array[Transaction]
}

const Category = {
  name: string,
  budget: number,
  transactions: array[Transaction]
}

const Transaction = {
  merchant: string,
  amount: number,
  date: string, // (date.toJSON)
  isReconciled: boolean
}
```

Monthly Budget Storage

Entry: net-worth-data

Value:

```
{
  assets: Assets,
  liabilities: Liabilities,
  netWorth: number
}

const Assets = {
  realEstateValue: number,
  checkingAccountsBalance: number,
  savingsAccountsBalance: number,
  retirementAccountsBalance: number,
  automobilesValue: number,
  other: number
}

const Liabilities = {
  remainingMortgageBalance: number,
  consumerDebt: number,
  personalLoans: number,
  autoLoans: number,
  studentLoans: number,
  other: number
}
```

Net Worth Tracking Storage

API Structure

- HTTP Calls
- RESTful? (compromised)
- Primarily JSON messages
 - Exception: One FormData message request is necessary to send a csv file to the server.
 - Exception? The HTML for the WebApp itself (should have been obvious)

Planning Service API

calc-plan-end-balance

calc-plan-end-balance-request-msg

Request Content-Type: "application/json"

Request JSON Contract:

"savings-planner-data" entry (On Previous Slides)

calc-plan-end-balance-response-msg

Response Content-Type: "application/json"

Response JSON Contract:

```
{  
  endBalance: number,  
  timeFrame: number,  
  startingAmount: number,  
  totalContributions: number,  
  totalInterest: number  
}
```

calc-plan-time-frame

calc-plan-time-frame-request-msg

Request Content-Type: "application/json"

Request JSON Contract:

"savings-planner-data" entry (On Previous Slides)

calc-plan-time-frame-response-msg

Response Content-Type: "application/json"

Response JSON Contract:

```
{  
  endBalance: number,  
  timeFrame: number,  
  startingAmount: number,  
  totalContributions: number,  
  totalInterest: number  
}
```

Monthly Budget Service API

csv-process

csv-process-request-msg

Request Content-Type: "multipart/form-data"

Request Form Contract:

```
// set fields
  hasHeaders: boolean
  merchantColumn: string
  amountColumn: string
  dateColumn: string
// appended files
  file: file
```

csv-process-response-msg

Response Content-Type: "application/json"

Response JSON Contract:

```
{
  transactions: array[Transaction]
}

const Transaction = {
  merchant: string,
  amount: number,
  date: string, // (date.toJSON)
  isReconciled: boolean
}
```

Net Worth Service API

calc-net-worth

calc-net-worth-request-msg

Request Content-Type: "application/json"

Request JSON Contract:

"*net-worth-data*" entry (On Previous Slides)

calc-net-worth-response-msg

Response Content-Type: "application/json"

Response JSON Contract:

```
{  
  netWorth: number  
}
```

Web Server Service API

get-web-app

get-web-app-response-message

Response Content-Type: "text/html"

Response Content: The YggFinance WebApp

Application and User Interface

- Users connect via web browser URL
 - Javascript must be supported and enabled
 - Access to web browser's local storage required
- Material UI style library will be used for graphical elements
- Webpage will accommodate a display supporting a 16:9 aspect ratio at 720p
 - Other aspect ratios and resolutions may function, while unoptimized

Welcome Page Wireframe

YggFinance

Welcome

Savings Planner

Monthly Budget

Net Worth

Hello! Welcome to YggFinance.

Welcome! YggFinance is a personal finance web application. The application is intended for users to do things like calculating growth of savings over time, budgeting monthly expenses with their income, and calculating a user's net worth. Above is the MENU. Select the page you wish to go to from this menu.

Description of Savings Planner

Description of Monthly Budget

Description of Net Worth Tracking

Savings Planner Time Frame Mode Wireframe

YggFinance

Welcome

Savings Planner

Monthly Budget

Net Worth

Savings Planner

Initial investment (USD)

\$0.00

Average rate of return (%)

0%

Monthly Contributions (USD)

\$0.00

Years to grow:

Slider; Range: 1-100 (Years)

Calculate savings goal

End Balance	\$0.00
Time Frame	0 years
Starting Amount	\$0.00
Total Contributions	\$0.00
Total Interest	\$0.00

Planning Mode:
Time Frame | Savings Goal

Savings Planner Savings Goal Mode Wireframe

Savings Planner

Initial investment (USD)

\$0.00

Average rate of return (%)

0%

Monthly Contributions (USD)

\$0.00

Savings goal (USD)

\$0.00

Calculate Time Frame

End Balance	\$0.00
Time Frame	0 years
Starting Amount	\$0.00
Total Contributions	\$0.00
Total Interest	\$0.00



Planning Mode:
Time Frame | Savings Goal

YggFinance

Welcome

Savings Planner

Monthly Budget

Net Worth

Net Worth

[illegible]

Reconcile

Monthly Budget Reconciliation Mode Wireframe

Monthly Budget

Upload a bank statement

Self-tracked:

Bank Statements:

Edit table

Edit table

1	Merchant	Amount	Date	1	Merchant	Amount	Date
2				2			

Total:

\$0.00

Total:

\$0.00

Reconciled!
(Will appear if
totals match)

History:

[illegible]

Net Worth Wireframe

YggFinance

Welcome

Savings Planner

Monthly Budget

Net Worth

Net Worth

Assets

\$0.00

Real Estate Value

\$0.00

Checking Account(s) Balance(s)

\$0.00

Savings Account(s) Balance(s)

\$0.00

Retirement Account Balance

\$0.00

Automobile Value(s)

\$0.00

Other Assets

\$0.00

Total:

\$0.00

Liabilities

\$0.00

Remaining Mortgage Balance

\$0.00

Consumer Debt

\$0.00

Personal Loans

\$0.00

Auto Loans

\$0.00

Student Loans

\$0.00

Other Liabilities

\$0.00

Total:

\$0.00

Calculate

Net Worth:

\$0.00