YggFinance

Progress Update

Introduction

YggFinance Personal Finance Web Application

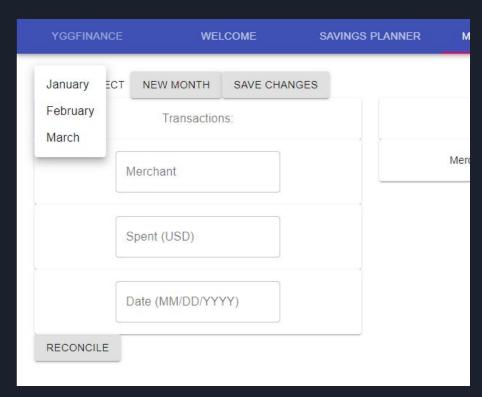
- Monthly Budgeting
- Savings Planning
- Net Worth Tracking.

Order of Presentaion:

- 1. Web Application UI
- 2. Backend Docker Microservices
- 3. Server Setup and Configuration

YggFinance Web App - Changes

- Using text fields for Monthly Budget data
 - EditTableAPI last updated 2017
- Using text field for time period selection
 - Slider gives less freedom
- Dropdown menu for month names
 - Easier for data manipulation



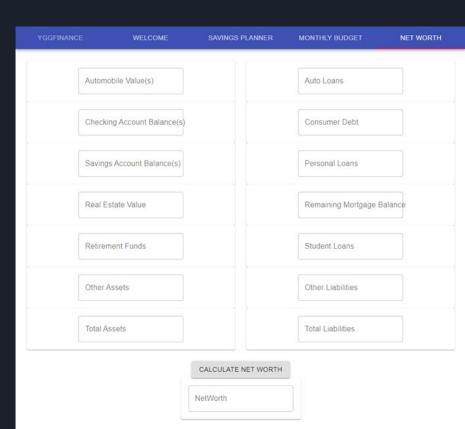
YggFinance Web App - Completed

- Entirety of App contained within NavBar(Top Menu)
 - Allows the use of TabPanel to separate pages
 - Pages load simultaneously
- Welcome Page
 - Full descriptions of all tools available
- Savings Planner page
 - UI elements laid out. Prepared for data testing through server
 - Data tables are compartmentalized to their own .js script
- Monthly Budget page
 - UI Elements laid out
 - Reconciliation currently disabled
 - History table compartmentalized to its own .js script
- Net Worth Page
 - UI Elements laid out
 - Ready for local UI data handling

```
reactis > src > JS App.js > [@] default
       import './App.css';
       import React from 'react';
       import NavBar from './components/NavBar'
       function App() {
         return (
           <div>
             <NavBar />
           </div>
         );
 11
 12
       export default App;
 13
```

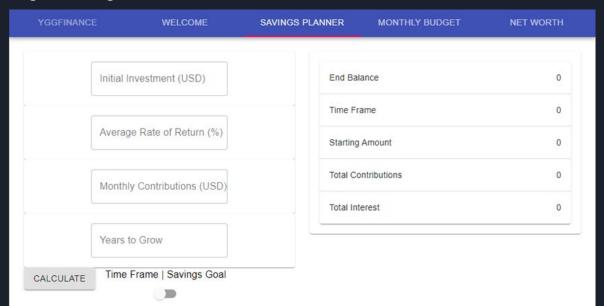
YggFinance Web App - In Progress

- Testing data handling locally through Net Worth page
 - All other data will be transferred through server to back end
- Dockerizing App pages for server communication
- Editing all pages to look more clean (professional)
 - Customization from defaults is a long process



YggFinance Web App - To be Implemented

- CSV file handling
 - No CSV, no reconciliation
 - Upload Button
- Selectable data labels for currencies (select text fields)
- Data input validation through the UI (helpertext)
- UI grid editing



YggFinance Web App - Potential Issues

- Items are compartmentalized
 - Proper communication of data
- Stored user data loaded upon app load
- Auto-update item fields

```
149
                  </Typography>
150
              </TabPanel>
              <TabPanel value={value} index={2}>
151
152
                <SavingsPlanner/>
153
              154
              <TabPanel value={value} index={3}>
155
                <MonthlyBudget/>
              </TabPanel>
156
```

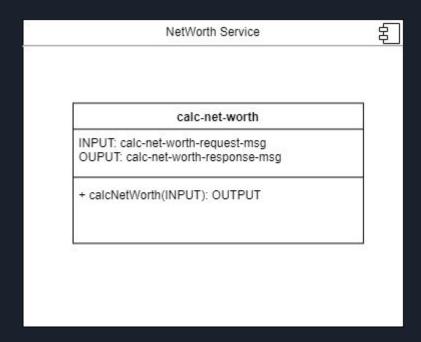
Services - Backend

- Monthly Budget
 - Parse CSV
 - Filter/transform CSV
- Savings Planner
 - Calculate time frame
 - Calculate future value
- Net Worth
 - Networth = Assets Liabilitites



Functions - Completed

- Planning service
 - calcTimeFrame()
 - calcEndBalance()
- Net Worth service
 - calcNetworth()
 - Returns JSON format



Services - In Progress

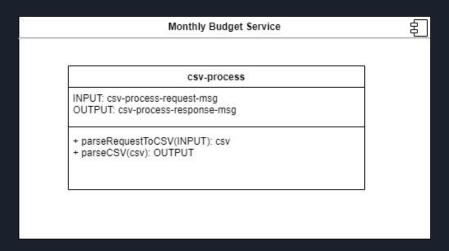
- Monthly Budget
 - o Filter certain CSV columns
- JSON message input and output function
- Each service needs to be containerized for Docker

Services - Potential Issues

- It will be a challenge to figure out how to filter out unnecessary data from the CSV files
- One possible solution would be to configure the CSV parsing to fit a specific format directly related to a specific financial institution

```
// set fields

hasHeaders: boolean
merchantColumn: string
amountColumn: string
dateColumn: string
// appended files
file: file
csv-process-response-msg
```



Services - Changes

- No official changes on backend
- Challenges with CSV manipulation are being faced

A1 \rightarrow \uparrow \times \checkmark f_x 9/1/2020										
A	А	В	С	D						
1	9/1/2020		Debit Card Transaction"SQ *WHITE CASTLE	(\$97.68)						
2	9/1/2020		Ach withdrawal"The Pub	(\$7.67)						
3	9/1/2020		Ach withdrawal"US BANK HOME MTG MTG PYMT	(\$1,200.00)						
4	9/2/2020		Ach withdrawal"SUNTRUST	(\$156.24)						
5	9/3/2020		Debit Card Transaction"KROGER	(\$10.00)						
6	9/4/2020		Ach deposit"ACME INC	\$1,596.49						
7	9/4/2020		Ach withdrawal"COMCAST	(\$108.35)						
8	9/8/2020		Ach deposit"VENMO CASHOUT	\$75.00						
9	9/8/2020		Debit Card Transaction"DOLLAR-GE	(\$5.66)						
10	9/9/2020		Ach deposit"VENMO CASHOUT	\$35.00						
11	#######		Ach deposit"VENMO CASHOUT	\$85.00						
12	########		Ach deposit"LOWE'S HOME CENT DIR DEP	\$123.69						
13	#######		Ach deposit"VENMO CASHOUT	\$15.00						
14	#######		Debit Card Transaction"DAIRY QUEEN #44484 WHITE HOUSE	(\$8.32)						
15	#######		Debit Card Transaction"WM SUPERCENTER # WHITE HOUSE T	(\$11.00)						
16	#######		Debit Card Transaction"ORCHARD PARK ANIMAL HO WHITE H	(\$331.36)						
17	#######		Debit Card Transaction"USPS PO 47914401 Nashville TN"Term	(\$11.00)						
18	########		Ach withdrawal"CAPITAL ONE CRCARDPMT"ID: mystery shopp	(\$158.72)						

J32	 fx 						
	A	В	С	D	E	F	0
26	2021-02-12	Checking	Kroger	Groceries		-35.54	
27	2021-02-23	Checking	Amazon	General Mercha	ndise	-36.63	
28	2021-02-01	Checking	Colorado Grill	Restaurants		-37.65	
29	2021-02-12	Checking	Amazon Market	General Mercha	ndise	-43.87	
30	2021-02-06	Checking	Murphy Usa	Gasoline/Fuel		-47.47	
31	2021-02-07	Checking	Bakery	Other Expenses		-53.49	
32	2021-02-07	Checking	Walmart	General Mercha	ndise	-63.06	
33	2021-02-11	Checking	Walmart	General Mercha	ndise	-76.44	
34	2021-02-17	Checking	Ach Withdrawal	Utilities		-80.32	
35	2021-02-27	Checking	Walmart	General Mercha	ndise	-81.21	
36	2021-02-27	Checking	Walmart	General Mercha	ndise	-87.42	
37	2021-02-28	Checking	Walmart	General Mercha	ndise	-88.14	
38	2021-02-13	Checking	Walmart	General Mercha	ndise	-91.08	
39	2021-02-06	Checking	pub	Groceries		-94.32	
40	2021-02-16	Checking	Kroger	Groceries		-95.35	
41	2021-02-22	Checking	Piedmont Natura	Utilities		-104.4	
42	2021-02-04	Checking	Comcast	Cable/Satellite		-108.8	
43	2021-02-09	Checking	Walmart	General Merchandise		-121.18	
44	2021-02-05	Checking	Walmart	General Mercha	ndise	-131.22	
45	2021-02-16	Checking	Ins co	Insurance		-140	
46	2021-02-03	Checking	Walmart	General Mercha	ndise	-180.55	
47	2021-02-22	Checking	Walmart	General Mercha	ndise	-236.95	
48	2021-02-05	Checking	Airbnb	Travel		-367.9	
49							

Yggdrasil Server - Issues

Host on LAN? Easy and lots of experience with!

Q. How about opening it to the internet?

A. Have fun with that!

Issues:

- Port Forwarding
- Domain acquisition
- Static IP Addresses
- Dedicated Public IP Addresses
- A Headache...

Yggdrasil Server - Issues (cont.)

Q. How about using AWS?

- A. Issues:
- High Learning Curve
- Pricing is impossible to figure out (free? Or \$0.36? Or what?)
- Too many services (you can do the same thing in 5-10 different ways with different costs)

Q. How about another Hosting Provider?

- A. Try to find a free VPS, it's hard and often incredibly limited...
 - a. We decided to direct our efforts elsewhere on this front.

Yggdrasil Server - Solution

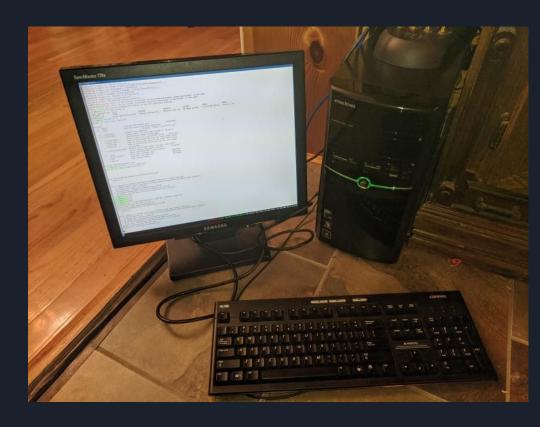
The solution? Tunneling to a proxy!

Local Tunnel

- No need to open router ports
 - All traffic is wrapped in a TLS tunnel to the proxy server only.
- No need to have a static or dedicated IP
- Free choice of subdomain (3rd level domain) names*
 - *assuming they aren't currently in use.
- Free and Open Source Software (FOSS)!
- Https connection: https://yggfinance.loca.lt

Yggdrasil Server - Completed

- Yggdrasil Server Setup:
 - o Machine: Emachines ET1331G-07w
 - OS: Ubuntu Server 20.04.2
 - o apt:
 - docker
 - docker-compose
 - npm(Node Package Manager)
 - ruby
 - i3 desktop environment
 - openSSH server
 - o npm:
 - localtunnel
 - o ruby gem:
 - localtunnel-restarter



Yggdrasil Server - To be Completed

Docker:

- DockerCompose Configuration File
- Docker Network
- Reverse Proxy nginx container
- Integration and Deployment of completed project pieces.

Yggdrasil Server - Potential Issues

- LocalTunnel likes to crash every once in a while (network instability)
 - Solution: localtunnel-restarter ruby gem
- No experience setting up a reverse proxy before
- DoSing/DDoSing?
 - Easy to change subdomain name
 - o Non-tunneled requests directly to the IP dropped.
- Security?
 - Low Value Target
 - Isolated vLAN
 - All requests are effectively over a reverse VPN
 - o Good enough for a demo

Conclusion

- Mostly on track for project completion
- Minor UI Changes
- No Major Backend Code Changes
- Self-Hosting instead of Hosting Service

