Back-end take home assignment (Feb 2025)

Goal

Build the following web socket using any language or framework. It will be used as the main point of discussion in the technical interview.

Instructions

1. Create a web socket:
    - Endpoint:

      ```
      wss://"whatever_you_want"/markets/ws
      ```

    - Subscription message:

```
{
   "event": "subscribe",
   "channel":"rates"
}
```

- Response message:

```
{
  "channel": "rates",
  "event": "data",
  "data": {
    "symbol": "BTC_CAD",
    "timestamp": 1718707723,
    "bid": 88973.83,
    "ask": 91044,
    "spot": 90008.92,
    "change": -0.49
  }
}
```

2. Data can be sourced from a 3rd party OR simulated. If simulated, prices should be within 50% of the previous week's close.
    - The following assets should be supported

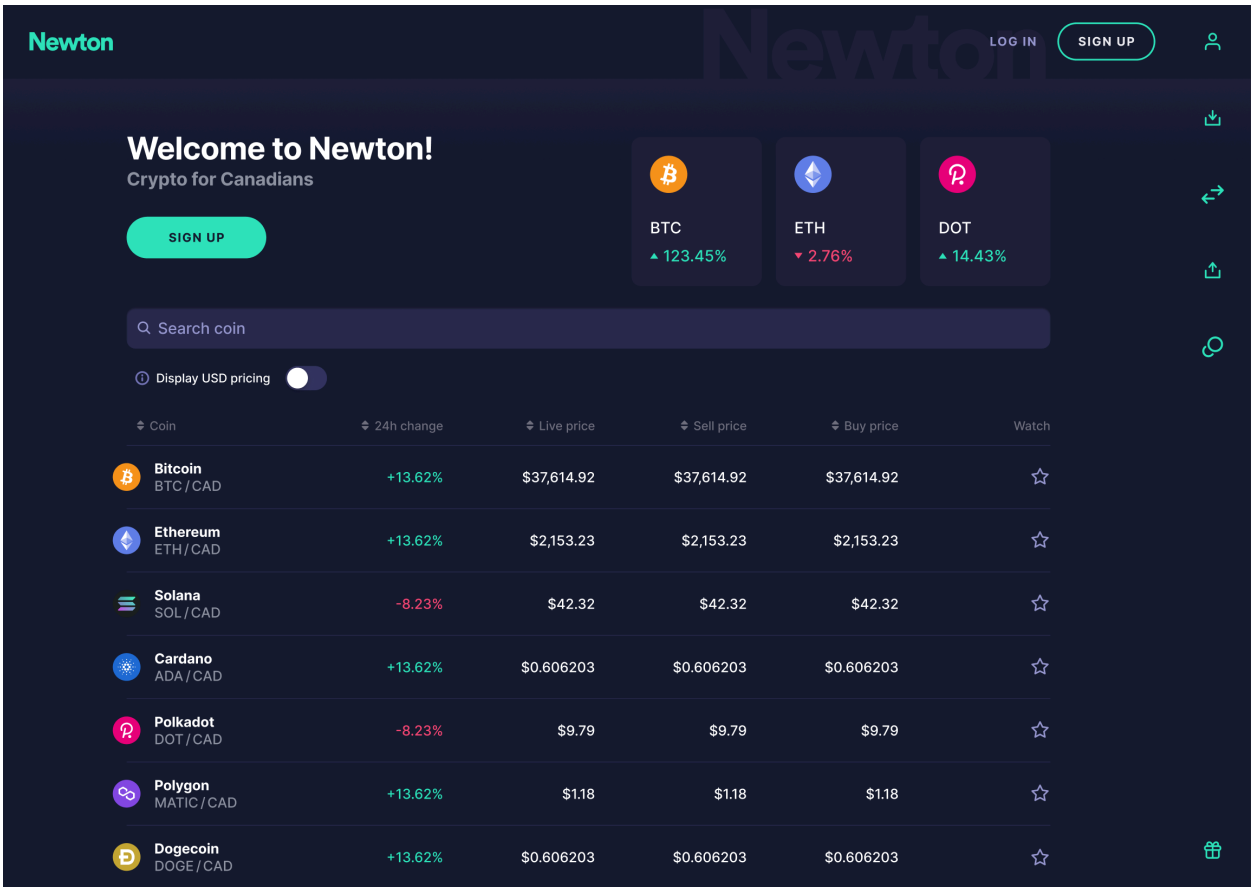
```
assets = [
   "BTC", "ETH", "LTC", "XRP", "BCH", "USDC", "XMR", "XLM",
   "USDT", "QCAD", "DOGE", "LINK", "MATIC", "UNI", "COMP", "AAVE", "D
AI",
   "SUSHI", "SNX", "CRV", "DOT", "YFI", "MKR", "PAXG", "ADA", "BAT", "EN
J",
   "AXS", "DASH", "EOS", "BAL", "KNC", "ZRX", "SAND", "GRT", "QNT", "E
TC",
   "ETHW", "1INCH", "CHZ", "CHR", "SUPER", "ELF", "OMG", "FTM", "MAN
A",
```

```
   "SOL", "ALGO", "LUNC", "UST", "ZEC", "XTZ", "AMP", "REN", "UMA", "S
HIB",
   "LRC", "ANKR", "HBAR", "EGLD", "AVAX", "ONE", "GALA", "ALICE", "ATO
M",
   "DYDX", "CELO", "STORJ", "SKL", "CTSI", "BAND", "ENS", "RNDR", "MA
SK",
   "APE"
]
```

3. Email a Github link of the source code to bruno@newton.co
4. FULL STACK OR STRETCH GOAL: Use the figma doc in the resources section to implement a front-end in React. Connect the websocket you created to this dashboard.

Resources

- As a visual reference, the web socket should be able to provide live updates for the following dashboard



- Figma link: https://www.figma.com/design/Y4FIEVIYliQ7KBfcHgxfSn/FE-Challenge?node-id=3501-31351&p=f&t=7jhVQOIvG3CATplX-0