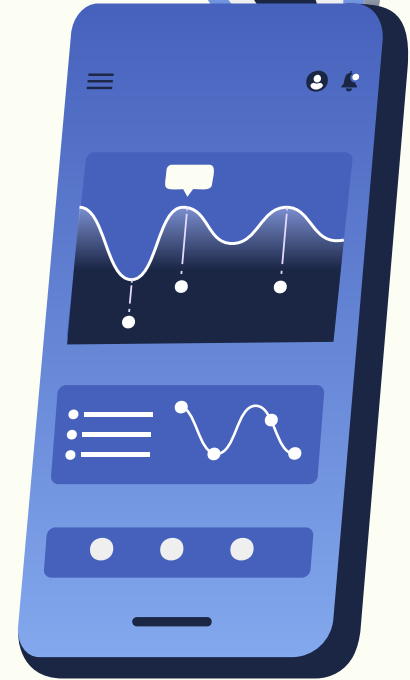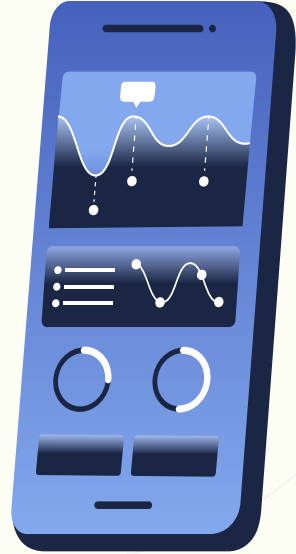# Group 13
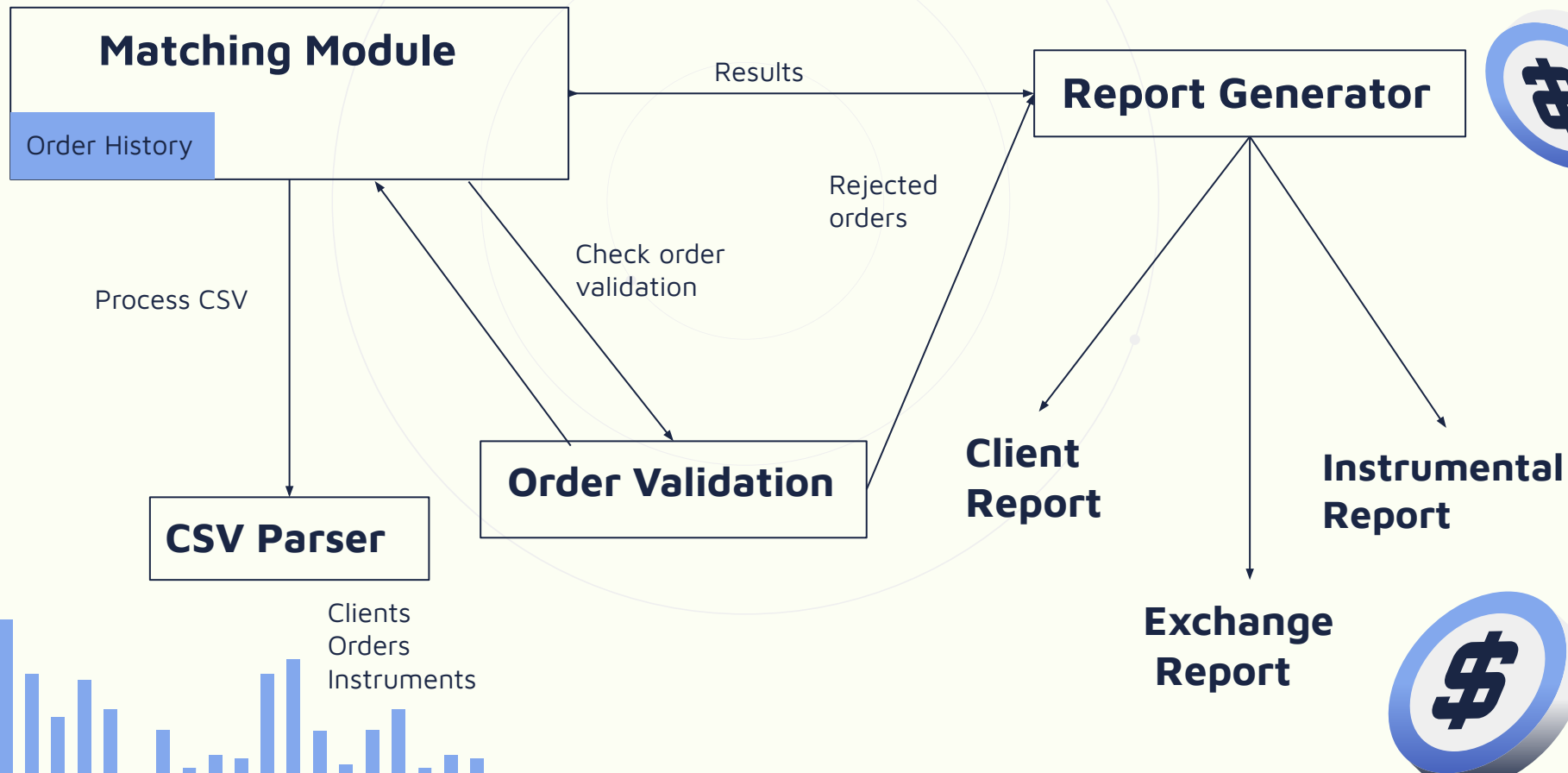
Name:
Ethan Wei
Peh Tsu Wen
Anant Shanker

Overview

- Language:**Python**

- **Matching Engine retrieves** the **orders** via **CSV Parser module** and processes the **order objects** and the orders goes through **Order Validation** where non-rejected orders will be matched while rejected ones are kept in a **separate dictionary** for **report generator** later.

- Matching module (matching engine) matches the valid order during open, continuous and closed auction through algorithms

- Final results generated from matching engine is used to produce reports through functions called in **ReportGenerator module**

Our Design & Architecture

Matching Module

Order History

Results → **Report Generator**

Rejected orders

Check order validation

Process CSV

Order Validation

CSV Parser

Clients
Orders
Instruments

Client Report

Exchange Report

Instrumental Report

Generated Reports

Exchange Report

```
You, 49 seconds ago | 1 author (You)
OrderID,RejectionReason
ORDER_10,REJECTED - MISMATCH CURRENCY
ORDER_20,REJECTED - MISMATCH CURRENCY
ORDER_30,REJECTED - MISMATCH CURRENCY
ORDER_40,REJECTED - MISMATCH CURRENCY
ORDER_50,REJECTED - MISMATCH CURRENCY
ORDER_60,REJECTED - MISMATCH CURRENCY
ORDER_70,REJECTED - MISMATCH CURRENCY
ORDER_80,REJECTED - MISMATCH CURRENCY
ORDER_90,REJECTED - MISMATCH CURRENCY
ORDER_100,REJECTED - MISMATCH CURRENCY
ORDER_1875,REJECTED - MISMATCH CURRENCY
ORDER_2875,REJECTED - MISMATCH CURRENCY
ORDER_3875,REJECTED - MISMATCH CURRENCY
ORDER_4875,REJECTED - MISMATCH CURRENCY
ORDER_5875,REJECTED - MISMATCH CURRENCY
ORDER_6875,REJECTED - MISMATCH CURRENCY
ORDER_7875,REJECTED - MISMATCH CURRENCY
ORDER_8875,REJECTED - MISMATCH CURRENCY
ORDER_9875,REJECTED - MISMATCH CURRENCY
ORDER_10875,REJECTED - MISMATCH CURRENCY
ORDER_1450,REJECTED - INVALID LOT SIZE
ORDER_2450,REJECTED - INVALID LOT SIZE
ORDER_3450,REJECTED - INVALID LOT SIZE
ORDER_4450,REJECTED - INVALID LOT SIZE
ORDER_5450,REJECTED - INVALID LOT SIZE
ORDER_6450,REJECTED - INVALID LOT SIZE
ORDER_7450,REJECTED - INVALID LOT SIZE
ORDER_8450,REJECTED - INVALID LOT SIZE
ORDER_9450,REJECTED - INVALID LOT SIZE
ORDER_10450,REJECTED - INVALID LOT SIZE
ORDER_125,REJECTED - INVALID LOT SIZE
ORDER_1455,REJECTED - MISMATCH CURRENCY
ORDER_225,REJECTED - INVALID LOT SIZE          You, 53 seconds a
ORDER_2455,REJECTED - MISMATCH CURRENCY
ORDER_325,REJECTED - INVALID LOT SIZE
```
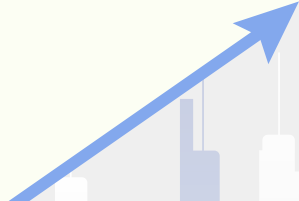
Challenges Faced + What we did

- Deciding on **object oriented programming** for clients, orders and instruments

- Ensuring that validity was checked **live (order executed by order executed)** rather than checking the entire CSV in one go.

- We also wrote **test scripts** to test our CSVParser

Challenge:

- Understanding order execution and when to use time or priority for open and continuous trading

Takeaway & Conclusion

- How trades are matched in real world market
- (Attempting to) Build a matching engine that helps to match all the valid orders.
- Built an order validation component that checks and rejects non valid orders based on **3 static and 1 live** criteria
- Our team understood each others strengths in delegating tasks
- Our team also utilised checklists to ensure our we were not missing any key components, tasks and submission files.

In conclusion, we have learnt plenty today and our solution is currently only capable of validating orders against the 3 static criteria and generating the report with those criteria.

Thank you!