Scope of Works

TCD – FIX Trading System



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# OBJECTIVES

The aim of this document is to provide an outline of the requirements and the project deliverables for a basic FIX Trading System.

We suggest that at least one component should be developed in C++.

# TIMELINES

Graphical user interface, table

Description automatically generated

# HIGH LEVEL SCOPE OF WORK

The goal is to develop an end-to-end trading system.   
It will handle basic order flows as referenced in the FIX protocol specification for Single General Order Handling.

It will have the following components -

1. A FIX client
2. A FIX server
3. A matching engine.

**Phase One**

A FIX client will place an order with the server based on market data consumed from a free feed (Yahoo, Google or similar), or from a command line/GUI entered by the user. The server will partial fill the order in random quantities until it reaches <=5% (return fill messages with random quantity at same price or better). Once the remaining quantity is less than the threshold, the server will return a quantity equal to the remaining, thus filling the entire order.

**For all messages in the order flow the client and server should observe all mandatory fields as specified in the FIX protocol specification.**

# Future Enhancements

1. Both the client and the server will consume market data.
2. The server will handle session authentication based on the FIX protocol specification.
3. The FIX client will have a GUI that allows you to login/logout and place orders.
4. The FIX server will have a GUI that displays orders and fills.
5. The server will use a mat**ching engine to match orders across clients – i.e. client 1 is looking for 100 Google shares. Client 2 is selling 100 Google shares. The server uses that matching engine to complete that order.**

Graphical user interface, text, application, email

Description automatically generated

# DETAILED DELIVERABLES

The project will be split into 4 phases with deliverables as detailed below

## Phase 1:

Basic Order Flow for the client/server for a simple order.  
CLI for client and server to allow sending orders (client) and querying order stats (server).

## Phase 2:

Session Authentication

GUI for Client/Server

## Phase 3:

Market Data consumption

Matching Engine

## Phase 4:

Complete system

# REFERENCES

FIX Protocol – latest

<https://www.fixtrading.org/online-specification/>

FIXimate – message and field navigator/explorer  
<https://fiximate.fixtrading.org/>

QuickFIX

<http://quickfixn.org/>