**Use Case Diagram**

System

User

Yahoo Finance

Open API

**User/System Interaction**

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| **Use Case No** | **User Action** | **Log** |
| 1 | User inputs the stock symbol, selects start date and end date then inputs epochs quantity, sequence length and batch size. After inputting the above parameters, user clicks ‘SEARCH’. | The system generates the appropriate stock prices(showing the dataset, actual market data and predicted EMA data), training loss over time and historical volatility of stock graphs/visualisations. The system also shows a short summary of the company as well as the real-time prices of the stock symbol. |
| 2 | User inputs a question in the ChatGPT powered chat box. | The system(Generative AI) creates a response based on the given prompt. |
| 3 | User clicks on ‘Download Graph’. | The system starts to download immediately and saves a picture of the graph (based on the given parameters by user) for user view later. |

* 1. **System Response/Back-end of the system**

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| * 1. **Use case No** | * 1. **System Action** | * 1. **Log** |
| * 1. 1 | * 1. System trains Long short-term memory neural network. | System runs the neural network on the training data. |
| * 1. 2 | * 1. System trains Long short-term memory neural network. | * 1. LSTM network takes the input parameters into account and generates output based on them. |
| * 1. 3 | * 1. System uses Yahoo API for real-time prices | * 1. System extracts real-time information from Yahoo API |