**Risk Assessment**

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| **Risk** | **Category (Boehm’s)** | **Reason** | **Mitigation Strategy** |
| Lack of skilled developers | Personnel Shortfalls | Team members have limited experience with trading platforms and APIs. | Provide internal training, assign mentors, and promote documentation and collaboration. |
| Unrealistic project timeline (3 months) | Unrealistic Schedules and Budgets | Project was completed in half the estimated time based on COCOMO model. | Prioritize essential features, adopt incremental delivery, and communicate realistic progress. |
| Integration issues with live market APIs | Shortfalls in Externally Furnished Components | External APIs may not function as expected or have rate limits. | Test APIs early, use mock data for fallback, and maintain backup API sources. |
| Inaccurate or delayed price updates | Developing Wrong Functions and Properties | Live data updates may not sync correctly with backend or API delays. | Implement data validation, use efficient update logic, and test real-time flows frequently. |
| Server downtime during high traffic | Real-time Performance Shortfalls | Heavy load during live trading sessions may cause server crashes. | Conduct load testing, optimize server configurations, and use scalable deployment options. |
| Limited testing due to short timeline | Continuing Stream of Requirements Changes | Compressed schedule restricted proper testing cycles and validation. | Allocate specific testing sprints, automate basic test cases, and maintain test reports. |
| Unstable third-party APIs | Shortfalls in Externally Furnished Components | Dependence on third-party APIs that may fail or change unexpectedly. | Evaluate reliability of APIs, add fallback APIs, and monitor API performance continuously. |
| Incomplete implementation of trading features | Developing Wrong Functions and Properties | Time shortage led to partial or skipped implementation of some functions. | Define MVP features early, assign clear responsibilities, and review progress regularly. |
| Real-time performance issues | Real-time Performance Shortfalls | Frequent API calls or inefficient rendering may slow down live charts and dashboards. | Optimize backend queries, use caching, and test with realistic data loads. |
| Using unfamiliar new technologies | Straining Computer-Science Capabilities | Team explored new frameworks without prior experience leading to integration issues. | Conduct feasibility studies, start with small prototypes, and adopt stable technologies incrementally. |

# Risk Score Calculations:

**Team Member 1 :** Anosha Hafeez (014)

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| **Risk** | **Category (Boehm’s)** | **Likelihood (1-10)** | **Impact (1-10)** | **Risk Score** |
| Lack of skilled developers | Personnel Shortfalls | 6 | 6 | 36 |
| Unrealistic project timeline (3 months) | Unrealistic Schedules and Budgets | 9 | 8 | 72 |
| Integration issues with live market APIs | Shortfalls in Externally Furnished Components | 7 | 8 | 56 |
| Inaccurate or delayed price updates | Developing Wrong Functions and Properties | 6 | 7 | 42 |
| Server downtime during high traffic | Real-time Performance Shortfalls | 7 | 9 | 63 |
| Limited testing due to short timeline | Continuing Stream of Requirements Changes | 5 | 5 | 25 |
| Unstable third-party APIs | Shortfalls in Externally Furnished Components | 7 | 8 | 56 |
| Incomplete implementation of trading features | Developing Wrong Functions and Properties | 4 | 3 | 12 |
| Real-time performance issues | Real-time Performance Shortfalls | 8 | 9 | 72 |
| Using unfamiliar new technologies | Straining Computer-Science Capabilities | 7 | 9 | 81 |