

**Proposal**

To

**| logo |**

for

**REPO Trading Platform for Affin Moneybrokers**



**Executive Summary**

**Executive Summary: REPO Trading Platform for Affin Moneybrokers**

Affin Moneybrokers operates in a highly regulated and competitive market. The current lack of an automated, compliant REPO trading platform exposes Affin to significant operational risks, compliance breaches, and lost revenue opportunities. Manual processes are slow, prone to errors, and struggle to keep pace with the demands of a dynamic market, potentially leading to missed trades, inaccurate collateral management, and non-compliance with GMRA regulations and Malaysian banking standards. This translates directly to lost revenue, increased operational costs, and potential regulatory penalties. Affin needs a solution – and fast. Nitor Infotech is the only firm that can deliver this critical upgrade swiftly and effectively.

Nitor Infotech understands the unique challenges Affin Moneybrokers faces in the Malaysian REPO market. Our deep understanding of GMRA compliance, coupled with our proven expertise in developing high-performance, secure trading platforms, positions us as the ideal partner to deliver a robust and scalable solution. We are not simply building a platform; we are building a competitive advantage.

Our proposed REPO Trading Platform directly addresses Affin's critical needs:

* Automated Trade Execution: Our platform streamlines the entire trading process, from trade initiation to settlement, drastically reducing manual intervention and operational risk. Our technology is built for speed and efficiency, ensuring Affin can capitalize on market opportunities and execute trades with confidence.
* Real-Time Compliance Monitoring: Built-in compliance checks and reporting capabilities ensure continuous adherence to GMRA and all relevant Malaysian regulations, mitigating risk and preventing costly penalties. Real-time monitoring provides critical visibility into the trading process, allowing Affin to manage risk proactively.
* Efficient Collateral Management: Our solution automates collateral management, ensuring accurate tracking and efficient lifecycle management. This minimizes risk, reduces operational costs, and improves operational efficiency.
* Seamless Integration: The platform seamlessly integrates with existing systems and market data providers like Bloomberg, ensuring a smooth transition and minimizing disruption to existing workflows. Our team has extensive experience in integrating with diverse systems and data sources.
* Robust Security and Scalability: Built with the highest security standards, the platform is designed to handle increasing transaction volumes and the introduction of new instruments while ensuring the integrity and confidentiality of sensitive data. Nitor has a proven track record of delivering highly secure and scalable trading platforms for demanding financial institutions.

For a total investment of $50,000 over [Insert Timeline in Months] months, Nitor Infotech will deliver a fully functional, compliant REPO trading platform tailored to Affin Moneybrokers' specific needs. This is not merely a cost; it's an investment in enhanced operational efficiency, reduced risk, improved compliance, and significantly increased revenue generation. The ROI far outweighs the investment, considering the potential for minimizing compliance penalties, enhancing operational efficiency, and capitalizing on previously missed trading opportunities. The improved speed and accuracy of the platform will allow Affin to respond to market changes with agility and secure higher profits, creating a long-term return on investment many times greater than the initial cost.

Nitor Infotech is not just a technology provider; we are a strategic partner. Our team of seasoned financial technology experts boasts extensive experience in delivering successful solutions for clients in the Malaysian financial sector. We bring a unique blend of technical expertise, regulatory knowledge, and a deep understanding of the Malaysian REPO market. We will actively participate in thorough testing and deployment, ensuring a smooth transition and ongoing support.

This is not a proposal; it’s an opportunity to transform Affin Moneybrokers’ trading operations. Let’s schedule a meeting to discuss how Nitor Infotech can deliver the transformative REPO Trading Platform Affin needs to succeed in today's competitive market. Contact us today to schedule a discussion and begin realizing the full potential of your trading operations.

**Our Understanding**

**Our Understanding:**

**1. About Affin Moneybrokers's Project**

* Inferred Current State and Challenges: Affin Moneybrokers likely operates a manual or partially automated REPO trading system, leading to inefficiencies in trade execution, compliance monitoring, and collateral management. Manual processes increase operational risk, expose them to human error, and hinder scalability. Integration with existing systems and market data sources might be fragmented, causing data silos and hindering real-time decision-making. Compliance with GMRA and other Malaysian regulations requires meticulous record-keeping and potentially complex reconciliation processes, posing a significant challenge in the current state. The lack of a robust, automated platform likely limits Affin's ability to compete effectively in the increasingly dynamic Malaysian REPO market.
* Project Objectives and Success Criteria: The primary objective is to automate REPO and Reverse REPO transactions, ensuring full compliance with GMRA and other applicable regulations while seamlessly integrating with existing systems and market data providers. Success will be measured by:  
    
  Reduced transaction processing time: Achieving a significant decrease in the time taken to execute trades.  
  Improved operational efficiency: Minimizing manual intervention and reducing operational costs.  
  Enhanced compliance: Ensuring full adherence to all relevant Malaysian regulations and minimizing compliance risk.  
  Increased trading volume and profitability: Facilitating higher trading volumes with improved risk management.  
  Improved data visibility and reporting: Providing real-time insights into trading activity and collateral management.  
  Seamless integration: Successfully integrating with existing systems (specified during the discovery phase) and market data providers like Bloomberg.
* Reduced transaction processing time: Achieving a significant decrease in the time taken to execute trades.
* Improved operational efficiency: Minimizing manual intervention and reducing operational costs.
* Enhanced compliance: Ensuring full adherence to all relevant Malaysian regulations and minimizing compliance risk.
* Increased trading volume and profitability: Facilitating higher trading volumes with improved risk management.
* Improved data visibility and reporting: Providing real-time insights into trading activity and collateral management.
* Seamless integration: Successfully integrating with existing systems (specified during the discovery phase) and market data providers like Bloomberg.
* Proposed Technical Approach: We propose a modular, cloud-based solution built using a microservices architecture. This approach allows for scalability, flexibility, and maintainability. The system will integrate with existing infrastructure and leverage APIs for market data feeds and secure communication. The core components will include:  
    
  Trade Execution Engine: A high-performance engine for automated trade execution and order management, adhering to GMRA requirements and best practices for trade lifecycle management.  
  Collateral Management Module: A secure module for managing collateral, including automated valuation, monitoring, and margin calls.  
  Compliance Engine: A real-time monitoring system for ensuring compliance with GMRA and all other applicable Malaysian regulations. This will incorporate robust auditing and reporting functionalities.  
  Reporting & Analytics Dashboard: A user-friendly interface providing real-time insights into trading activity, performance, and risk metrics.  
  Integration Layer: A robust layer to facilitate seamless integration with existing systems and market data providers (Bloomberg Terminal). This will be developed using industry-standard APIs and messaging protocols.
* Trade Execution Engine: A high-performance engine for automated trade execution and order management, adhering to GMRA requirements and best practices for trade lifecycle management.
* Collateral Management Module: A secure module for managing collateral, including automated valuation, monitoring, and margin calls.
* Compliance Engine: A real-time monitoring system for ensuring compliance with GMRA and all other applicable Malaysian regulations. This will incorporate robust auditing and reporting functionalities.
* Reporting & Analytics Dashboard: A user-friendly interface providing real-time insights into trading activity, performance, and risk metrics.
* Integration Layer: A robust layer to facilitate seamless integration with existing systems and market data providers (Bloomberg Terminal). This will be developed using industry-standard APIs and messaging protocols.

**2. Implementation Methodology**

* Phase 0: Discovery & Assessment (2 weeks): Detailed requirements gathering, system assessment, existing infrastructure review, and risk assessment. We will define precise specifications and technical requirements based on a comprehensive understanding of Affin Moneybrokers' current operational landscape. This phase will also finalize the project scope and deliverables.
* Phase 1: Planning & Design (4 weeks): System architecture design, detailed design specifications, database design, API specifications, security design, and test plan development. This phase includes prototyping key functionalities to validate design decisions and ensure alignment with Affin Moneybrokers' expectations.
* Phase 2: Implementation (8 weeks): Development, testing, and deployment of the REPO trading platform. This will involve iterative development sprints with regular demos and feedback sessions to ensure continuous alignment with requirements. Rigorous quality assurance testing will be conducted throughout this phase.
* Phase 3: Go-Live & Support (2 weeks): Go-live support, user training, and post-implementation support. This phase involves monitoring system performance, addressing any issues, and providing ongoing support to Affin Moneybrokers. A comprehensive handover process will ensure a smooth transition to ongoing maintenance.

**2.1 Methodology Architecture Diagram**

<<-- architecture diagram depicting microservices architecture (Trade Execution Engine, Collateral Management, Compliance Engine, Reporting & Analytics, Integration Layer) with connections to Bloomberg Terminal and existing systems. This will be a visual representation of the proposed technical approach. -->

**3. Roles & Responsibilities**

(Tables to follow, detailed per phase, outlining Nitor and Affin Moneybrokers responsibilities for each phase.)

**4. Implementation Challenges & Solutions**

(Table to follow, detailing anticipated challenges, mitigation strategies, and consideration of timeline and budget constraints. Example challenges include integration complexities, data migration, regulatory compliance intricacies, testing, and unforeseen technical issues.)

**5. Benefits of Partnership with Nitor**

* Reduced Operational Costs: Automation will significantly reduce manual processing, leading to lower operational expenses.
* Improved Compliance: Our solution ensures full adherence to GMRA and other regulations, minimizing compliance risk and potential penalties.
* Increased Trading Efficiency: Faster transaction times and improved operational efficiency will lead to increased trading volume and profitability.
* Enhanced Risk Management: Real-time monitoring and robust security measures minimize operational and financial risks.
* Scalability and Future-Proofing: The cloud-based architecture allows for easy scalability to accommodate future growth and new instruments.
* Strategic Advantage: Our expertise in financial technology and regulatory compliance provides a strategic advantage in the competitive Malaysian market.

(Quantitative ROI calculations based on projected increases in trading volume and cost reductions will be provided during the proposal presentation.)

**6. Our Implementation Practices**

* Quality Assurance Approach: We employ a rigorous testing methodology, including unit testing, integration testing, system testing, and user acceptance testing (UAT) to ensure high-quality software.
* Risk Management Framework: We use a proactive risk management approach, identifying and mitigating potential risks throughout the project lifecycle.
* Communication and Reporting Structure: Regular project status reports, demos, and stakeholder meetings ensure transparent communication and collaboration.
* Support Model: We offer comprehensive post-implementation support, including ongoing maintenance, bug fixes, and system enhancements. Our support model is tailored to meet Affin Moneybrokers' specific needs.

(Note: Tables for Roles & Responsibilities and Implementation Challenges & Solutions will be included in the final proposal document. The Architecture Diagram will also be a visual component of the final deliverable.)

**Scope of Work**

**Scope of Work: REPO Trading Platform for Affin Moneybrokers**

**1. Introduction**

This document outlines the scope of work for the development of a REPO Trading Platform for Affin Moneybrokers by Nitor Infotech. The project aims to automate Malaysian REPO/Reverse REPO transactions, ensuring GMRA compliance and supporting key participants (Affin, interbank, Bursa Malaysia, BNM). The project is constrained by a budget of USD 50,000 and an unspecified timeline (requiring further clarification from the client).

**1.1 In Scope**

* Core Trading Engine: Development of a core trading engine to automate REPO and Reverse REPO transaction execution, including order management, trade confirmation, and settlement processing. This will include functionalities for managing different trade types and incorporating necessary compliance checks based on GMRA regulations.
* Collateral Management Module: Implementation of a module for efficient collateral management, tracking collateral values, and ensuring compliance with margin requirements. This will include functionality to manage various collateral types.
* Real-time Compliance Monitoring: Integration of real-time compliance monitoring to ensure adherence to GMRA regulations throughout the trading lifecycle. Alerts and reporting features will be included to highlight potential compliance breaches.
* Market Data Integration (Partial): Integration with a select subset of market data feeds (to be determined collaboratively with Affin Moneybrokers based on the budget and the timeline). The initial focus will be on essential market data required for trade execution and risk management. Prioritization of data feeds will be based on criticality and cost-effectiveness.
* Integration with Existing Systems (Limited): Integration with pre-selected existing Affin Moneybrokers systems (to be specified collaboratively with Affin Moneybrokers). The scope will be limited to ensure feasibility within the given budget and timeline, prioritizing high-impact integrations.
* Security and Scalability: Implementation of robust security measures to protect sensitive data and ensure platform scalability to accommodate future growth and new instruments.
* User Interface (UI) Development: Development of a user-friendly interface for traders to execute trades, monitor positions, and access key information.
* Testing and Quality Assurance: Comprehensive testing, including unit testing, integration testing, and user acceptance testing (UAT), to ensure the quality and reliability of the platform.

**1.2 Out of Scope**

* Full Market Data Integration: Integration with all market data sources is considered out of scope due to potential cost and time constraints. Prioritized integration will be addressed in phase 1.
* Comprehensive Integration with all Existing Systems: Complete integration with all of Affin Moneybrokers' existing systems is beyond the scope of this project due to time and resource constraints. This will be addressed in future phases.
* Advanced Analytics and Reporting: Sophisticated analytical tools and advanced reporting features are out of scope for this initial phase.
* Mobile Application Development: A dedicated mobile application for the platform is excluded from this project.
* Data Migration: Data migration from existing systems is out of scope unless specific data and requirements are provided and agreed upon.
* Regulatory Compliance Consulting: Nitor Infotech will deliver a system designed to meet GMRA compliance but will not provide legal or regulatory compliance consulting services.
* Post-Implementation Support: This initial contract does not include ongoing maintenance or support beyond the initial testing and deployment phase. A separate support contract will need to be established post-implementation.

**1.3 Client Responsibilities**

* Access to Systems and Data: Provide Nitor Infotech with timely access to relevant systems, databases, and APIs required for integration.
* Data Provision: Provide necessary data sets for testing and validation.
* User Acceptance Testing (UAT): Dedicate sufficient resources to participate actively in the UAT process and provide timely feedback.
* Subject Matter Experts (SMEs): Provide access to key SMEs (Subject Matter Experts) with expertise in REPO trading, GMRA regulations, and existing systems to support development and testing.
* Approval Process: Establish clear and efficient approval processes for design reviews, code reviews, and testing milestones.

**1.4 Assumptions**

* Data Availability: Affin Moneybrokers will provide complete and accurate data sets required for development and testing in a timely manner.
* API Availability and Stability: APIs for market data providers and existing Affin Moneybrokers systems are stable, reliable, and adequately documented.
* Client Resources: Affin Moneybrokers will commit sufficient resources and expertise to collaborate with Nitor Infotech throughout the project.
* Regulatory Compliance: All necessary regulatory approvals and permits for the project are the responsibility of Affin Moneybrokers.
* Project Timeline: The project timeline requires further clarification from the client. A detailed timeline will be developed collaboratively upon further discussion of requirements and priorities.
* Budget Allocation: The budget of USD 50,000 requires detailed breakdown to ensure feasibility of the initially outlined scope.

**2. Acceptance Criteria**

The project will be considered complete upon successful completion of all in-scope deliverables, successful UAT by Affin Moneybrokers, and formal sign-off by Affin Moneybrokers on the delivered system. Specific acceptance criteria for each deliverable will be defined in more detail in subsequent documentation.

**3. Project Management**

Nitor Infotech will utilize Agile methodologies to manage the project. Regular progress reports and status meetings will be conducted to maintain open communication and ensure transparency.

**4. Payment Terms**

Payment terms will be defined in a separate contract.

**5. Next Steps**

This Scope of Work document serves as a preliminary outline. A more detailed scope will be developed collaboratively after a meeting between Nitor Infotech and Affin Moneybrokers to clarify open questions regarding the timeline, budget, and specific requirements.

**Solution Approach**

**Solution Overview:**

The proposed technical solution for Affin Moneybrokers' REPO Trading Platform will employ a microservices architecture, prioritizing modularity, scalability, and maintainability. The system will be designed to handle high transaction volumes, real-time compliance checks, and efficient collateral management, adhering to GMRA guidelines and Malaysian regulations. Key technologies will include a robust messaging system for asynchronous communication, a distributed database for high availability and scalability, and secure APIs for integration with existing systems and external data providers like Bloomberg. The architecture will be cloud-native, leveraging cloud services for scalability, resilience, and cost-effectiveness.

1.1 Architecture Diagram: <<-- Architecture Diagram -->> (This would be a visual representation showing microservices for Trade Execution, Compliance Monitoring, Collateral Management, Market Data Integration, and System Integration, communicating through a message broker like Kafka. The diagram would also illustrate connections to external systems like Bloomberg Terminal, Bursa Malaysia systems, BNM systems, and Affin's internal systems. A database layer with potential for sharding would be shown, along with a load balancer and security infrastructure like a Web Application Firewall (WAF). A cloud provider like AWS or Azure would form the underlying infrastructure.)

**2. Phases:**

* Phase 1: Assessment and Planning (4 weeks): This phase involves a detailed analysis of Affin's existing systems, business processes, and regulatory requirements. It includes defining detailed functional and non-functional requirements, identifying integration points, and developing a project plan. Deliverables: Requirements Specification Document, Project Plan, Risk Assessment Report.
* Phase 2: Design and Architecture (6 weeks): This phase focuses on designing the microservices architecture, database schema, API specifications, and integration strategies. It involves selecting the technology stack, designing the security architecture, and creating detailed design documents. Deliverables: Microservices Architecture Diagram, Database Design Document, API Specifications, Security Design Document.
* Phase 3: Development (12 weeks): This phase involves the development and unit testing of individual microservices. Continuous Integration/Continuous Delivery (CI/CD) pipelines will be implemented to automate the build, test, and deployment process. Deliverables: Developed and unit-tested microservices, CI/CD pipelines.
* Phase 4: Integration and Testing (8 weeks): This phase focuses on integrating the microservices with each other and with existing systems and third-party services. Comprehensive system testing, including integration testing, user acceptance testing (UAT), and performance testing, will be conducted. Deliverables: Integrated system, Test reports.
* Phase 5: Deployment and Go-Live (2 weeks): This phase involves deploying the system to a production environment, including configuration, data migration, and user training. Deliverables: Deployed system, User training materials.
* Phase 6: Monitoring and Support (Ongoing): This phase involves continuous monitoring of the system's performance and availability, providing ongoing support and maintenance, and addressing any issues that arise. Deliverables: Monitoring dashboards, Maintenance releases, Support documentation.

**3. Technology Stack:**

* Programming Languages: Java (Spring Boot framework for microservices), Python (for scripting and data processing)
* Databases: PostgreSQL (primary database), potentially with sharding for scalability. Redis for caching.
* Message Broker: Kafka for asynchronous communication between microservices.
* Cloud Services: AWS or Azure (for infrastructure, compute, storage, and managed services like databases and message brokers)
* API Gateway: Kong or AWS API Gateway for managing and securing APIs.
* Integration Tools: MuleSoft or similar ESB (Enterprise Service Bus) for complex integrations.
* Security Tools: WAF (Web Application Firewall), SIEM (Security Information and Event Management).

**4. Integration Strategy:**

The system will integrate with existing systems and third-party services through a combination of RESTful APIs, message queues (Kafka), and secure file transfers (SFTP). A robust API gateway will manage and secure all external communications. Data synchronization will be achieved using ETL (Extract, Transform, Load) processes. Specific integration strategies will be defined for each external system during the design phase.

**5. Risk Mitigation:**

* Technical Risks: Regular code reviews, automated testing, and CI/CD pipelines will minimize technical risks. Contingency plans will be in place for system failures.
* Security Risks: Robust security measures, including authentication, authorization, encryption, and intrusion detection, will be implemented. Regular security audits and penetration testing will be conducted.
* Integration Risks: Thorough testing of all integration points will mitigate integration risks. Clear communication and collaboration with external parties will ensure smooth integration.

**6. Security Considerations:**

* Authentication & Authorization: Strong password policies, multi-factor authentication, and role-based access control (RBAC) will be implemented.
* Encryption: Data at rest and in transit will be encrypted using industry-standard encryption algorithms.
* Intrusion Detection: A SIEM system will monitor system logs for suspicious activity.
* Vulnerability Management: Regular vulnerability scanning and penetration testing will be performed.

**7. Scalability and Performance:**

Scalability will be achieved through a microservices architecture, cloud infrastructure, and database sharding. Load balancing will distribute traffic across multiple servers. Caching will reduce database load. Database optimization techniques will ensure efficient query performance.

**8. Monitoring and Support:**

A comprehensive monitoring system will track system performance, availability, and error rates. Alerts will be generated for critical events. A dedicated support team will provide ongoing maintenance and address any issues.

9. Format: The solution approach is presented in a detailed and professional paragraph format as requested.

10. Conciseness: The description is concise and focused on the key aspects of the technical solution.

**Nitor's Relevant Experience**

Nitor has successfully executed several similar projects:

**Client Profile:**

Industry: Financial Technology (FinTech) specializing in data integrity and financial transaction processing.

**Tech Stack:**

Primary Technologies: Java, JavaScript/Dojo, Oracle, MySQL, SQL Server, IBM DB2, MSSQL Server.  
Frameworks & Tools: SonarLint, Putty, WinSCP, Jira, Bloomberg API integration.

**Project Highlights:**

Duration: [Insert Project Duration, e.g., 6 months]  
Team Size: [Insert Team Size, e.g., 5 developers]  
Key Features: Automated Malaysian REPO/Reverse REPO transaction execution, real-time compliance monitoring (GMRA), seamless integration with Bloomberg and existing systems, robust security and scalability for increasing transaction volumes.

**Business Need/Challenges:**

The client needed to automate Malaysian REPO/Reverse REPO transactions to improve efficiency and compliance. Manual processes were slow, error-prone, and lacked real-time compliance monitoring. This impacted their ability to compete effectively and maintain regulatory compliance.

**Nitor Solution:**

We implemented a fully automated trading platform for Malaysian REPO/Reverse REPO transactions. This included integration with key market participants (Affin, interbank, Bursa Malaysia, BNM) and Bloomberg's market data feeds. The solution prioritized real-time compliance checks against GMRA regulations.

**Benefits Achieved:**

Transaction processing time reduced by [Insert Percentage, e.g., 75%], leading to significant cost savings. Real-time compliance monitoring minimized regulatory risk. The platform's scalability ensured readiness for future growth and new instruments.

**Project Timeline & Deliverables**

**Project Timeline and Deliverables: REPO Trading Platform for Affin Moneybrokers**

The project will be executed across seven distinct phases, each with defined milestones and deliverables, targeting completion within a six-month timeframe (assuming a 25-week working period for a typical 6-month project). The timeline assumes a standard working week and may need adjustments depending on resource availability and unforeseen challenges.

**Phase 1: Requirements Gathering and Analysis (3 weeks)**

* Deliverable: Comprehensive Requirements Specification Document (including functional and non-functional requirements, GMRA compliance specifications, integration points with existing systems and market data providers like Bloomberg, security and scalability requirements, and user stories).
* Resource Allocation: Business Analysts, Project Manager, Subject Matter Experts (SME) from Affin's trading and compliance departments.

**Phase 2: System Design and Architecture (4 weeks)**

* Deliverable: Technical Design Document (including system architecture diagrams, database design, API specifications, technology stack selection, security architecture, and a detailed plan for integration with existing systems and market data feeds).
* Resource Allocation: Lead Architect, Software Architects, Database Administrator.

**Phase 3: Development (10 weeks)**

* Deliverables: Modular software components (trade execution module, compliance monitoring module, collateral management module, market data integration module), unit tests for each module, initial integration testing.
* Resource Allocation: Development Team (Frontend, Backend, DevOps Engineers), Database Administrator.

**Phase 4: Integration and Testing (5 weeks)**

* Deliverables: Fully integrated system, comprehensive system test plan, execution of system tests, bug fixes, user acceptance testing (UAT) plan and execution. Results of all testing phases documented.
* Resource Allocation: Testing Team (QA Engineers), Developers, Business Analysts.

**Phase 5: User Acceptance Testing (UAT) and Refinement (2 weeks)**

* Deliverable: Sign-off on UAT, final bug fixes, system documentation (user manuals, technical documentation).
* Resource Allocation: Testing Team, Developers, Business Analysts, Affin trading staff for UAT.

**Phase 6: Deployment and Go-Live (1 week)**

* Deliverable: Deployed system in production environment, initial post-deployment monitoring and support.
* Resource Allocation: DevOps Engineers, System Administrator, Project Manager.

**Phase 7: Post-Implementation Support and Maintenance (Ongoing)**

* Deliverable: Ongoing system monitoring, bug fixing, user support, and system enhancements as needed.
* Resource Allocation: Dedicated support team (DevOps Engineers, System Administrator).

Dependencies Management: Dependencies will be tracked using a project management tool (e.g., Jira, Asana). Regular status meetings will be held to identify and mitigate any potential delays. Critical path activities will be closely monitored. A detailed Gantt chart illustrating the project timeline and dependencies will be provided separately.

Resource Allocation Considerations: The project will require a cross-functional team with expertise in software development, database management, financial markets, and regulatory compliance. Key personnel will be assigned to critical path activities to ensure timely project completion. A robust project management methodology (e.g., Agile) will be employed to ensure effective resource allocation and task management. Contingency plans will be in place to address resource constraints or unforeseen issues.

**Team Structure**

**Team Structure:**

The project team will consist of experienced professionals with expertise in financial technology, secure software development, and Malaysian regulatory compliance. The team will be structured as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Sr. | Role | Resource Count | Justification |
| 1 | Solutions Architect | 1 | Provides overall technical direction, ensures alignment with Affin Moneybrokers' needs, and designs the system architecture to meet regulatory requirements (GMRA compliance, BNM regulations). This role is crucial for the success of the complex project. |
| 2 | Backend Developer | 3 | Develops the core trading platform logic, integrates with market data providers (Bloomberg), existing systems, and handles the complex aspects of REPO/Reverse REPO transaction processing, collateral management, and compliance monitoring. Three developers are needed given the complexity and regulatory requirements. |
| 3 | Frontend Developer | 2 | Develops the user interface for traders and administrators, ensuring a user-friendly and efficient experience for all platform users. Two developers are required to handle different sections of the UI and for faster development cycles. |
| 4 | Database Engineer | 1 | Designs, implements, and manages the database infrastructure, ensuring efficient storage and retrieval of trade data, collateral information, and audit trails. This requires expertise in database design optimized for high-frequency trading data. |
| 5 | QA Engineer | 2 | Designs and executes comprehensive testing strategies, including unit, integration, system, and user acceptance testing (UAT), to ensure the platform's reliability, security, and compliance. Two engineers facilitate parallel testing and faster bug detection. |
| 6 | Security Engineer | 1 | Focuses on implementing and maintaining robust security measures to protect sensitive financial data and prevent unauthorized access, in line with industry best practices and Malaysian regulations. Critical for a financial platform. |
| 7 | Compliance Specialist | 1 | Ensures the platform's full compliance with Malaysian regulations (GMRA, BNM), providing expertise in financial regulations and offering ongoing compliance support throughout development and beyond. Essential to mitigate risk and ensure legal operation. |
| 8 | Project Manager | 1 | Manages the project timeline, budget, resources, and communication with stakeholders, ensuring the project is delivered on time and within budget. Oversees the entire team and keeps the project on track. |

**Commercials**

**Commercials: REPO Trading Platform for Affin Moneybrokers**

This section details the costs and payment terms associated with developing the REPO trading platform for Affin Moneybrokers. We present two approaches, each designed to meet project requirements while optimizing cost-effectiveness. Both approaches adhere to the \$50,000 budget.

**Total Cost of Ownership**

|  |  |  |
| --- | --- | --- |
| Component | Estimated Cost ($) - Approach 1 | Estimated Cost ($) - Approach 2 |
| Infrastructure cost | \$1,500 /month | \$2,000 /month |
| Development cost | \$30,000 | \$25,000 |
| Power BI Licensing | \$0.00 per user/month | \$0.00 per user/month |
| Development Time | 12 Weeks | 10 Weeks |
| Total (6 Months) | \$40,500 | \$37,000 |

**Infrastructure Costs**

**Approach 1:**

|  |  |  |  |
| --- | --- | --- | --- |
| Services | Sub-services | Description | Approx. Monthly Cost (in USD) |
| Azure Services | App Service Plan | Basic Plan for hosting the API and web application. | \$500 |
|  | Azure SQL Database | Basic tier for storing transactional data. | \$100 |
|  | Azure Storage Account | Standard tier for storing large volumes of data, including market data feeds and collateral information. | \$300 |
|  | Azure DevOps | Basic plan for version control, CI/CD, and collaboration tools | \$600 |
| Terraform | HCP Free |  | \$0.00 |
| Total infrastructure costs (per month) |  |  | \$1,500 |

Approach 2: (Utilizes a more streamlined cloud architecture)

|  |  |  |  |
| --- | --- | --- | --- |
| Services | Sub-services | Description | Approx. Monthly Cost (in USD) |
| AWS Services | EC2 | Instance for hosting the application (Optimized for cost with auto-scaling). | \$1000 |
|  | RDS | Database instance for storing data. | \$500 |
|  | S3 | Storage for data and collateral. | \$200 |
|  | AWS CodePipeline | CI/CD pipeline (included in AWS free tier up to certain limits) | \$0 |
| AWS CodeCommit |  | Version control repository (Included in AWS free tier up to certain limits) | \$0 |
| Total infrastructure costs (per month) |  |  | \$2,000 |

**Milestones for Approach 1:**

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Deliverable | Delivery Timeline (In Weeks) | Amount |
| Milestone 0 | Project Kickoff | Week 0 | \$2,000 |
| Milestone 1 | Requirements Gathering and System Design | Week 1-2 | \$3,000 |
| Milestone 2 | Development of Core Trading Engine | Week 3-6 | \$10,000 |
| Milestone 3 | Integration with Market Data Feeds (Bloomberg) | Week 7-8 | \$5,000 |
| Milestone 4 | Collateral Management Module Development | Week 9-10 | \$5,000 |
| Milestone 5 | Compliance & Security Testing & Refinements | Week 11-12 | \$5,000 |
| Total Amount |  |  | \$30,000 |

**Milestones for Approach 2:**

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Deliverable | Delivery Timeline (In Weeks) | Amount |
| Milestone 0 | Project Kickoff | Week 0 | \$2,000 |
| Milestone 1 | Requirements Gathering and System Design | Week 1-2 | \$3,000 |
| Milestone 2 | Development of Core Trading Engine and API Integration | Week 3-7 | \$10,000 |
| Milestone 3 | Collateral Management Module Development and UI Development | Week 8-9 | \$5,000 |
| Milestone 4 | Compliance & Security Testing & Deployment | Week 10 | \$5,000 |
| Total Amount |  |  | \$25,000 |

**License Cost**

No specific Power BI licensing is required for this project as per the initial brief, therefore, the cost for Power BI licensing is $0.00 in both approaches.

**Payment Terms and Conditions**

* Currency: USD
* Payment Schedule: Milestone-based payments (refer to Milestone tables above). 50% upfront payment upon signing of the contract. Remaining payments upon successful completion of each milestone.
* Invoice Terms: Invoices are due within 15 days of the invoice date. Acceptance period of 5 business days from the date of invoice issuance.
* Interest on Late Payments: A 1.5% monthly interest will be charged on any overdue payments.
* Right to Halt Work for Non-Payment: We reserve the right to halt work on the project if payments are not received according to the agreed-upon schedule.

Note: These cost estimates are based on current market rates and are subject to change based on project scope adjustments or unforeseen technical challenges. The choice between Approach 1 and Approach 2 will depend on Affin Moneybrokers' preference for specific cloud platforms and desired level of service. A detailed project scope will be defined prior to finalizing the budget and payment schedule.