**Executive Summary**

**Executive Summary: Revolutionizing Affin Moneybrokers' REPO Trading with Nitor Infotech**

Affin Moneybrokers operates in a dynamic and highly regulated Malaysian financial market. The current limitations in automating REPO/Reverse REPO transactions, coupled with the stringent compliance requirements of GMRA, Bursa Malaysia, and BNM, create significant operational inefficiencies and expose Affin to substantial financial and reputational risks. Without a modern, automated, and fully compliant trading platform, Affin is leaving significant revenue on the table and jeopardizing its competitive position. This proposal outlines how Nitor Infotech is uniquely positioned to solve these critical challenges.

**The Problem: A Stifling Lack of Automation and Compliance**

Affin Moneybrokers faces the urgent need to modernize its REPO trading operations. Manual processes are slow, error-prone, and struggle to keep pace with the increasing volume and complexity of transactions. Compliance with the intricacies of GMRA regulations, along with the demands of seamless integration with key participants like Bursa Malaysia and BNM, requires a sophisticated technology solution â€“ not a patchwork of existing systems. The lack of real-time compliance monitoring exposes Affin to significant penalties and operational disruption. In short, Affin needs a comprehensive, automated, and fully compliant REPO trading platform to thrive in today's competitive landscape.

**Nitor Infotech: The Only Solution**

Nitor Infotech isn't just another technology provider; we're a strategic partner with a proven track record of delivering high-impact solutions for financial institutions. Our deep expertise in the Malaysian financial market, combined with our unparalleled proficiency in developing secure, scalable, and compliant trading platforms, makes us the ONLY choice for Affin Moneybrokers.

Specifically, Nitor's capabilities directly address Affin's challenges:

Deep Malaysian Regulatory Expertise: Our team possesses intimate knowledge of GMRA and other relevant Malaysian regulations. We'll ensure your platform is not only compliant but also designed for future regulatory changes, minimizing future disruptions and costs.

Proven Track Record in Financial Technology: Nitor boasts a portfolio of successful implementations of complex trading systems for major financial institutions. This experience translates to reduced risk and faster deployment for Affin.

Cutting-Edge Technology and Integration: We leverage the latest technologies to build robust, secure, and scalable solutions that integrate seamlessly with Bloomberg and Affin's existing systems. This eliminates data silos and improves operational efficiency.

Automated Trade Execution and Real-Time Compliance Monitoring: Our solution will automate trade execution, providing real-time risk management, and compliance monitoring, eliminating manual errors and reducing compliance-related risks. This translates to improved operational efficiency and reduced regulatory exposure.

Efficient Collateral Management: The platform will streamline collateral management processes, ensuring the efficient handling of collateral across multiple transactions and participants, minimizing counterparty risks.

**The Investment: A Strategic Decision, Not an Expense**

For a total investment of USD 23,423.00 over a 5-month period, Affin Moneybrokers will receive a fully customized and compliant REPO trading platform. This investment is not merely an expense; it's a strategic decision that will deliver significant ROI through:

Increased Operational Efficiency: Automation reduces manual effort, speeding up transactions, and freeing up valuable staff time.

Reduced Compliance Risk: Real-time compliance monitoring mitigates penalties and reputational damage.

Improved Accuracy: Automated processes eliminate human errors, reducing the risk of costly mistakes.

Enhanced Scalability: The platform is designed to handle increasing transaction volumes and new financial instruments.

Competitive Advantage: A modern, efficient REPO trading platform provides a significant competitive edge in the Malaysian market.

**The Call to Action: Secure Your Competitive Future**

Affin Moneybrokers faces a critical choice: continue struggling with outdated systems, risking significant financial and operational penalties; or partner with Nitor Infotech to transform its REPO trading operations and secure its future. We are confident that our solution offers the most compelling combination of expertise, technology, and cost-effectiveness. Let's schedule a meeting to discuss your specific needs and demonstrate how Nitor Infotech can deliver unparalleled value to Affin Moneybrokers. Contact us today to begin the journey toward a more efficient, compliant, and profitable future.

**Our Understanding**

**Our Understanding**

About Affin Moneybrokers's Project

Inferred Current State and Challenges: Affin Moneybrokers likely operates a manual or partially automated REPO trading system, facing challenges common in the Malaysian financial market: manual processes leading to operational inefficiencies and increased risk of human error, difficulties in ensuring real-time compliance with GMRA regulations (Government Master Repurchase Agreement), lack of automated collateral management leading to potential delays and settlement issues, limited scalability to handle increasing transaction volumes and new financial instruments, and integration challenges with existing systems and market data providers like Bloomberg. The current system may struggle to provide the necessary audit trails and reporting required for regulatory compliance. Data silos and lack of real-time visibility are likely impacting operational efficiency and strategic decision-making.

Project Objectives and Success Criteria: The primary objective is to automate REPO and Reverse REPO transactions, ensuring full compliance with GMRA and efficient operations. Success will be measured by: a reduction in manual processing time, a decrease in operational risk (errors and breaches), improved compliance monitoring, streamlined collateral management, seamless integration with existing systems and Bloomberg, increased transaction throughput, enhanced reporting and audit capabilities, and a demonstrable ROI within the projectâ€™s timeframe and budget.

Proposed Technical Approach: We propose a robust, scalable, and secure REPO trading platform built on a microservices architecture. This approach allows for modular development, easier maintenance, and better scalability to handle future growth. The platform will incorporate features such as automated trade execution, real-time risk and compliance monitoring, automated collateral management, seamless integration with Bloomberg and existing systems via APIs, and a comprehensive reporting and analytics dashboard. We will leverage industry-standard technologies and prioritize security best practices throughout the development lifecycle. The solution will be designed for high availability and resilience.

Implementation Methodology

Phase 0: Discovery & Assessment (1 week): Detailed requirements gathering workshops with Affin Moneybrokers' stakeholders to confirm and refine functional and non-functional requirements. Assessment of existing infrastructure and systems to identify integration points and potential challenges. Development of a detailed project plan, including timelines and resource allocation.

Phase 1: Planning & Design (2 weeks): Detailed system design and architecture documentation. Database design and development. API design and integration specifications. Security architecture definition and implementation. Development of user interface (UI) mockups and prototypes for review and feedback.

Phase 2: Implementation (8 weeks): Development and testing of the REPO trading platform. Unit testing, integration testing, system testing, and user acceptance testing (UAT) will be conducted rigorously to ensure quality and functionality. Regular progress reports and stakeholder updates will be provided.

Phase 3: Go-Live & Support (4 weeks): Deployment of the platform to the production environment. Post-implementation support and training for Affin Moneybrokers' staff. Ongoing monitoring and maintenance of the system. Finalization of documentation.

Roles & Responsibilities

|  |  |  |
| --- | --- | --- |
| Phase | Nitor | Affin Moneybrokers |
| Phase 0 | Requirements gathering, assessment, planning | Stakeholder collaboration, data provision |
| Phase 1 | Design, architecture, database design | Review and approval of design documents |
| Phase 2 | Development, testing, integration | UAT, feedback, data migration (if applicable) |
| Phase 3 | Deployment, support, training, documentation | User training, issue reporting, go-live support |

Implementation Challenges & Solutions

|  |  |
| --- | --- |
| Challenge | Mitigation Strategy |
| Integration with existing systems | Phased integration approach, utilizing APIs and well-defined integration contracts. |
| Data migration | Robust data migration plan with thorough testing and validation. |
| Meeting regulatory compliance (GMRA) | Continuous collaboration with compliance experts, thorough testing against regulations. |
| Ensuring system scalability and performance | Microservices architecture, load testing, performance optimization strategies. |
| Budget constraints | Prioritization of features, efficient development practices, agile methodology. |
| Timeline constraints | Agile development methodology, close collaboration, experienced development team. |
| Security vulnerabilities | Penetration testing, security audits, adherence to industry best practices. |

Benefits of Partnership with Nitor

Quantifiable Benefits: Reduced operational costs through automation (estimated at X% based on Affin's current manual process costs), improved compliance and reduced risk of penalties, increased transaction throughput leading to higher trading volumes and revenue, faster time to market for new financial instruments.

Strategic Advantages: Access to experienced financial technology experts with deep understanding of the Malaysian market, proven track record of successful implementations, agile methodology for flexibility and responsiveness, commitment to client success.

ROI Considerations: A clear ROI will be demonstrated within 5 months through increased efficiency, reduced operational costs, and improved compliance. We project a return of Y% on investment within the first year. (Note: X% and Y% require further quantitative analysis based on Affin's specific data)

Our Implementation Practices

Quality Assurance Approach: Rigorous testing at every stage of development (unit, integration, system, UAT), automated testing, code reviews, and adherence to industry best practices.

Risk Management Framework: Proactive risk identification and mitigation strategies, regular risk assessments, contingency planning, and transparent communication of any potential risks.

Communication and Reporting Structure: Weekly progress reports, regular stakeholder meetings, transparent communication channels, and proactive issue resolution.

Support Model: Comprehensive post-implementation support, including 24/7 monitoring, issue resolution, and ongoing maintenance.

(Note: The percentages X% and Y% in section 5 require further detailed analysis based on Affin Moneybrokersâ€™ specific operational data and costs. This proposal provides a framework; further quantitative analysis is needed for complete accuracy.)

**Scope of Work**

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

**1. Project Overview**

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 compliance with GMRA (Government Master Repurchase Agreement) regulations and supporting key participants (Affin, interbank, Bursa Malaysia, BNM). The platform will prioritize automated trade execution, real-time compliance monitoring, and efficient collateral management. Seamless integration with market data providers (e.g., Bloomberg) and existing Affin systems is crucial. Robust security, reliability, and scalability are essential to handle increasing transaction volumes and accommodate new instruments while adhering to all relevant Malaysian regulations.

**1.1 In Scope**

System Design and Development: Design and development of a robust and scalable REPO trading platform incorporating all required functionalities. This includes database design, API integrations, and user interface development.

Automated Trade Execution: Development of automated workflows for initiating, executing, and confirming REPO/Reverse REPO transactions. This will include features for order placement, trade matching, and settlement processing.

Real-time Compliance Monitoring: Implementation of real-time monitoring capabilities to ensure compliance with GMRA and other relevant Malaysian regulations. This includes alerts and reporting mechanisms for any compliance breaches.

Collateral Management: Development of a module for efficient management of collateral, including tracking, valuation, and transfer.

Market Data Integration: Integration with a market data provider (e.g., Bloomberg Terminal API â€“ assuming access is provided by Affin Moneybrokers). This integration will focus on obtaining necessary real-time market data for pricing and risk assessment.

Integration with Existing Systems: Integration with Affin Moneybrokers' existing trading systems and databases (specific APIs and integration points to be defined collaboratively). This will require detailed documentation and access from Affin.

User Interface (UI) Development: Development of a user-friendly and intuitive interface for traders and administrators.

Security Implementation: Implementation of robust security measures to protect sensitive data and prevent unauthorized access. This includes encryption, authentication, and authorization mechanisms.

Testing and Quality Assurance: Comprehensive testing of the platform, including unit testing, integration testing, user acceptance testing (UAT), and performance testing. This will involve developing a robust test suite and documenting testing procedures.

Deployment and Documentation: Deployment of the platform to a suitable environment (to be determined collaboratively) and provision of comprehensive documentation, including user manuals and technical specifications.

**1.2 Out of Scope**

Data Migration: Migration of existing REPO transaction data from legacy systems is out of scope unless specifically defined and agreed upon separately. This would require additional time and resources.

Regulatory Compliance Consulting: Nitor Infotech will develop the platform to meet specified regulatory requirements, but we are not providing independent regulatory compliance consulting services. Affin Moneybrokers is responsible for ensuring the platform meets all legal and regulatory standards.

Third-Party System Maintenance: Maintenance and support of third-party systems (e.g., Bloomberg Terminal) are the responsibility of Affin Moneybrokers.

Post-Implementation Support: Ongoing maintenance and support after the initial deployment are outside the scope of this project, though we can discuss separate service level agreements (SLAs) for post-implementation support.

Development of New Financial Instruments: Support for instruments beyond those explicitly defined and agreed upon in the project requirements is excluded.

Custom Reporting Tools beyond standard reporting: While standard reporting will be included within the scope of the system, custom reporting tools beyond the base functionality will be considered out of scope, unless explicitly added as a change request and approved with appropriate adjustment to the timeline and budget.

**1.3 Client Responsibilities**

Provide Access to Systems and Data: Provide Nitor Infotech with timely access to relevant systems, APIs, and data required for integration and testing. This includes credentials, documentation, and necessary support personnel.

Define Business Requirements: Provide clear and detailed business requirements, including functional specifications, user stories, and use cases.

Active Participation in Testing: Actively participate in testing phases (including UAT) and provide timely feedback.

Data Validation: Validate the accuracy of data provided for integration and testing.

Provide Subject Matter Experts (SMEs): Provide access to SMEs who possess the necessary knowledge of Affin's existing systems, REPO trading processes, and regulatory requirements.

Secure Necessary Licenses and Subscriptions: Affin Moneybrokers is responsible for securing any necessary licenses or subscriptions to third-party tools or APIs required for the platform's operation. (e.g., Bloomberg Terminal API subscription).

**1.4 Assumptions**

Affin Moneybrokers will provide timely access to necessary systems, APIs, data, and personnel.

The Bloomberg Terminal API (or chosen market data provider) is stable, reliable, and well-documented.

Affin Moneybrokers possesses the necessary technical expertise to support the integration and ongoing maintenance of the platform.

Sufficient client resources will be dedicated to the project throughout its lifecycle.

All necessary regulatory approvals and permissions are obtained by Affin Moneybrokers before project commencement.

The project budget of USD 23423.0 is sufficient for the scope of work outlined above. Any significant deviations from the requirements may necessitate adjustments to the budget.

**2. Acceptance Criteria**

The project will be considered complete upon successful completion of all in-scope deliverables, satisfactory completion of UAT by Affin Moneybrokers, and formal sign-off on the delivered system by an authorized Affin Moneybrokers representative. Specific acceptance criteria for each deliverable will be defined in a separate document.

**3. Project Timeline**

The project timeline is estimated at 5 months, with detailed milestones and deliverables to be outlined in a separate project schedule.

**4. Payment Terms**

Payment terms will be defined in a separate contract agreement.

**5. Intellectual Property**

The ownership of intellectual property rights will be outlined in a separate contract agreement.

**6. Change Management**

Any changes to the scope of work will be documented in a formal change request, reviewed, and approved by both Nitor Infotech and Affin Moneybrokers. These changes may impact the project timeline and budget.

**Solution Approach**

**Solution Overview:**

The proposed solution for Affin Moneybrokers' REPO Trading Platform will employ a microservices architecture, leveraging a robust technology stack to ensure scalability, security, and compliance with GMRA and Malaysian regulations. The system will prioritize automated trade execution, real-time compliance monitoring, and efficient collateral management. Key components will include a trade execution engine, a compliance module, a collateral management system, and secure APIs for integration with external systems and market data providers like Bloomberg. A cloud-native approach using AWS or Azure will be adopted to ensure high availability and scalability.

**Phases:**

Assessment and Planning (2 weeks): This phase will involve a detailed assessment of Affin's existing systems, infrastructure, and business processes related to REPO trading. We will identify integration points, data requirements, and potential risks. Deliverables include a comprehensive requirements document, a high-level architecture design, and a project schedule.

Design and Architecture (4 weeks): This phase will focus on designing the detailed microservices architecture, database schema, API specifications, and security architecture. We will select specific technologies and define the integration strategy with existing systems and third-party services (Bloomberg Terminal, Bursa Malaysia, BNM systems). Deliverables include detailed design documents, API specifications, database schema, and security architecture design.

Development (10 weeks): This phase will involve the development and unit testing of individual microservices. We will implement automated build and deployment pipelines using CI/CD tools. Deliverables include fully functional microservices with comprehensive unit tests and integration tests.

Integration and Testing (6 weeks): This phase will focus on integrating the developed microservices with existing systems and third-party APIs. Rigorous integration testing, system testing, and user acceptance testing (UAT) will be conducted to ensure functionality and performance. Deliverables include a fully integrated system that passes all testing phases, including performance testing under projected load.

Security Hardening (2 weeks): This phase will involve implementing comprehensive security measures, including penetration testing and vulnerability assessments. We will address any identified security vulnerabilities and ensure compliance with industry best practices and Malaysian regulations. Deliverables include a security report with remediation plans, and a secure system ready for production deployment.

Deployment and Go-Live (1 week): This phase will involve deploying the system to the chosen cloud environment. We will implement a phased rollout approach to minimize disruption. Post-deployment monitoring and support will commence immediately. Deliverables include a fully deployed and operational system.

Monitoring and Support (Ongoing): This phase will involve continuous monitoring of system performance, error tracking, and incident response. We will provide ongoing support and maintenance to ensure the system's stability and reliability. Deliverables include regular performance reports, proactive issue resolution, and ongoing system maintenance.

**Technology Stack:**

Programming Languages: Java (Spring Boot framework), Python (for specific tasks requiring scripting or data analysis)

Databases: PostgreSQL (primary database), potentially Redis for caching.

Message Queue: RabbitMQ or Kafka for asynchronous communication between microservices.

Cloud Platform: AWS or Azure (for scalability, reliability, and security).

API Gateway: Kong or Apigee for managing and securing API traffic.

Monitoring Tools: Datadog, Prometheus, Grafana for performance monitoring and alerting.

CI/CD: Jenkins, GitLab CI, or similar.

**Integration Strategy:**

The system will integrate with existing systems and third-party services through secure APIs and message queues. Data synchronization will be handled using scheduled jobs and real-time data streaming where appropriate. We will use standard API protocols (REST, possibly WebSockets for real-time data) and message formats (JSON). Secure authentication and authorization mechanisms will be implemented to protect sensitive data.

**Risk Mitigation:**

Technical Risks: Mitigation strategies include robust testing (unit, integration, system, performance, UAT), code reviews, continuous integration and continuous delivery (CI/CD), and thorough documentation.

Security Risks: Mitigation strategies include penetration testing, vulnerability assessments, secure coding practices, multi-factor authentication, encryption of sensitive data both in transit and at rest, and regular security audits.

Integration Risks: Mitigation strategies include phased integration, thorough testing of integration points, and close collaboration with the teams responsible for existing systems.

Regulatory Risks: We will engage legal and compliance experts to ensure compliance with all relevant Malaysian regulations and GMRA guidelines throughout the project lifecycle.

**Security Considerations:**

Security will be a top priority throughout the project. We will implement robust security measures, including:

Multi-factor authentication

Role-based access control (RBAC)

Data encryption (both in transit and at rest)

Regular security audits and penetration testing

Intrusion detection and prevention systems

Secure coding practices and code reviews

**Scalability and Performance:**

Scalability and performance will be addressed through:

Microservices architecture

Cloud-native deployment on AWS or Azure

Load balancing

Caching (Redis)

Database optimization

Performance testing and tuning

**Monitoring and Support:**

A comprehensive monitoring and support plan will be implemented, including:

Real-time performance monitoring

Automated alerting for critical events

Logging and error tracking

Incident response procedures

Regular system maintenance and updates

24/7 support

This detailed technical solution approach provides a comprehensive plan for developing and deploying a robust and secure REPO trading platform for Affin Moneybrokers, addressing all stated requirements and mitigating potential risks. The phased approach allows for iterative development, testing, and deployment, ensuring a successful project outcome within the 5-month timeframe.

**Project Timeline & Deliverables**

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

The project will be executed over five months (approximately 20 weeks), divided into seven distinct phases with clearly defined milestones and deliverables. Resource allocation will prioritize experienced developers, compliance specialists, and system architects, with roles and responsibilities documented in a separate resource plan. Dependencies between phases will be managed using a Gantt chart and regular status meetings, with critical path activities closely monitored to ensure timely project completion. Risk mitigation strategies will address potential delays from third-party integrations and regulatory approvals.

**Phase 1: Requirements Gathering and Analysis (2 weeks)**

Deliverable: A comprehensive requirements specification document detailing functional and non-functional requirements, including GMRA compliance specifications, integration points with existing systems (Affin internal systems, Bursa Malaysia, BNM), and market data feeds (Bloomberg). This will also include security and scalability requirements, user acceptance criteria, and detailed use cases.

Resources: Business analysts, project manager, compliance officer.

**Phase 2: System Design and Architecture (3 weeks)**

Deliverable: A detailed technical architecture document, including system diagrams, database design, API specifications, and technology stack selection. This document will outline the chosen technologies and their justifications based on performance, security, and scalability needs. A high-level security design will also be included.

Resources: System architects, senior developers, database administrator.

**Phase 3: Development (8 weeks)**

Deliverable: A fully functional REPO trading platform, incorporating automated trade execution, real-time compliance monitoring, and efficient collateral management modules. This phase will involve iterative development sprints, with regular code reviews and testing. The platform will be developed in a modular fashion, allowing for easier testing and future expansion.

Resources: Development team (frontend, backend, database), DevOps engineers.

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

Deliverable: A fully integrated and thoroughly tested system. This includes unit testing, integration testing, system testing, and user acceptance testing (UAT). The testing process will focus on functionality, performance, security, and compliance with GMRA and other relevant regulations. Bug fixes and enhancements will be implemented based on the UAT feedback. Detailed test reports will be generated.

Resources: Testing team (QA engineers), developers, compliance officer.

**Phase 5: Security Audit and Compliance Review (2 weeks)**

Deliverable: A completed security audit report confirming compliance with industry best practices and relevant Malaysian regulations. This will also involve a review of the system's compliance with GMRA requirements. Any necessary remediation efforts will be completed in this phase.

Resources: Security auditors, compliance officer, legal counsel (if needed).

**Phase 6: Deployment and Go-Live (2 weeks)**

Deliverable: A fully deployed and operational REPO trading platform, accessible to authorized users. This includes preparation of the production environment, deployment of the application, and user training. Post-deployment monitoring and support will be initiated.

Resources: DevOps engineers, system administrators, training team.

**Phase 7: Post-Implementation Support and Maintenance (1 week)**

Deliverable: A documented handover to the operational support team, including operational procedures, troubleshooting guides, and ongoing support plan.

Resources: Operations team, support personnel.

This timeline assumes a collaborative and agile development approach with regular communication and progress monitoring. A detailed Gantt chart, illustrating interdependencies and critical path activities, will be provided separately. Contingency plans will be incorporated to address potential risks and delays.

**Team Structure**

**Team Structure:**

The project team will consist of experienced professionals with expertise in financial technology, real-time systems, and secure software development. The team will be structured as follows, recognizing the need for a balance between specialized skills and efficient team size for a 5-month timeline:

|  |  |  |  |
| --- | --- | --- | --- |
| Sr. | Role | Resource Count | Justification |
| 1 | Project Manager | 1 | Manages the project timeline, budget, resources, and stakeholder communication. Crucial for a complex project with a tight deadline. |
| 2 | Solutions Architect | 1 | Defines the overall technical architecture, ensuring scalability, security, and compliance with GMRA and Malaysian regulations. Essential for guiding development and integration. |
| 3 | Backend Developer | 3 | Develops the core trading engine, integrates with market data feeds (Bloomberg), handles collateral management, and ensures seamless interaction with existing systems. Three developers are necessary given the complexity and timeline. |
| 4 | Frontend Developer | 2 | Designs and develops the user interface for traders, focusing on user experience and efficient transaction execution. Two developers allow for parallel development and quicker turnaround. |
| 5 | Database Engineer | 1 | Designs, implements, and optimizes the database schema to manage trade data, collateral information, and audit trails efficiently. Critical for performance and compliance. |
| 6 | QA Engineer | 2 | Develops and executes test plans, ensuring the platform's reliability, security, and compliance. Two QA engineers are needed to cover functional, performance, and security testing adequately within the timeframe. |
| 7 | Security Engineer | 1 | Focuses on securing the platform against cyber threats, adhering to industry best practices, and ensuring compliance with Malaysian regulations. Essential given the sensitive nature of financial transactions. |
| 8 | DevOps Engineer | 1 | Manages the deployment, monitoring, and maintenance of the platform, ensuring high availability and scalability. Critical for a real-time trading system. |

**Optional Roles (Depending on Budget and Complexity):**

Compliance Officer: (0-1) If internal compliance resources are insufficient, a dedicated compliance officer can ensure adherence to all regulations throughout the development process.

Business Analyst: (0-1) To further refine user stories, elicit requirements from stakeholders (Affin, interbank, Bursa Malaysia, BNM), and ensure the final product meets business needs.

Total Estimated Team Size: 12-14 individuals

This structure prioritizes the core development, testing, and infrastructure aspects crucial for a successful REPO trading platform. The optional roles offer further enhancement based on project needs and available resources. The team size is optimized to meet the 5-month deadline, but might require adjustments based on individual developer velocity and potential unforeseen challenges. Regular progress reviews and potential adjustments to resource allocation will be necessary throughout the project lifecycle.

**Commercials**

**Commercials: Affin Moneybrokers REPO Trading Platform**

This section details the costs and payment terms associated with the development of the REPO Trading Platform for Affin Moneybrokers. We propose two approaches, each optimized for different priorities â€“ Approach 1 prioritizes speed to market with a slightly higher upfront cost, while Approach 2 emphasizes long-term cost efficiency. Both approaches remain within the allocated budget of $23,423.

**Total Cost of Ownership**

|  |  |  |
| --- | --- | --- |
| Component | Estimated Cost ($) - Approach 1 | Estimated Cost ($) - Approach 2 |
| Infrastructure cost | $250 /month | $150 /month |
| Development cost | $18,000 | $15,000 |
| Power BI Licensing | $0 | $0 |
| Development Time | 15 Weeks | 20 Weeks |
| Total Project Cost | $18,750 | $15,300 |

**Infrastructure Costs**

**Approach 1**

|  |  |  |  |
| --- | --- | --- | --- |
| Services | Sub-services | Description | Approx. Monthly Cost (in USD) |
| Azure Services | App Service Plan | Basic tier for hosting the application. | $100 |
|  | Azure SQL Database | Managed database service for data persistence. | $100 |
|  | Azure Blob Storage | Cost-effective storage for large datasets. | $25 |
|  | Azure DevOps | Basic Plan (for 2 users): $12/month. Provides access to Azure Boards, Repos, Pipelines, Test Plans, Artifacts. | $12 |
| Terraform | HCP Free | UP TO 500 resources per month. Get started with all capabilities needed for infrastructure as code provisioning. | $0.00 |
| Total infrastructure costs (per month) |  |  | $250 |

**Approach 2**

|  |  |  |  |
| --- | --- | --- | --- |
| Services | Sub-services | Description | Approx. Monthly Cost (in USD) |
| AWS Services | EC2 (t2.micro) | Low cost instance for hosting the application. | $10 |
|  | RDS (MySQL) | Managed MySQL database service for data persistence. | $30 |
|  | S3 | Cost-effective storage for large datasets. | $10 |
|  | AWS DevOps (GitHub) | Utilizing a self-managed Github instance with free tier for repository management. DevOps will be managed with free-tier tools where applicable. | $0.00 |
| Total infrastructure costs (per month) |  |  | $150 |

**Milestones for Approach 1**

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Deliverable | Delivery Timeline (In Weeks) | Amount |
| Milestone 0 | Project Kickoff, Requirements Gathering | Week 0 | $1,000 |
| Milestone 1 | System Design and Architecture Documentation | Week 3 | $2,000 |
| Milestone 2 | Development of Core Trading Engine | Week 8 | $5,000 |
| Milestone 3 | Integration with Market Data and Existing Systems, Initial Testing | Week 12 | $5,000 |
| Milestone 4 | User Acceptance Testing (UAT), Final Testing, Bug Fixes | Week 15 | $5,000 |
| Total Amount |  |  | $18,000 |

**Milestones for Approach 2**

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Deliverable | Delivery Timeline (In Weeks) | Amount |
| Milestone 0 | Project Kickoff, Requirements Gathering | Week 0 | $1,000 |
| Milestone 1 | System Design and Architecture Documentation, Detailed Planning | Week 5 | $2,000 |
| Milestone 2 | Development of Core Trading Engine | Week 12 | $5,000 |
| Milestone 3 | Integration with Market Data and Existing Systems, Initial Testing | Week 18 | $4,000 |
| Milestone 4 | User Acceptance Testing (UAT), Final Testing, Bug Fixes, Documentation | Week 20 | $3,000 |
| Total Amount |  |  | $15,000 |

**License Cost**

This project does not require any third-party licensing beyond standard cloud platform usage. Power BI is not required for this project as it's focused on trading platform functionality rather than reporting and visualization.

**Payment Terms and Conditions**

Currency: USD

Payment Schedule: Milestone-based payments as outlined in the Milestones sections for each approach.

Invoice Terms: Invoices will be issued upon completion of each milestone. Payment is due within 15 days of invoice date.

Interest on Late Payments: A 1.5% late payment fee will be applied per month for payments exceeding the due date.

Right to Halt Work: We reserve the right to halt work on the project if payments are not received according to the agreed schedule.