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Purdue Global Unit 2 Assignment | 12/13/2024

IT473 Bachelors Capstone in Cloud Computing.

Unit 2 Assignment.

**Cloud Infrastructure Implementation for GotNoChill.com**

**Project Charter and Scope Statement**

**Part 1:**

PrimePath Provisions is using its knowledge in the ever-changing e-commerce scene to introduce GotNoChill.com, a platform meant to provide fresh, never-frozen healthy food to the 18–28 year olds demographic. Under this eight-week project, direct-to-consumer operations will have a scalable, safe, and efficient infrastructure built from Microsoft Azure cloud services. Using a $120,000–$200,000 budget, Project Sponsor Professor Stephen Savage is driving the project's development.  
  
**Project Overview and Objectives**

Establishing a strong Azure-based cloud architecture guarantees high availability, safe data management, and scalable performance, thereby serving the fundamental goals. Important elements include:

* **Compute Resources:**  high-availability systems supporting flawless operations.
* **Data Management:** Implementing secure storage solutions and adhering to security standards.
* **Real-Time Analytics:** Advanced analytics capabilities that allow for informed decision-making.
* **Integration Frameworks:** APIs for inventory management, payment processing, and order automation.

These objectives align with the company's needs to turn PrimePath Provisions into a contemporary, cloud-based e-commerce platform.

**Team Structure and Responsibilities**

Our team guarantees effective implementation by combining different knowledge:

* **Mo:** UX Lead, Data Analytics Support
* **Dalton:** Security and Infrastructure Lead
* **Chris:** Project Management and Quality Assurance
* **Ian:** Cloud Architecture and Security Lead

This cooperative approach guarantees alignment with business and technical goals and helps us to effectively handle difficult problems.

**Part 2:**

**Project Scope and Implementation Phases**

The project scope includes key infrastructure and integration components:

**Core Infrastructure Development:**

* Configuring Azure Virtual Network and App Services.
* Implementing Azure SQL for data management.
* Deploying scalable storage and CDN solutions.

**Integration Services:**

* Developing RESTful APIs for real-time data synchronization.
* Setting up payment processing systems and inventory synchronization.

**Implementation Timeline:**

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Description automatically generated**

**Sprint 1: Project Setup and Initial Design (2 weeks)**

● Establish the development environment and project infrastructure.

● Conduct detailed requirements gathering and analysis.

● Design the basic user interface (UI) and user experience (UX) for the e-commerce platform.

● Begin the development of core backend components like user authentication and product catalog management.

**Sprint 2: E-commerce Platform Development (3 weeks)**

● Develop the main features of the e-commerce platform: product browsing, search, shopping cart, and checkout.

● Integrate secure payment gateways.

● Implement basic order management functionalities.

● Perform initial testing and quality assurance (QA).

**Sprint 3: Inventory and Order Management Integration (3 weeks)**

● Develop and implement APIs to integrate the e-commerce platform with existing inventory and order management systems.

● Ensure seamless data synchronization between systems.

● Test the integration thoroughly to guarantee data accuracy and consistency.

**Sprint 4: Logistics and Delivery Management (4 weeks)**

● Develop and implement features for logistics customization, including delivery slots, pick-up points, and special delivery instructions.

● Integrate the platform with existing transportation management systems (TMS).

● Develop route optimization algorithms.

**Sprint 5: Real-time Order Tracking and Customer Communication (3 weeks)**

● Implement real-time order tracking functionality for customers.

● Develop and integrate customer communication channels (e.g., email, SMS) for order updates and notifications.

● Perform user acceptance testing (UAT) with a focus on the customer experience.

**Sprint 6: Data Analytics and Reporting (3 weeks)**

● Develop data analytics dashboards to track key performance indicators (KPIs) such as sales, customer behavior, and logistics performance.

● Implement data visualization tools for insightful reporting.

● Train relevant personnel on using and interpreting data analytics dashboards.

**Sprint 7: Security and Performance Optimization (2 weeks)**

● Implement robust security measures to protect customer data and ensure compliance with relevant regulations.

● Perform thorough security testing and penetration testing.

● Optimize system performance for scalability and efficiency.

**Sprint 8: Deployment and Go-Live Support (2 weeks)**

● Deploy the e-commerce platform to the Azure cloud environment.

● Provide comprehensive training to internal users and customer support teams.

● Go live with the platform and offer initial support and monitoring.

This plan assumes an 8-sprint structure, which can be adjusted based on project-specific needs and complexity. It also acknowledges the company's existing IT infrastructure and potential skill gaps, highlighting the importance of training and integration throughout the process. The plan also prioritizes key functionalities like real-time order tracking, logistics customization, and data analytics, reflecting the project's objectives and scope.

**Success Metrics**

The project’s success will be measured through technical and business metrics:

* 99.9% platform availability.
* Sub-2-second response times.
* Comprehensive system integration.
* Secure data handling with compliance to standards.
* Enhanced customer satisfaction through a seamless user experience.

**Part 3: \*INDIVIDUAL SUBMISSION**

**High-Performance Team Approach and Initial Meetings**  
Our team emphasizes the following ideas in order to guarantee success:  
**Critical Factors for High-Performance Teams:**

1. **Technical Expertise**:
   * Proficiency in Azure services and cross-functional capabilities.
   * Commitment to continuous learning and certification.
2. **Clear Communication**:
   * Regular updates and detailed documentation.
   * Effective problem-solving discussions.
3. **Agile Adaptation**:
   * Flexibility in addressing challenges and adopting innovative solutions.

**Importance of Initial Meetings:**  
First team meetings lay a strong basis by:

* Coordinating goals, responsibilities, and schedules.
* Setting technical benchmarks and criteria.
* Considering possible risks and mitigating techniques.

These sessions help the team to run coherently, so ensuring that every member is in agreement and ready to meet obstacles.

The GotNoChill.com project places PrimePath Provisions to shine in the cutthroat food delivery market by using Azure's cloud capabilities and combining our team's varied experience. Our method combines agile techniques, contemporary cloud technologies, and high-performance team approaches to guarantee a strong and scalable solution that not only satisfies current corporate needs but also promotes long-term development and innovation.

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