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Day – 2
Hackathon – 3

18-01-2025

General E-commerce Marketplace Technical

Foundation

Prepared Date: January 16, 2025 by: Azmat Ali

Technical Plan Aligned with Business Goals

Business Objective

- **Create a scalable e-commerce platform**
- **Provide seamless shopping experience**

- Enable efficient product management
- Ensure secure payment processing
- Implement order tracking and management

Technical Requirement

Frontend Requirements

- Next.js-based responsive web application
- Server-side rendering for improve

SEO

- Client-side state management using React Context / Redux
- Progressive Web App (PWA) capabilities
- Responsive design breakpoints: Mobile (< 768px), Tablet (768px -1024px), Desktop (> 1024px)

Backend Requirements (SanitCMS)

- Content management for products, categories, and orders
- Real-time inventory tracking

- **Order management system**
- **Customer data management**
- **Role-based access control**

Third-party Interactions

- **Payment Gateway (Stripe)**
- **Email Service (SendGrid)**
- **Image CDN (Cloudinary)**
- **Analytics (Google Analytics)**
- **Search Implementation**

Implementation Roadmap

Phase 1: Setup & Basic Structure

- **Initialize Next.js project**
- **Set up Sanity CMS**
- **Implement basic routing**
- **Create core components**

Phase 2: Core Features

- **Product listing and details**
- **Shopping cart functionality**
- **User authentication**
- **Basic checkout process**

Phase 3: Integration & Testing

- **Payment gateway integration**
- **Order management**
- **Email notifications**
- **Testing and bug fixes**

Best Practices Implementation

Performance Optimization

- Image optimization using next/image
- Lazy loading for product listing
- API response caching
- Code splitting for route-based chunkin

Security Measure

- Input validatio
- XSS protectio
- CSRF token
- Secure payment handlin

SEO Consideration

- **Meta tags managemen**
- **Structured data implementatio**
- **Sitemap generatio**
- **robots.txt cofiguratio**

Quality Assurance Checklist

Mobile responsiveness

Cross-browser compatibility

Performance metrics

Security compliance

API error handling

Loading states

Form validation

Payment flow testing

Monitoring & Analytics

- **Implement error tracking (Sentry)**
- **Set up performance monitoring**
- **Track user behavior**
- **Monitor API performance**
- **Track conversion rates**

This documentation serves as a comprehensive guide for implementing the ecommerce marketplace, focusing on maintainability, scalability, and user experience.

Prepared By: Azmat Ali