📊 LAPORAN PROJECT BREAKDOWN & PROGRESS

Sistem Manajemen Penjualan Toko Kue D'Lillah

🎯 ANALISIS REQUIREMENTS BERDASARKAN BAB 1

Masalah Utama yang Diselesaikan:

1. **Keterlambatan pelayanan** saat lonjakan permintaan (hari raya/musim perayaan)
2. **Tidak ada sistem prioritas** dalam pengelolaan pesanan
3. **Inefficiency** dalam pemprosesan pesanan

Solusi yang Harus Diimplementasikan:

✅ **Algoritma Greedy** untuk prioritas pemprosesan pesanan berdasarkan:

- Ketersediaan stok
- Waktu pemesanan

🛠️ FITUR-FITUR YANG HARUS DIBUAT

1. CORE MANAGEMENT FEATURES

📦 A. Manajemen Produk/Stok

- [ ] CRUD Produk Kue
- [ ] Kategori Produk (Kue Basah, Kue Kering, Custom, dll)
- [ ] Upload Foto Produk
- [ ] **Monitor Stok Real-time**
- [ ] Alert Stok Menipis
- [ ] Batch Update Stok

🛒 B. Manajemen Pesanan

- [ ] Input Pesanan Baru
- [ ] **SISTEM PRIORITAS PESANAN** ⭐ (Algoritma Greedy)
- [ ] Status Tracking Pesanan
- [ ] Queue Pemprosesan Pesanan
- [ ] Estimasi Waktu Penyelesaian
- [ ] History Pesanan

👥 C. Manajemen Pelanggan

- [ ] Database Pelanggan
- [ ] Customer Loyalty Program
- [ ] Contact Information
- [ ] Order History per Customer

2. ALGORITMA GREEDY IMPLEMENTATION ⭐

🎯 Lokasi Implementasi: SISTEM PRIORITAS PESANAN

Input Parameters:

- Waktu pemesanan
- Ketersediaan stok
- Jenis produk
- Deadline pesanan
- Customer priority level

Greedy Algorithm Logic:

```
PRIORITAS = f(stok_availability, urgency_time, customer_tier)
```

Output:

- Queue pesanan yang diurutkan berdasarkan prioritas
- Optimal processing order

3. DASHBOARD & ANALYTICS

📊 A. Dashboard Utama

- [ ] Real-time Order Queue
- [ ] Stock Level Indicators
- [ ] Daily/Weekly Sales Summary
- [ ] Priority Queue Visualization
- [ ] Performance Metrics

📈 B. Laporan & Analytics

- [ ] Laporan Penjualan Harian/Bulanan
- [ ] Analisis Efisiensi Prioritas

- [ ] Customer Behavior Analysis
- [ ] Stock Movement Report
- [ ] Peak Season Performance

4. SEASONAL/PEAK MANAGEMENT 🎉

🎄 A. Special Events Management

- [ ] Holiday Menu Planning
- [ ] Bulk Order Management
- [ ] Advanced Booking System
- [ ] Capacity Planning Tools

⚡ B. Peak Load Handling

- [ ] Auto-scaling Queue Management
- [ ] Emergency Mode Interface
- [ ] Quick Order Entry
- [ ] Batch Processing Tools

📋 DETAILED PROGRESS CHECKLIST

PHASE 1: FOUNDATION ✅ (COMPLETED)

- [x] Project Setup (Nuxt.js + Tailwind + Shadcn)
- [x] Firebase Integration
- [x] Authentication System
- [x] Basic Dashboard
- [x] Login/Register Pages

PHASE 2: DATABASE DESIGN 🚧 (IN PROGRESS)

- [ ] **Firestore Collections Design:**
- [ ] `products` - Product catalog
- [ ] `orders` - Order management
- [ ] `customers` - Customer database
- [ ] `stock` - Inventory tracking
- [ ] `categories` - Product categories
- [ ] `priority_queue` - Order priority queue

PHASE 3: CORE FEATURES ⏳ (PENDING)

3A. Product Management

- [ ] Product CRUD Operations
- [ ] Category Management
- [ ] Stock Level Monitoring
- [ ] Image Upload (Firebase Storage)
- [ ] Bulk Import/Export

3B. Order Management System

- [ ] Order Entry Form
- [ ] Customer Selection/Creation
- [ ] 🎯 **GREEDY ALGORITHM IMPLEMENTATION**
- [ ] Priority Queue Display
- [ ] Order Status Updates
- [ ] Processing Workflow

3C. Customer Management

- [ ] Customer Database
- [ ] Contact Management
- [ ] Order History Tracking
- [ ] Customer Tier System

PHASE 4: ALGORITMA GREEDY ⭐ (CRITICAL)

4A. Algorithm Design

- [ ] Define Priority Scoring Function
- [ ] Implement Greedy Selection Logic
- [ ] Real-time Queue Updates
- [ ] Performance Optimization

4B. Testing & Validation

- [ ] Algorithm Performance Testing
- [ ] Edge Case Handling
- [ ] Load Testing (Peak Season Simulation)
- [ ] User Acceptance Testing

PHASE 5: ANALYTICS & REPORTING ⏳ (PENDING)

- [ ] Dashboard Metrics

- [ ] Sales Reports
- [ ] Efficiency Analytics
- [ ] Export Capabilities
- [ ] Automated Notifications

PHASE 6: OPTIMIZATION ⏳ (PENDING)

- [ ] Performance Tuning
- [ ] Mobile Responsiveness
- [ ] Offline Capabilities
- [ ] Security Hardening
- [ ] Documentation

🎯 IMMEDIATE NEXT STEPS (PRIORITY ORDER)

WEEK 1-2: DATABASE FOUNDATION

- [ ] Design Firestore collections structure
- [ ] Create data models/interfaces
- [ ] Setup initial seed data
- [ ] Test CRUD operations

WEEK 3-4: PRODUCT MANAGEMENT

- [ ] Build product management interface
- [ ] Implement stock monitoring
- [ ] Add image upload functionality
- [ ] Create category system

WEEK 5-6: ORDER SYSTEM + GREEDY ALGORITHM ⭐

- [ ] Design order entry system
- [ ] **IMPLEMENT GREEDY ALGORITHM**
- [ ] Create priority queue interface
- [ ] Test algorithm performance

WEEK 7-8: INTEGRATION & TESTING

- [ ] Integrate all modules
- [ ] Comprehensive testing
- [ ] Performance optimization
- [ ] User feedback incorporation

📊 CURRENT PROGRESS METRICS

Component	Status	Progress	Priority
Authentication	✅ Complete	100%	High
Basic UI/Dashboard	✅ Complete	100%	High
Database Design	🚧 In Progress	20%	Critical
Product Management	⏳ Pending	0%	High
Greedy Algorithm	⏳ Pending	0%	**CRITICAL**
Order Management	⏳ Pending	0%	Critical
Analytics/Reports	⏳ Pending	0%	Medium

Overall Progress: 25%

🎯 ALGORITHM GREEDY - DETAIL IMPLEMENTATION

Fungsi Prioritas Pesanan:

```javascript
function calculateOrderPriority(order) {
  const stockScore = getStockAvailability(order.items);
  const timeScore = getUrgencyScore(order.deadline);
  const customerScore = getCustomerTier(order.customerId);

  return GREEDY_FUNCTION(stockScore, timeScore, customerScore);
}
```

Expected Output:

- Automatic order queue sorting
- Reduced processing time by 40-60%
- Better customer satisfaction during peak seasons
- Optimal resource utilization

✅ ACTION ITEMS FOR IMMEDIATE EXECUTION

HIGH PRIORITY (This Week)

- [ ] Design complete Firestore database schema

- [ ] Create Shadcn UI components for product management
- [ ] Start building product CRUD interface

CRITICAL PRIORITY (Next Week)

- [ ] Begin Greedy Algorithm implementation
- [ ] Create order priority system interface
- [ ] Test algorithm with sample data

MEDIUM PRIORITY (Following Weeks)

- [ ] Build comprehensive dashboard
- [ ] Implement reporting system
- [ ] Add mobile responsiveness

📝 **NOTES:**

- Project menggunakan **Shadcn/ui Nuxt** untuk UI components
- **Algoritma Greedy** adalah core requirement untuk skripsi
- Focus pada **seasonal peak handling** sesuai problem statement
- Database harus support **real-time updates** untuk priority queue

🎯 **SUCCESS METRICS:**

- Reduction in order processing time during peak seasons
- Improved customer satisfaction scores
- Efficient stock utilization
- Automated priority-based order management