Comprehensive List of All Features, Functionalities & Pages for Full Deployment

Based on all project conversations, here's the **exhaustive specification** for the complete ideal version:

🎨 FRONTEND - ALL PAGES & UI COMPONENTS

AUTHENTICATION PAGES

1. **LoginPage**
   - Email/password input fields
   - "Remember me" checkbox
   - Login button with loading state
   - "Forgot password?" link
   - "Create account" navigation link
   - Social login options (Google OAuth future consideration)
   - Error message display
   - Auto-redirect to HomePage on success
   - Input validation (email format, required fields)
2. **RegisterPage**
   - Email input with validation
   - Password input with strength indicator
   - Confirm password input with match validation
   - Company name input
   - SIRET number input
   - Phone number input
   - Terms & conditions checkbox
   - Sign up button with loading state
   - "Already have an account?" login link
   - Auto-profile creation via database trigger
   - Success message and auto-redirect
   - Error handling for duplicate emails
3. **ForgotPasswordPage**
   - Email input field
   - Submit button

- Success confirmation message
- Back to login link
- Email delivery status indicator

4. **ResetPasswordPage**

    - New password input
    - Confirm new password input
    - Submit button
    - Password requirements display
    - Success confirmation
    - Auto-redirect to login

MAIN DASHBOARD

5. **HomePage (Dashboard)**
    - **Header Section:**
        - Hamburger menu button (collapsible sidebar trigger)
        - User profile avatar
        - Notifications bell icon
        - Current date display
    - **KPI Cards (4 cards):**
        - Total revenue (monthly)
        - Pending quotes count
        - Unpaid invoices amount
        - Active job sites count
    - **Quick Actions Bar:**
        - Create new quote button
        - Create new invoice button
        - Add client button
        - Scan invoice button (OCR)
    - **Revenue Chart:**
        - Monthly revenue bar chart (last 12 months)
        - Interactive tooltips
        - Toggle view (revenue vs. profit margins)
    - **Recent Activity Feed:**
        - Last 5 quotes created
        - Last 5 invoices issued
        - Recent payments received
        - Timestamp for each activity
    - **Upcoming Appointments:**
        - Next 3 scheduled job sites
        - Date, time, client name

        - Quick navigation to job site details

BILLING MODULE (FACTURATION)

6. **QuotesListPage (Devis)**

    - **Filter Tabs:**
        - All quotes
        - Accepted quotes
        - Pending quotes
        - Expired quotes
    - **List View:**
        - Quote number
        - Client name
        - Date created
        - Amount (HT/TTC)
        - Status badge (pending/accepted/refused/expired)
        - Actions menu (view, edit, duplicate, delete, convert to invoice)
    - **Search Bar:**
        - Search by quote number, client name, date
        - Advanced filters (date range, amount range, status)
    - **Floating Action Button:**
        - Create new quote
    - **Batch Actions:**
        - Select multiple quotes
        - Bulk send emails
        - Bulk export PDF
        - Bulk delete
7. **QuoteFormPage (Create/Edit Devis)**

    - **Client Selection Section:**
        - Dropdown client selector
        - Quick add new client button
        - Client details display (address, phone)
    - **Quote Details:**
        - Quote number (auto-generated with custom prefix)
        - Quote date (default today, editable)
        - Validity period (default 30 days, editable)
        - Job site address (if different from client)
        - Reference/description field
    - **Line Items Section:**
        - Add product/service button

        - Product search (from personal catalog)
        - For each line:
            - Product/service description
            - Quantity input
            - Unit price
            - Discount % (optional)
            - VAT rate dropdown (20%, 10%, 5.5%, 0%)
            - Subtotal (auto-calculated)
        - Drag to reorder lines
        - Delete line button
    - **Cost Calculation Section:**
        - Subtotal HT (before tax)
        - Total discount
        - VAT breakdown by rate
        - Total TTC (with tax)
        - Deposit amount (optional, % or fixed)
    - **Terms & Conditions:**
        - Template selector (saved templates)
        - Rich text editor
        - Default payment terms
        - Default validity period
    - **Footer Actions:**
        - Save as draft
        - Preview PDF
        - Send to client (email)
        - Send for signature
        - Generate invoice from quote
        - Delete quote

8. **InvoicesListPage (Factures)**

    - **Filter Tabs:**
        - All invoices
        - Paid
        - Pending payment
        - Overdue
        - Partially paid
    - **List View:**
        - Invoice number
        - Client name
        - Invoice date
        - Due date
        - Amount TTC
        - Amount paid
        - Balance due

        - Payment status badge
        - Actions menu (view, edit, duplicate, delete, record payment, send reminder)
    - **Search & Filters:**
        - Search by invoice number, client
        - Date range filter
        - Amount range filter
        - Payment status filter
    - **Floating Action Button:**
        - Create new invoice
    - **Statistics Summary:**
        - Total invoiced this month
        - Total collected this month
        - Outstanding balance
        - Average payment delay

9. **InvoiceFormPage (Create/Edit Facture)**

    - **Similar structure to QuoteFormPage with additions:**
        - Invoice type selector (standard, deposit, progress, final, credit note)
        - Related quote selector (if converting)
        - Payment terms (net 30, net 60, custom)
        - Payment methods accepted (bank transfer, check, cash, card)
        - Bank details section (IBAN, BIC)
        - Legal mentions (SIRET, RCS, VAT number)
    - **For Deposit Invoices (Acompte):**
        - Deposit percentage selector
        - Reference to original invoice
        - Remaining balance display
    - **For Progress Invoices (Situation):**
        - Progress milestone selector
        - Previous invoiced amounts
        - Current progress %
        - Remaining to invoice
    - **For Credit Notes (Avoirs):**
        - Original invoice reference
        - Reason for credit
        - Negative amounts
    - **Electronic Invoice Toggle:**
        - Enable e-invoice (Factur-X format)
        - Chorus Pro submission toggle
        - Compliance indicator (2026 requirement)

10. **InvoiceDetailPage**

    - Full invoice preview

- PDF viewer
- Payment history timeline
- Send email button
- Record payment button
- Download PDF
- Print button
- Edit button
- Duplicate button
- Delete button (with confirmation)

11. **PaymentsListPage (Paiements)**

    - **List View:**
        - Payment date
        - Invoice reference
        - Client name
        - Amount paid
        - Payment method
        - Status (received, pending, bounced)
        - Bank reconciliation status
    - **Quick Actions:**
        - Record new payment
        - Mark as reconciled
        - Export to accounting software
    - **Filters:**
        - Date range
        - Payment method
        - Client
        - Reconciliation status

12. **PaymentFormPage (Record Payment)**

    - Invoice selector
    - Payment date
    - Amount paid
    - Payment method dropdown
    - Reference/transaction ID
    - Notes field
    - Attach receipt/proof (image upload)
    - Save button

13. **EstimatesListPage (Devis Gratuits / Free Quotes)**

    - Similar to QuotesListPage
    - No conversion to invoice
    - Used for preliminary pricing
    - Quick copy to formal quote

PRODUCT CATALOGS MODULE

14. **CatalogsOverviewPage**
    - **Catalog Types:**
        - Personal catalog tile (user's custom products)
        - Point P catalog tile (scraped data)
        - Cedeo catalog tile (scraped data)
        - Favorites tile (starred products)
    - **Each tile shows:**
        - Product count
        - Last updated date
        - Quick search within catalog
        - Direct navigation
15. **PersonalCatalogPage (Mon Catalogue)**
    - **List View:**
        - Product reference
        - Product description
        - Purchase price HT
        - Selling price HT
        - Margin % (calculated)
        - Category/tag badges
        - Stock quantity (optional)
        - Favorite star icon
        - Actions (edit, delete, duplicate)
    - **Toolbar:**
        - Search bar
        - Add new product button
        - Import Excel button
        - Export catalog button
        - Category filter dropdown
    - **Bulk Actions:**
        - Apply global margin
        - Update multiple prices
        - Delete selected
        - Export selected
16. **ProductFormPage (Add/Edit Product)**
    - Product reference/SKU
    - Product name/description
    - Category dropdown (multi-level categories)

    - Supplier name
    - Supplier reference
    - Purchase price HT
    - Margin % (auto-calculates selling price)
    - OR Selling price HT (auto-calculates margin)
    - VAT rate selector
    - Unit of measure (unit, meter, kg, box, etc.)
    - Stock quantity (optional)
    - Reorder point (optional)
    - Product image upload (multiple images)
    - Notes/specifications field
    - Favorite checkbox
    - Tags input (multi-select)
    - Active/inactive toggle
17. **PointPCatalogPage**

    - **Web-scraped catalog from Point P:**
        - Product categories tree
        - Product search
        - Product cards with:
            - Image
            - Name
            - Reference
            - Current price
            - Add to personal catalog button
            - Add to quote directly button
        - Last sync date display
        - Manual refresh button
18. **CedeoCatalogPage**

    - Similar structure to Point P
    - Cedeo-specific categories
    - Scraped pricing data
    - Quick add to personal catalog
    - Direct quote integration
19. **FavoriteProductsPage**

    - Quick access to starred products
    - All products marked as favorites across catalogs
    - Quick add to quote/invoice
    - Remove from favorites option
20. **CategoryManagementPage**

    - Create custom categories

- Multi-level category tree
- Assign products to categories
- Reorder categories
- Merge categories
- Delete categories (move products first)

PURCHASES MODULE (MES ACHATS)

21. **PurchasesListPage**

    - **List View:**
        - Purchase date
        - Supplier name
        - Invoice/receipt number
        - Amount HT/TTC
        - Payment status
        - Associated job site (optional)
        - Scan thumbnail (if OCR'd)
        - Actions (view, edit, delete, attach to job)
    - **Filters:**
        - Date range
        - Supplier
        - Payment status
        - Job site
        - Amount range
    - **Summary Cards:**
        - Total purchases this month
        - Total unpaid to suppliers
        - Most frequent supplier
    - **Floating Action Button:**
        - Scan supplier invoice (OCR)
        - Manual entry
22. **PurchaseFormPage (Manual Entry)**

    - Supplier selection/add new
    - Invoice number
    - Invoice date
    - Due date
    - Line items section:
        - Product description
        - Quantity
        - Unit price

        - VAT rate
        - Total per line
    - Subtotal HT
    - VAT breakdown
    - Total TTC
    - Payment method
    - Payment status
    - Attach scanned invoice image
    - Link to job site (optional)
    - Notes field
23. **OCRScanPage (Scan Facture Fournisseur)**
    - **Camera Interface:**
        - Take photo button
        - Upload from gallery button
        - Live camera preview
        - Guidelines overlay
    - **Processing View:**
        - Loading spinner with progress
        - "Analyzing invoice..." message
        - Cancel button
    - **Review/Edit View:**
        - Original invoice image preview
        - Extracted data fields (editable):
            - Supplier name
            - Invoice number
            - Date
            - Line items (products, qty, prices)
            - Total amounts
        - Confidence score per field
        - Mark for review (low confidence fields)
        - Add to personal catalog checkboxes
        - Apply margin % to generate client quote
        - Save to purchases button
        - Generate quote from scan button
24. **ScanHistoryPage**
    - List of all scanned invoices
    - Thumbnail previews
    - Scan date
    - Extraction status (success, failed, pending review)
    - Re-scan button
    - Delete scan button
    - View original image

- View extracted data

JOB SITES MODULE (MES CHANTIERS)

25. **JobSitesListPage**

    - **List/Card View Toggle:**
        - Job site name/reference
        - Client name
        - Address
        - Start date
        - Status (planned, in progress, paused, completed)
        - Progress % bar
        - Estimated value vs. actual cost
        - Actions (view, edit, delete)
    - **Filters:**
        - Status
        - Date range
        - Client
        - Profitability (profitable, break-even, loss)
    - **Sort Options:**
        - By start date
        - By progress %
        - By profitability
    - **Floating Action Button:**
        - Create new job site
26. **JobSiteFormPage (Create/Edit Chantier)**

    - Job site name
    - Reference number (auto or manual)
    - Client selector
    - Job site address (if different from client)
    - Contact person on-site
    - Phone number
    - Project description
    - Start date
    - Estimated end date
    - Actual end date (when completed)
    - Status selector
    - Related quote/contract reference
    - Estimated budget
    - Notes

27. **JobSiteDetailPage**

- **Overview Tab:**
  - Job details summary
  - Client info
  - Dates timeline
  - Status
  - Edit button
- **Financial Tab:**
  - Quoted amount
  - Invoiced amount (progress)
  - Purchases for this job
  - Labor costs
  - Profit/loss calculation
  - Margin %
- **Tasks/Progress Tab:**
  - Task checklist (create, complete, delete)
  - Progress percentage slider
  - Milestone markers
  - Time tracking entries
- **Photos Tab:**
  - Before photos section
  - Progress photos (with dates)
  - After photos section
  - Upload photos (multiple)
  - Gallery view
  - Delete photos
  - Download all button
- **Documents Tab:**
  - Related quotes
  - Related invoices
  - Supplier invoices for this job
  - Contracts/permits
  - Upload documents
- **Notes Tab:**
  - Chronological notes feed
  - Add new note with timestamp
  - Edit/delete notes
  - Rich text formatting
- **Time Tracking Tab:**
  - Timer (start/stop/pause)
  - Manual time entry
  - Time log (date, duration, description, worker)
  - Total hours worked

            - Labor cost calculation

28. **JobSiteCalendarPage**
    - Monthly/weekly calendar view
    - Color-coded job sites by status
    - Drag-and-drop to reschedule
    - Quick view job details on click
    - Add new appointment
    - Filter by client/status
    - Export calendar (ICS)
    - Sync with Google Calendar (future)

CLIENTS MODULE (MES CLIENTS)

29. **ClientsListPage**
    - **List View:**
        - Client name
        - Email
        - Phone
        - Total invoiced
        - Outstanding balance
        - Last interaction date
        - Tags/categories
        - Favorite star
        - Actions (view, edit, delete)
    - **Search Bar:**
        - Search by name, email, phone, address
    - **Filters:**
        - Tags
        - Outstanding balance (yes/no)
        - Recent clients
        - Favorites
    - **Sort Options:**
        - Alphabetical
        - By total invoiced (highest first)
        - By last contact date
    - **Floating Action Button:**
        - Add new client
    - **Bulk Actions:**
        - Export selected clients (CSV)
        - Send bulk email

        - Apply tags
        - Delete selected

30. **ClientFormPage (Add/Edit Client)**

    - **Personal Info:**
        - Client type (individual/company)
        - Salutation (M./Mme/Company)
        - First name
        - Last name / Company name
        - Email (required)
        - Phone (required)
        - Mobile phone
    - **Address:**
        - Street address
        - Postal code
        - City
        - Country (default: France)
        - Address type (billing, job site, both)
    - **Billing Address (if different):**
        - Separate billing address fields
    - **Company Details (if company):**
        - SIRET
        - VAT number
        - Company registration
    - **Additional Info:**
        - Default payment terms
        - Default discount %
        - Tags (multi-select)
        - Favorite checkbox
        - Notes (internal, not visible to client)
    - **Save Button**
    - **Cancel Button**

31. **ClientDetailPage**

    - **Profile Tab:**
        - Client summary card
        - Contact details
        - Edit button
        - Delete button
        - Quick actions (call, email, message)
    - **History Tab:**
        - Timeline of all interactions
        - Quotes created
        - Invoices issued

        - Payments received
        - Job sites for this client
        - Notes added
        - Chronological sort
        - Filter by document type
    - **Financial Tab:**
        - Total invoiced (all-time)
        - Total paid
        - Outstanding balance
        - Average invoice amount
        - Average payment delay
        - Payment behavior score
        - Profitability (total revenue vs. costs)
    - **Documents Tab:**
        - All quotes for this client
        - All invoices
        - All contracts
        - Upload custom documents
    - **Communications Tab:**
        - Email history
        - SMS history (if implemented)
        - Call logs (if implemented)
        - Send new email
        - Schedule follow-up
    - **Notes Tab:**
        - Internal notes
        - Add new note
        - Edit/delete notes
        - Timestamp and author

32. **ImportClientsPage**

    - **Upload CSV/Excel:**
        - File upload dropzone
        - Supported formats info
        - Download template button
    - **Field Mapping:**
        - Preview first 5 rows
        - Map CSV columns to client fields
        - Validation warnings
        - Duplicate detection
    - **Import Preview:**
        - Show what will be imported
        - Highlight errors/warnings
        - Option to skip invalid rows

        - Confirm import button
    - **Import Results:**
        - Success count
        - Failed rows with reasons
        - Download error report
        - View imported clients

COMPANY MANAGEMENT MODULE (MON ENTREPRISE)

33. **CompanyProfilePage**

    - **Company Identity:**
        - Company name (editable)
        - Logo upload
        - SIRET number
        - VAT number (intra-community)
        - RCS registration
        - Company type (sole proprietorship, SARL, etc.)
        - Activity code (APE/NAF)
    - **Contact Information:**
        - Business address
        - Phone
        - Email
        - Website
        - Social media links
    - **Legal Information:**
        - Share capital
        - Legal representative
        - Insurance policy number
        - Decennial insurance
        - Professional qualifications
    - **Banking Details:**
        - Bank name
        - IBAN
        - BIC/SWIFT
        - Account holder name
    - **Save Changes Button**
34. **InvoiceSettingsPage**

    - **Numbering:**
        - Invoice prefix (e.g., "FACT-")
        - Quote prefix (e.g., "DEV-")

        - Starting number
        - Reset annually option
        - Number format preview
    - **Default Terms:**
        - Default payment terms (net 30, etc.)
        - Default quote validity (30 days)
        - Late payment interest rate
        - Default discount %
    - **Default Texts:**
        - Quote footer text (terms & conditions)
        - Invoice footer text
        - Payment instructions
        - Legal mentions template
    - **VAT Settings:**
        - VAT liable (yes/no)
        - Default VAT rate
        - Multiple VAT rates (for different product types)
    - **Electronic Invoice:**
        - Enable Factur-X generation
        - Chorus Pro credentials
        - Test mode toggle
35. **DocumentTemplatesPage**

    - **Template Library:**
        - List of saved quote templates
        - List of saved invoice templates
        - Thumbnail previews
        - Template name
        - Last used date
        - Actions (use, edit, duplicate, delete)
    - **Create New Template:**
        - Template name
        - Pre-fill products/services
        - Pre-fill terms & conditions
        - Save button
36. **TemplateFormPage (Plumbing-Specific Templates)**

    - **50+ Pre-built templates:**
        - Bathroom renovation
        - Kitchen plumbing
        - Heating installation
        - Boiler replacement
        - Leak repair
        - Drain cleaning

        - Water heater installation
        - Radiator installation
        - Emergency call-out
        - Annual maintenance
        - Solar water heater
        - Underfloor heating
        - Pipe replacement
        - etc. (all 50+ templates)
    - **For each template:**
        - Template name
        - Category
        - Pre-filled line items with descriptions
        - Default quantities (editable)
        - Default prices (editable)
        - Apply template to new quote button
        - Edit template button
        - Delete template button

37. **EmergencyModeSettingsPage**

    - **Emergency Pricing:**
        - Enable emergency mode
        - Night rate multiplier (e.g., 1.5x)
        - Weekend rate multiplier
        - Holiday rate multiplier
        - Time-based triggers (e.g., after 8 PM)
    - **Emergency Contact:**
        - Emergency phone number
        - SMS notifications toggle
        - Auto-response message
    - **Quick Response Templates:**
        - Pre-filled emergency quote templates
        - Expedited invoice generation
        - Priority job site creation

38. **HydraulicCalculatorPage (Calculateur Tuyaux)**

    - **Input Parameters:**
        - Flow rate (L/min or m^3/h)
        - Pipe length (meters)
        - Height difference (meters)
        - Fluid type (water, etc.)
        - Desired pressure
    - **Calculations:**
        - Recommended pipe diameter
        - Pressure loss calculation

        - Flow velocity
        - Multiple solutions with trade-offs
    - **Results Display:**
        - Visual diagram
        - Technical explanation
        - Add to quote button (with calculated materials)

39. **SupplierComparatorPage**

    - **Product Search:**
        - Enter product name/reference
        - Search across all supplier catalogs
    - **Comparison Table:**
        - Point P price
        - Cedeo price
        - Personal catalog price
        - Stock availability
        - Delivery time
        - Best price highlighting
    - **Add to Cart:**
        - Select supplier
        - Add to purchase order
        - Add to quote

40. **NotificationsSettingsPage**

    - **Email Notifications:**
        - New quote accepted
        - Payment received
        - Payment overdue
        - New client registered
        - Daily summary email
    - **SMS Notifications:**
        - Urgent notifications
        - Phone number
    - **In-App Notifications:**
        - Quote status changes
        - Invoice reminders
        - Job site updates
    - **Frequency Settings:**
        - Real-time
        - Daily digest
        - Weekly digest

41. **UserPreferencesPage**

    - **Language:**

        - French (default)
        - English (future)
    - **Date Format:**
        - DD/MM/YYYY (French)
        - MM/DD/YYYY
    - **Number Format:**
        - Decimal separator (comma/dot)
        - Currency symbol position
    - **Theme:**
        - Light mode
        - Dark mode
        - Auto (system)
    - **Accessibility:**
        - Font size
        - High contrast mode

42. **BackupExportPage**

    - **Data Export:**
        - Export all data (JSON)
        - Export invoices (PDF bulk)
        - Export clients (CSV)
        - Export products (CSV)
        - Export accounting data (CSV)
    - **Date Range Selector:**
        - Custom date range
        - Last month
        - Last quarter
        - Last year
        - All-time
    - **Download Button**
    - **Auto-backup Settings:**
        - Weekly auto-export
        - Monthly auto-export
        - Email backup to myself

USER PROFILE MODULE

43. **UserProfilePage**

    - **Personal Info:**
        - Profile photo upload
        - First name

        - Last name
        - Email (read-only, linked to auth)
        - Phone number
        - Role/title
    - **Account Settings:**
        - Change password button
        - Two-factor authentication (future)
        - Active sessions viewer
        - Delete account (with confirmation)
    - **Subscription:**
        - Current plan (Free/Pro)
        - Usage stats (quotes this month)
        - Upgrade button (if Free)
        - Billing history
        - Payment method
    - **Support:**
        - Help center link
        - Contact support button
        - Feature request form

44. **ChangePasswordPage**

    - Current password input
    - New password input
    - Confirm new password input
    - Password strength indicator
    - Submit button
    - Success confirmation

45. **SubscriptionManagementPage (Future)**

    - **Plan Comparison:**
        - Free tier features
        - Pro tier features
        - Pricing display
    - **Current Plan:**
        - Plan name
        - Monthly cost
        - Next billing date
        - Usage limits
        - Change plan button
        - Cancel subscription
    - **Billing History:**
        - Past invoices
        - Download invoices
    - **Payment Method:**

        - Credit card info (masked)
        - Update payment method
        - Add backup payment method

ADDITIONAL UTILITY PAGES

46. **HelpCenterPage**
    - **FAQ Sections:**
        - Getting started
        - Creating quotes
        - Managing invoices
        - OCR scanning guide
        - Electronic invoicing
        - Troubleshooting
    - **Video Tutorials:**
        - Embedded tutorial videos
        - Step-by-step guides with screenshots
    - **Search Bar:**
        - Search help articles
47. **OnboardingWizardPages (First Login)**
    - **Welcome Screen:**
        - App overview
        - Key features highlight
        - Get started button
    - **Step 1: Company Setup:**
        - Quick company profile form
        - Logo upload
        - SIRET entry
    - **Step 2: Catalog Import:**
        - Option to import products from Excel
        - Skip option
    - **Step 3: First Quote Creation:**
        - Quick tutorial
        - Create sample quote
    - **Step 4: Complete:**
        - Success message
        - Go to dashboard button
48. **ErrorPages**
    - **404 Not Found:**

        - Friendly message
        - Home button
        - Search functionality
    - **500 Server Error:**
        - Error message
        - Retry button
        - Contact support
    - **No Internet:**
        - Offline mode indicator
        - Retry connection
        - View cached data

49. **LoadingPage/SplashScreen**

    - App logo
    - Loading animation
    - App version number
    - "PlombiPro" branding

🔧 BACKEND - ALL FUNCTIONALITIES & LOGIC

DATABASE SCHEMA (SUPABASE)

1. profiles Table

- id (uuid, PK, FK to auth.users)
- email (text)
- first_name (text)
- last_name (text)
- company_name (text)
- siret (text)
- phone (text)
- address (text)
- postal_code (text)
- city (text)
- country (text, default: 'France')
- vat_number (text)
- logo_url (text)
- iban (text)
- bic (text)
- subscription_plan (text, default: 'free')
- subscription_status (text)
- trial_end_date (timestamp)

- created_at (timestamp)
- updated_at (timestamp)

2. clients Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- client_type (text: 'individual'/'company')
- salutation (text)
- first_name (text)
- last_name (text)
- company_name (text)
- email (text, required)
- phone (text, required)
- mobile_phone (text)
- address (text)
- postal_code (text)
- city (text)
- country (text)
- billing_address (text)
- billing_postal_code (text)
- billing_city (text)
- siret (text)
- vat_number (text)
- default_payment_terms (int, days)
- default_discount (decimal)
- tags (array of text)
- is_favorite (boolean)
- notes (text)
- total_invoiced (decimal, computed)
- outstanding_balance (decimal, computed)
- created_at (timestamp)
- updated_at (timestamp)

3. products Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- reference (text)
- name (text, required)
- description (text)
- category (text)
- supplier_name (text)

- supplier_reference (text)
- purchase_price_ht (decimal)
- margin_percentage (decimal)
- selling_price_ht (decimal)
- vat_rate (decimal, default: 20.0)
- unit (text, default: 'unit')
- stock_quantity (int)
- reorder_point (int)
- image_urls (array of text)
- notes (text)
- is_favorite (boolean)
- is_active (boolean, default: true)
- tags (array of text)
- source (text: 'personal'/'pointp'/'cedeo')
- last_used (timestamp)
- times_used (int, default: 0)
- created_at (timestamp)
- updated_at (timestamp)

4. quotes Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- client_id (uuid, FK to clients)
- quote_number (text, unique, auto-generated)
- quote_date (date, default: today)
- validity_days (int, default: 30)
- expiry_date (date, computed)
- status (text: 'draft'/'sent'/'accepted'/'refused'/'expired')
- job_site_address (text)
- reference_description (text)
- line_items (jsonb)

```
/* Structure:
[
  {
    product_id: uuid,
    description: text,
    quantity: decimal,
    unit_price_ht: decimal,
    discount_percentage: decimal,
    vat_rate: decimal,
    total_ht: decimal
  }
]
```

*/
- subtotal_ht (decimal)
- total_discount (decimal)
- total_vat (decimal)
- total_ttc (decimal)
- deposit_percentage (decimal)
- deposit_amount (decimal)
- terms_conditions (text)
- notes (text)
- pdf_url (text)
- signature_url (text)
- signed_at (timestamp)
- sent_at (timestamp)
- accepted_at (timestamp)
- converted_to_invoice_id (uuid, FK to invoices)
- created_at (timestamp)
- updated_at (timestamp)

5. invoices Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- client_id (uuid, FK to clients)
- related_quote_id (uuid, FK to quotes, nullable)
- invoice_number (text, unique, auto-generated)
- invoice_type (text: 'standard'/'deposit'/'progress'/'final'/'credit_note')
- invoice_date (date, default: today)
- due_date (date)
- payment_terms (text)
- payment_methods_accepted (array of text)
- job_site_address (text)
- reference_description (text)
- line_items (jsonb, same structure as quotes)
- subtotal_ht (decimal)
- total_discount (decimal)
- total_vat (decimal)
- total_ttc (decimal)
- amount_paid (decimal, default: 0)
- balance_due (decimal, computed)
- payment_status (text: 'unpaid'/'partially_paid'/'paid'/'overdue')
- terms_conditions (text)
- legal_mentions (text)
- notes (text)
- pdf_url (text)

- facturx_xml_url (text)
- is_electronic_invoice (boolean, default: false)
- chorus_pro_status (text)
- chorus_pro_submitted_at (timestamp)
- sent_at (timestamp)
- paid_at (timestamp)
- reminder_sent_count (int, default: 0)
- last_reminder_sent (timestamp)
- created_at (timestamp)
- updated_at (timestamp)

6. payments Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- invoice_id (uuid, FK to invoices)
- payment_date (date)
- amount (decimal)
- payment_method (text)
- transaction_reference (text)
- stripe_payment_id (text)
- notes (text)
- receipt_url (text)
- is_reconciled (boolean, default: false)
- created_at (timestamp)

7. scans Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- scan_type (text: 'supplier_invoice'/'receipt'/'other')
- original_image_url (text)
- scan_date (timestamp, default: now)
- extraction_status (text: 'pending'/'processing'/'success'/'failed'/'needs_review')
- extracted_data (jsonb)

```
  /* Structure:
  {
    supplier_name: text,
    invoice_number: text,
    invoice_date: date,
    line_items: [{
      description: text,
      quantity: decimal,
```

```
      unit_price: decimal,
      total: decimal
    }],
    subtotal: decimal,
    vat: decimal,
    total: decimal,
    confidence_scores: {
      supplier_name: decimal,
      invoice_number: decimal,
      ...
    }
  }
  */
```

- reviewed (boolean, default: false)
- converted_to_purchase (boolean, default: false)
- purchase_id (uuid, nullable)
- generated_quote_id (uuid, FK to quotes, nullable)
- created_at (timestamp)

8. templates Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- template_name (text, required)
- template_type (text: 'quote'/'invoice')
- category (text)
- line_items (jsonb, same structure)
- terms_conditions (text)
- is_system_template (boolean, default: false)
- times_used (int, default: 0)
- last_used (timestamp)
- created_at (timestamp)
- updated_at (timestamp)

9. purchases Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- supplier_name (text)
- invoice_number (text)
- invoice_date (date)
- due_date (date)
- line_items (jsonb)

- subtotal_ht (decimal)
- total_vat (decimal)
- total_ttc (decimal)
- payment_status (text: 'unpaid'/'paid')
- payment_method (text)
- job_site_id (uuid, FK to job_sites, nullable)
- scan_id (uuid, FK to scans, nullable)
- invoice_image_url (text)
- notes (text)
- created_at (timestamp)
- updated_at (timestamp)

10. job_sites Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- client_id (uuid, FK to clients)
- job_name (text, required)
- reference_number (text)
- address (text)
- contact_person (text)
- contact_phone (text)
- description (text)
- start_date (date)
- estimated_end_date (date)
- actual_end_date (date)
- status (text: 'planned'/'in_progress'/'paused'/'completed'/'cancelled')
- progress_percentage (int, default: 0)
- related_quote_id (uuid, FK to quotes, nullable)
- estimated_budget (decimal)
- actual_cost (decimal, computed)
- profit_margin (decimal, computed)
- notes (text)
- created_at (timestamp)
- updated_at (timestamp)

11. job_site_photos Table

- id (uuid, PK)
- job_site_id (uuid, FK to job_sites)
- photo_url (text)
- photo_type (text: 'before'/'progress'/'after')
- caption (text)

- uploaded_at (timestamp)

12. job_site_tasks Table

- id (uuid, PK)
- job_site_id (uuid, FK to job_sites)
- task_description (text)
- is_completed (boolean, default: false)
- completed_at (timestamp)
- created_at (timestamp)

13. job_site_time_logs Table

- id (uuid, PK)
- job_site_id (uuid, FK to job_sites)
- user_id (uuid, FK to profiles)
- log_date (date)
- hours_worked (decimal)
- description (text)
- hourly_rate (decimal)
- labor_cost (decimal, computed)
- created_at (timestamp)

14. job_site_notes Table

- id (uuid, PK)
- job_site_id (uuid, FK to job_sites)
- user_id (uuid, FK to profiles)
- note_text (text)
- created_at (timestamp)
- updated_at (timestamp)

15. categories Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- category_name (text, required)
- parent_category_id (uuid, FK to categories, nullable)
- order_index (int)
- created_at (timestamp)

16. notifications Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- notification_type (text)
- title (text)
- message (text)
- link_url (text)
- is_read (boolean, default: false)
- created_at (timestamp)

17. settings Table

- id (uuid, PK)
- user_id (uuid, FK to profiles, unique)
- invoice_prefix (text, default: 'FACT-')
- quote_prefix (text, default: 'DEV-')
- invoice_starting_number (int, default: 1)
- quote_starting_number (int, default: 1)
- reset_numbering_annually (boolean, default: false)
- default_payment_terms_days (int, default: 30)
- default_quote_validity_days (int, default: 30)
- default_vat_rate (decimal, default: 20.0)
- late_payment_interest_rate (decimal)
- default_quote_footer (text)
- default_invoice_footer (text)
- enable_facturx (boolean, default: false)
- chorus_pro_enabled (boolean, default: false)
- chorus_pro_credentials (jsonb, encrypted)
- email_notifications (jsonb)
- sms_notifications (jsonb)
- theme (text, default: 'light')
- language (text, default: 'fr')
- created_at (timestamp)
- updated_at (timestamp)

18. stripe_subscriptions Table

- id (uuid, PK)
- user_id (uuid, FK to profiles)
- stripe_customer_id (text)
- stripe_subscription_id (text)
- plan_id (text)

- status (text)
- current_period_start (timestamp)
- current_period_end (timestamp)
- cancel_at_period_end (boolean)
- created_at (timestamp)
- updated_at (timestamp)

ROW LEVEL SECURITY (RLS) POLICIES

For all tables (except auth.users):

- **SELECT:** Users can only see their own data (`user_id = auth.uid()`)
- **INSERT:** Users can only insert with their own `user_id`
- **UPDATE:** Users can only update their own data
- **DELETE:** Users can only delete their own data

Special RLS for clients:

- Allow users to reference clients they own when creating quotes/invoices

Special RLS for products:

- Allow read access to system templates (where `user_id IS NULL`)

DATABASE FUNCTIONS & TRIGGERS

1. Auto-create Profile on Signup

```
CREATE FUNCTION public.handle_new_user()
RETURNS trigger AS $$
BEGIN
  INSERT INTO public.profiles (id, email, created_at, updated_at)
  VALUES (NEW.id, NEW.email, NOW(), NOW());
  RETURN NEW;
END;
$$ LANGUAGE plpgsql SECURITY DEFINER;

CREATE TRIGGER on_auth_user_created
  AFTER INSERT ON auth.users
  FOR EACH ROW EXECUTE FUNCTION public.handle_new_user();
```

2. Auto-update `updated_at` Timestamp

```
CREATE FUNCTION update_modified_column()
RETURNS TRIGGER AS $$
BEGIN
  NEW.updated_at = NOW();
  RETURN NEW;
END;
$$ LANGUAGE plpgsql;

-- Apply to all tables:
CREATE TRIGGER update_profiles_modtime BEFORE UPDATE ON profiles
  FOR EACH ROW EXECUTE FUNCTION update_modified_column();
-- Repeat for clients, products, quotes, invoices, etc.
```

3. Auto-calculate Quote/Invoice Totals

```
CREATE FUNCTION calculate_quote_totals()
RETURNS TRIGGER AS $$
DECLARE
  item jsonb;
  subtotal decimal := 0;
  vat_amount decimal := 0;
BEGIN
  -- Loop through line_items to calculate subtotal
  FOR item IN SELECT * FROM jsonb_array_elements(NEW.line_items)
  LOOP
    subtotal := subtotal + (item->>'total_ht')::decimal;
    vat_amount := vat_amount + ((item->>'total_ht')::decimal * (item->>'vat_rate')::decimal / 100);
  END LOOP;

  NEW.subtotal_ht := subtotal;
  NEW.total_vat := vat_amount;
  NEW.total_ttc := subtotal + vat_amount;
  NEW.expiry_date := NEW.quote_date + (NEW.validity_days || ' days')::interval;

  RETURN NEW;
END;
$$ LANGUAGE plpgsql;

CREATE TRIGGER calculate_quote_totals_trigger
  BEFORE INSERT OR UPDATE ON quotes
  FOR EACH ROW EXECUTE FUNCTION calculate_quote_totals();
```

4. Auto-calculate Invoice Balance

```
CREATE FUNCTION calculate_invoice_balance()
RETURNS TRIGGER AS $$
BEGIN
  NEW.balance_due := NEW.total_ttc - COALESCE(NEW.amount_paid, 0);

  IF NEW.balance_due <= 0 THEN
    NEW.payment_status := 'paid';
    NEW.paid_at := NOW();
  ELSIF NEW.amount_paid > 0 THEN
    NEW.payment_status := 'partially_paid';
  ELSIF NEW.due_date < CURRENT_DATE THEN
    NEW.payment_status := 'overdue';
  ELSE
    NEW.payment_status := 'unpaid';
  END IF;

  RETURN NEW;
END;
$$ LANGUAGE plpgsql;

CREATE TRIGGER calculate_invoice_balance_trigger
  BEFORE INSERT OR UPDATE ON invoices
  FOR EACH ROW EXECUTE FUNCTION calculate_invoice_balance();
```

5. Auto-update Quote Status on Expiry

```
-- Scheduled Cloud Function (runs daily) to mark expired quotes
```

6. Update Product Usage Stats

```
CREATE FUNCTION update_product_usage()
RETURNS TRIGGER AS $$
DECLARE
  item jsonb;
BEGIN
  FOR item IN SELECT * FROM jsonb_array_elements(NEW.line_items)
  LOOP
    IF item->>'product_id' IS NOT NULL THEN
      UPDATE products
      SET times_used = times_used + 1,
          last_used = NOW()
```

```sql
    WHERE id = (item->>'product_id')::uuid;
  END IF;
 END LOOP;
 RETURN NEW;
END;
$$ LANGUAGE plpgsql;

CREATE TRIGGER update_product_usage_quotes
 AFTER INSERT ON quotes
 FOR EACH ROW EXECUTE FUNCTION update_product_usage();
```

CUSTOM FLUTTER ACTIONS (DART CODE IN FLUTTERFLOW)

1. Parse Excel Catalog Import

```dart
// Reads Excel file, parses rows, returns List<Product>
// Uses: excel package
// Handles: multiple sheets, header detection, validation
```

2. OCR Invoice Scanner

```dart
// Calls Google Vision API
// Extracts: supplier name, invoice number, date, line items
// Returns: Map with extracted data + confidence scores
// Uses: http, google_ml_kit, or cloud function call
```

3. Generate PDF Quote/Invoice

```dart
// Uses: pdf package
// Creates PDF from quote/invoice data
// Includes: logo, company info, line items table, totals, signature
// Returns: PDF file bytes or saves to Supabase Storage
```

4. Calculate Margin & Pricing

```dart
// Input: purchase price, margin %
// Output: selling price
// Or reverse: selling price → margin %
```

5. Signature Capture & Save

```
// Uses: signature package
// Captures signature on canvas
// Converts to PNG
// Uploads to Supabase Storage
// Returns: signature URL
```

6. Hydraulic Diameter Calculator

```
// Physics calculations for pipe sizing
// Input: flow rate, length, pressure, fluid properties
// Output: recommended diameter, pressure loss, velocity
// Uses: Darcy-Weisbach equation
```

7. Export to CSV

```
// Converts Supabase query results to CSV
// Uses: csv package
// Handles: date formatting, currency formatting, encoding
```

8. Stripe Payment Intent

```
// Calls Stripe API to create payment intent
// Returns: client secret for Stripe Elements
```

9. Send Email (via Cloud Function)

```
// Triggers Cloud Function to send email
// Passes: recipient, subject, body, PDF attachment URL
```

10. Batch Update Products (Apply Global Margin)

```
// Updates multiple products at once
// Recalculates selling prices based on new margin
```

GOOGLE CLOUD FUNCTIONS (PYTHON)

1. OCR Processing Function

```
# Triggered by: HTTP request from app
```

```
# Uses: Google Vision API
# Input: image URL from Supabase Storage
# Process:
#   - Download image
#   - Call Vision API (TEXT_DETECTION)
#   - Parse invoice structure with regex
#   - Extract: supplier, number, date, items, amounts
#   - Calculate confidence scores
# Output: JSON with extracted data
# Store: Update scans table in Supabase
```

2. Web Scraper for Point P Catalog

```
# Scheduled: Weekly (Cloud Scheduler)
# Uses: BeautifulSoup, Selenium (if needed for JS)
# Process:
#   - Navigate Point P website
#   - Extract product categories
#   - For each product:
#     - Name, reference, price, image URL
#   - Store in products table (source='pointp')
# Error handling: retry logic, log failures
```

3. Web Scraper for Cedeo Catalog

```
# Similar to Point P scraper
# Adapted for Cedeo website structure
```

4. Factur-X Generator (XML + PDF)

```
# Triggered by: Invoice creation (when e-invoice enabled)
# Uses: lxml for XML, reportlab or PyPDF2
# Process:
#   - Fetch invoice data from Supabase
#   - Generate EN16931 compliant XML
#   - Generate PDF invoice
#   - Embed XML in PDF (Factur-X format)
#   - Upload to Supabase Storage
# Output: Factur-X PDF URL
```

5. Chorus Pro API Integration

```
# Triggered by: User submits e-invoice
# Uses: requests library
# Process:
#   - Authenticate with Chorus Pro
#   - Submit Factur-X invoice
#   - Poll for status
#   - Update invoice record with submission status
# Error handling: retry on failure, log errors
```

6. Payment Reminder Scheduler

```
# Scheduled: Daily (Cloud Scheduler)
# Process:
#   - Query overdue invoices (due_date < today, payment_status != 'paid')
#   - For each overdue invoice:
#     - Check if reminder already sent recently
#     - Generate reminder email
#     - Call send email function
#     - Update invoice.last_reminder_sent and reminder_sent_count
```

7. Send Email Function

```
# Triggered by: HTTP request from app or other functions
# Uses: SendGrid API or SMTP
# Input: recipient email, subject, HTML body, attachments (PDF URLs)
# Process:
#   - Download PDF attachments from Supabase Storage
#   - Compose email with SendGrid
#   - Send email
# Log: success/failure in Supabase notifications table
```

8. Stripe Webhook Handler

```
# Triggered by: Stripe webhook events
# Events:
#   - payment_intent.succeeded
#   - invoice.paid
#   - customer.subscription.updated
#   - customer.subscription.deleted
# Process:
#   - Verify webhook signature
#   - Parse event
```

```
#   - Update stripe_subscriptions table
#   - Update profiles.subscription_status
#   - Send confirmation email
```

9. Quote Expiry Checker

```
# Scheduled: Daily (Cloud Scheduler)
# Process:
#   - Query quotes where expiry_date < today AND status = 'sent'
#   - Update status to 'expired'
#   - Optionally notify user
```

10. Generate Usage Statistics Report

```
# Scheduled: Weekly or monthly
# Process:
#   - Query aggregate data (total revenue, invoice count, etc.)
#   - Generate PDF report
#   - Email to user
```

STRIPE PAYMENT INTEGRATION

Subscription Plans:

- **Free Plan:**
  - 5 quotes/invoices per month
  - Basic features
  - 1 user
- **Pro Plan (19.90€/month, launch promo: 9.90€/month for 3 months):**
  - Unlimited quotes/invoices
  - OCR scanning
  - Electronic invoicing
  - Web scraping catalogs
  - Priority support

Payment Flow:

1. User clicks "Upgrade to Pro" in app
2. FlutterFlow redirects to Stripe Checkout (hosted page)
3. User enters payment details
4. Stripe processes payment

5. Stripe webhook fires `customer.subscription.created`
6. Cloud Function updates `profiles.subscription_plan = 'pro'`
7. User redirected back to app with success message

Stripe Dashboard:

- Subscription management
- Billing history
- Invoice downloads
- Cancel subscription

OCR GOOGLE VISION API INTEGRATION

Setup:

1. Enable Google Cloud Vision API
2. Create service account with Vision API permissions
3. Generate JSON key file
4. Store credentials securely (Cloud Function environment variables)

Flow:

1. User takes photo or uploads image → stored in Supabase Storage
2. FlutterFlow calls Cloud Function with image URL
3. Cloud Function:
    - Downloads image from Supabase
    - Calls Vision API: `client.text_detection(image)`
    - Gets OCR text response
    - Parses text with regex/NLP:
        - Find supplier name (top of invoice)
        - Find invoice number (pattern: `N°`, `Facture`, etc.)
        - Find date (regex for date formats)
        - Find line items table:
            - Product descriptions
            - Quantities
            - Unit prices
            - Totals
        - Find subtotal, VAT, total TTC
    - Calculate confidence scores (based on Vision API's text confidence)
    - Structure data as JSON
    - Update `scans` table in Supabase with extracted data
4. FlutterFlow displays extracted data for user review/edit

5. User can save to `purchases` or generate quote

Error Handling:

- If confidence < 70%, flag for manual review
- If key fields missing, prompt user to enter manually
- Log failures for debugging

Cost:

- ~1.50$/1000 images
- Practically free for small-scale use

🔗 THIRD-PARTY INTEGRATIONS

1. Supabase (PostgreSQL + Storage + Auth)

- Database hosting
- File storage (PDFs, images, signatures)
- Authentication (email/password, OAuth future)
- Row Level Security
- Realtime subscriptions (optional for live updates)

2. Stripe

- Payment processing
- Subscription management
- Invoicing (Stripe generates invoices for subscriptions)
- Webhooks for real-time updates

3. Google Cloud Platform

- Cloud Vision API (OCR)
- Cloud Functions (Python serverless)
- Cloud Scheduler (cron jobs)
- Cloud Storage (for function dependencies)

4. SendGrid (or SMTP)

- Transactional emails (quotes, invoices, reminders)
- Email templates
- Tracking (open rates, click rates)

5. Twilio (Future - SMS Notifications)

- SMS reminders
- Emergency call-out notifications
- Two-factor authentication

6. Google Calendar API (Future)

- Sync job site appointments
- Two-way sync

7. Point P & Cedeo Websites

- Web scraping (no official API)
- Catalog data extraction

📱 MOBILE & PWA FEATURES

Native Mobile App (iOS & Android):

- Built with FlutterFlow (generates native Flutter code)
- Publish to:
  - Apple App Store
  - Google Play Store

Key Mobile Features:

- Camera access for OCR scanning
- Photo gallery for job site photos
- Push notifications (Firebase Cloud Messaging)
- Offline mode (cache data, queue uploads)
- GPS for job site locations (future)
- Biometric authentication (Face ID, fingerprint)

Progressive Web App (PWA):

- Installable on desktop/mobile browsers
- Works offline (service worker)
- Fast loading (cached assets)
- Responsive design (desktop, tablet, mobile)

Offline Mode:

- Read-only access to cached data:
  - View recent quotes/invoices
  - View client list

    - View product catalog
- Queue write operations:
    - Create quote → saved locally, uploads when online
    - Upload photo → stored locally, syncs when online
- Sync indicator (online/offline status)
- Auto-sync when connection restored

🔒 SECURITY & COMPLIANCE

1. Authentication & Authorization:

- Email/password authentication (Supabase Auth)
- Secure password hashing (bcrypt)
- Session management (JWT tokens)
- Row Level Security (RLS) in database
- Role-based access control (future for multi-user)

2. Data Privacy (GDPR Compliance):

- User consent for data processing
- Right to access data (export all data)
- Right to delete data (account deletion)
- Data encryption at rest (Supabase default)
- Data encryption in transit (HTTPS/TLS)
- Privacy policy page
- Terms of service page

3. Payment Security:

- PCI DSS compliance (handled by Stripe)
- No credit card data stored in app
- Secure payment flows (Stripe Checkout)

4. French Legal Compliance:

- SIRET number validation
- VAT number validation
- French electronic invoicing (Factur-X, Chorus Pro)
- Legal invoice requirements:
    - Invoice numbering (sequential, no gaps)
    - Mandatory fields (supplier info, client info, dates, amounts, VAT breakdown)
    - Storage for 10 years (digital)

5. Input Validation:

- Email format validation
- Phone number format validation
- SIRET format validation
- Amount/number validation (prevent injection)
- File upload validation (size, type)

6. Rate Limiting:

- API rate limits (Supabase default)
- Login attempt limits (prevent brute force)
- Cloud Function rate limits

🎨 UI/UX DESIGN SPECIFICATIONS

Color Palette:

- **Primary:** Blue (#0066CC or #1E88E5) - trust, professionalism
- **Secondary:** Orange (#FF8C00 or #FF6F00) - energy, urgency (for emergency mode)
- **Success:** Green (#4CAF50)
- **Warning:** Yellow (#FFC107)
- **Error:** Red (#F44336)
- **Background:** White (#FFFFFF) / Light Gray (#F5F5F5)
- **Text:** Dark Gray (#212121) / Medium Gray (#757575)

Typography:

- **Primary Font:** Inter (modern, readable, professional)
- **Headings:** Bold 600-700
- **Body:** Regular 400
- **Sizes:**
  - H1: 32px
  - H2: 24px
  - H3: 20px
  - Body: 16px
  - Small: 14px

Spacing:

- Base unit: 8px
- Small spacing: 8px
- Medium spacing: 16px

- Large spacing: 24px
- XL spacing: 32px

Components:

- **Buttons:**
    - Primary: Blue background, white text, rounded corners (8px)
    - Secondary: White background, blue border, blue text
    - Disabled: Gray background, gray text
    - Floating Action Button (FAB): Circle, blue, white icon
- **Cards:**
    - White background
    - Subtle shadow (elevation 2)
    - Rounded corners (12px)
    - Padding: 16px
- **Forms:**
    - Text inputs: Outlined, rounded corners, 48px height
    - Labels: Above input, 14px, gray
    - Error messages: Below input, red, 12px
    - Required fields: Asterisk (*)
- **Lists:**
    - Alternating row colors (white/light gray) OR card-based
    - Hover effect (slight background change)
    - Actions menu (three-dot icon)
- **Navigation:**
    - Collapsible sidebar (desktop)
    - Hamburger menu (mobile)
    - Bottom navbar (mobile - optional)
    - Breadcrumbs (desktop)

Responsive Breakpoints:

- Mobile: < 600px
- Tablet: 600px - 1024px
- Desktop: > 1024px

Accessibility:

- WCAG 2.1 AA compliance
- Sufficient color contrast (4.5:1 for text)
- Keyboard navigation support
- Screen reader compatible (semantic HTML)
- Focus indicators
- Alt text for images
- Error messages clearly associated with inputs

📦 DEPLOYMENT & HOSTING

FlutterFlow:

- Web hosting: FlutterFlow Web Hosting (or Vercel/Netlify)
- Mobile builds: FlutterFlow Build Service → App stores

Supabase:

- Database: Supabase cloud (PostgreSQL)
- Storage: Supabase Storage (S3-compatible)
- Auth: Supabase Auth

Google Cloud Functions:

- Deploy Python functions to GCP
- Set up Cloud Scheduler for cron jobs
- Configure environment variables (API keys, credentials)

Domain:

- plombifacto.fr (registered with Framer Mini)
- DNS configuration to point to FlutterFlow/Vercel

CI/CD (Future):

- GitHub repository
- Automated testing
- Automated deployments on push

Monitoring:

- Supabase dashboard (database metrics)
- Google Cloud Console (function logs, errors)
- Sentry (error tracking in app - future)
- Google Analytics (user behavior - future)

🧪 TESTING & QA

Manual Testing:

- User flow testing (end-to-end)
- Cross-browser testing (Chrome, Safari, Firefox)
- Mobile device testing (iOS, Android)
- Payment flow testing (Stripe test mode)
- OCR testing (various invoice formats)

Automated Testing (Future):

- Unit tests (Dart functions)
- Integration tests (API calls)
- E2E tests (UI flows)

User Acceptance Testing (UAT):

- Beta testing with real plumbers
- Feedback collection
- Iterate based on feedback

Performance Testing:

- Load testing (Supabase database)
- Function latency monitoring
- App startup time optimization

📈 ANALYTICS & REPORTING

User Analytics (Future):

- Daily active users (DAU)
- Monthly active users (MAU)
- User retention rate
- Feature usage (which features are most used)
- Conversion rate (free → pro)

Business Metrics:

- Total revenue (from subscriptions)
- Monthly recurring revenue (MRR)
- Churn rate
- Customer lifetime value (CLV)
- Customer acquisition cost (CAC)

App Metrics:

- Quotes created per user
- Invoices issued per user
- OCR scans performed
- Average invoice amount
- Payment collection rate

Dashboard (Admin View - Future):

- Charts for above metrics
- Export reports (CSV, PDF)
- Real-time monitoring

🚀 LAUNCH STRATEGY & MARKETING

Pre-Launch:

- Beta testing (50-100 plumbers)
- Landing page with email signup (Framer)
- Social media presence (Facebook groups for plumbers)
- Content marketing (blog posts on plumbing business tips)

Launch Offer:

- Pro plan: 9.90€/month for first 3 months (50% off)
- Lifetime free tier (5 quotes/month)

Post-Launch:

- SEO optimization (keywords: "facturation plombier", "devis plomberie", etc.)
- Google Ads (targeted at French plumbers)
- Facebook Ads (target plumbing business owners)
- Partnerships with supplier stores (Point P, Cedeo)
- Referral program (refer a plumber, get 1 month free)
- Content marketing (case studies, tutorials)

Customer Support:

- In-app help center
- Email support (support@plombifacto.fr)
- FAQ page
- Video tutorials (YouTube)
- Live chat (future)

🔮 FUTURE ENHANCEMENTS (V2+)

1. Multi-User & Team Management:

- Add multiple users per account
- Role-based permissions (admin, employee, accountant)
- Activity logs (who did what)

2. Advanced Accounting:

- Bank account connection (Bridge API, Plaid equivalent)
- Automatic bank reconciliation
- Expense tracking
- Profit & loss statements
- Balance sheet
- Cash flow projections
- Tax calculation (URSSAF auto)

3. CRM Enhancements:

- Email marketing campaigns
- SMS marketing
- Client portal (clients can log in to view invoices)
- Online payment portal (clients pay directly)
- Review/rating system

4. Inventory Management:

- Stock tracking
- Low stock alerts
- Supplier order management
- Barcode scanning for stock-in

5. Advanced Planning:

- Resource scheduling (multiple employees)
- Route optimization (for mobile workers)
- Google Calendar integration (two-way sync)
- Appointment reminders (SMS/email)

6. Community Features:

- Forum for plumbers

- Share tips/tricks
- Product recommendations
- Find subcontractors

7. Marketplace:

- Buy/sell used equipment
- Find jobs (lead generation)
- Supplier deals/discounts

8. White-Label Solution:

- Rebrand app for other trades (electricians, HVAC, etc.)
- Multi-tenancy architecture

9. AI Features:

- AI-powered quote generation (analyze job description → suggest items)
- Predictive maintenance (remind clients of annual checks)
- Chatbot for customer support

10. API for Third-Party Integrations:

- Zapier integration
- QuickBooks/Sage integration
- E-commerce integration (for retail plumbing shops)

📝 DOCUMENTATION DELIVERABLES

For Users:

- User manual (PDF)
- Video tutorials (YouTube)
- In-app help tooltips
- FAQ page
- Onboarding wizard

For Developers:

- Technical architecture document
- Database schema documentation
- API documentation (Cloud Functions)
- Code comments
- Setup guide (local development)

- Deployment guide

For Business:

- Business plan
- Financial projections
- Marketing strategy
- Competitor analysis
- User personas
- Customer journey map

✅ MVP PRIORITY CHECKLIST (10 WEEKS)

Phase 1 - Core (Weeks 1-4):

- ✅ Authentication (login, register, password reset)
- ✅ Dashboard (basic KPIs, recent activity)
- ✅ Clients CRUD
- ✅ Products catalog (personal)
- ✅ Quotes (create, edit, list, PDF)
- ✅ Invoices (create, edit, list, PDF)
- ✅ Basic settings (company profile, invoice settings)

Phase 2 - Payments & OCR (Weeks 5-7):

- ✅ Stripe integration (subscription)
- ✅ Payment tracking (record payments, statuses)
- ✅ OCR scan supplier invoices
- ✅ Generate quote from OCR scan

Phase 3 - Advanced Features (Weeks 8-10):

- ✅ Electronic invoicing (Factur-X)
- ✅ Web scraping (Point P, Cedeo catalogs)
- ✅ Templates (50 plumbing templates)
- ✅ Emergency mode (pricing multipliers)
- ✅ Signature electronic
- ✅ Automated reminders (overdue invoices)
- ✅ Mobile app (iOS & Android builds)
- ✅ Export to CSV
- ✅ Polish UI/UX

Post-MVP (V2):

- Job sites module
- Purchase tracking (beyond OCR)
- Advanced calendar/planning
- Multi-user
- Accounting integrations
- Community forum

🎯 SUCCESS METRICS

Technical:

- App uptime: 99.9%
- Average load time: < 2 seconds
- PDF generation time: < 5 seconds
- OCR accuracy: > 85%
- Bug count: < 5 critical bugs per month

Business:

- User acquisition: 500 users in first 6 months
- Conversion rate (free → pro): 15%
- Monthly recurring revenue: €5,000 by month 6
- Customer retention: 80% after 6 months
- Net Promoter Score (NPS): > 50

User Satisfaction:

- Average app rating: 4.5+ stars
- Support response time: < 24 hours
- Feature requests implemented: 50% of top requests

This comprehensive specification covers **every feature, page, functionality, and technical detail** for the full ideal version of **PlombiPro/PlombiFacto** based on all project conversations. The app is designed to be a complete invoicing and business management solution specifically for French plumbers, with unique differentiators like OCR scanning, web scraping catalogs, and 2026 e-invoice compliance.