# RETAIL INNOVATIONS LTD
## Task 2: User Experience

Input Handling • Error Messages • Formatting • Accessibility

DPDD Occupational Specialism — Set Task

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# 1. Correct Input Handling

All form inputs in the application use appropriate HTML type attributes and JavaScript parsing to ensure data integrity:

## 1.1 HTML Input Types

| Field | Type Attribute | Additional Attributes | Purpose |
|---|---|---|---|
| Email (auth) | type="email" | placeholder="you@example.com" | Browser email validation, mobile keyboard |
| Password | type="password" | placeholder="••••••••" | Masks characters for security |
| Full Name | type="text" | placeholder="Jane Doe" | Free text entry |
| Supabase URL | type="url" | placeholder="https://..." | URL format validation |
| Supabase Key | type="password" | placeholder="eyJhbGci..." | Masks sensitive key |
| Price | type="number" | step="0.01" placeholder="0.00" | Numeric-only input with decimal support |
| Stock Quantity | type="number" | placeholder="0" | Integer-only numeric input |
| Points Required | type="number" | placeholder="500" | Integer numeric input |
| Phone | type="tel" | placeholder="07700 900000" | Phone keyboard on mobile |
| Image URL | type="url" | placeholder="https://..." | URL validation |
| Category | type="text" | placeholder="e.g. Beverages" | Free text for flexibility |
| Loyalty Tier | <select> | 4 predefined options | Constrained choice |
| Order Status | <select> | 5 predefined options | Constrained choice, disabled for non-admin |
| Reward Type | <select> | 4 predefined options | Constrained choice |
| Is Active | type="checkbox" | checked by default | Boolean toggle |

## 1.2 JavaScript Data Parsing

**Prices:** parseFloat(document.getElementById('prodPrice').value) || 0 — Converts string to float, defaults to 0 if NaN or empty.

**Quantities:** parseInt(document.getElementById('prodStock').value) || 0 — Converts to integer, defaults to 0.

**Text fields:** .value.trim() is called on all text inputs (name, email, description, etc.) to remove leading/trailing whitespace.

**Booleans:** .checked property read directly from checkbox elements for is_active and active flags.

**Selects:** .value returns the selected option's value attribute, constrained to predefined options.

# 2. Helpful User Guidance and Error Messages

## 2.1 Toast Notification System

The showToast(message, type) function (app.js line 291) provides a three-level notification system:

| Type | Icon | Colour | CSS Border | Example Messages |
| --- | --- | --- | --- | --- |
| success | ✓ | Green (#3EEBBE) | Left border green | 'Signed in successfully!', 'Product created!', 'Order updated!', 'Customer added!' |
| error | ✗ | Red (#FF5E7A) | Left border red | 'Login failed: Invalid login credentials', 'Passwords do not match.', 'Fill in Name, SKU, and Category.' |
| info | ℹ | Blue (#5BA4F5) | Left border blue | 'Connected to Supabase!', 'Signed out.' |

Each toast auto-dismisses after 3.5 seconds with a slide-out animation. Toasts stack vertically in the top-right corner (position: fixed, top: 20px, right: 20px) with 10px gap between them. The toastSlideIn animation (300ms ease) slides from right, and toastSlideOut (300ms) slides back out.

## 2.2 Placeholder Text

Every input field includes placeholder text showing the expected format or an example value. This provides in-context guidance without requiring separate help text. Examples include: 'you@example.com' for email, 'e.g. Organic Green Tea' for product name, 'e.g. BEV-002' for SKU, and '07700 900000' for phone.

## 2.3 Empty State Messages

When data tables contain no records, a friendly empty state is displayed instead of a blank table:

| Section | Emoji | Message |
| --- | --- | --- |

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| Products | 📦 | No products found |
|---|---|---|
| Customers | 👥 | No customers found |
| Orders | 🧾 | No orders found |
| Rewards | 🎁 | No rewards configured |

These use a centred layout with large emoji (3rem), descriptive text, and dimmed colour styling to clearly communicate that the empty state is intentional rather than a loading error.

## 2.4 Connection Status Indicator

The auth screen includes a real-time connection status indicator (index.html lines 70–74) showing a coloured dot: red when disconnected, green when connected. This immediately communicates whether the Supabase configuration is valid.

# 3. Clear and Consistent Output Formatting

| Data Type | Format | Code | Example Output |
|---|---|---|---|
| Currency | £X.XX | '£' + Number(p.price).toFixed(2) | £12.99 |
| Revenue | £X,XXX.XX | '£' + rev.toLocaleString('en-GB', { minimumFractionDigits: 2 }) | £1,234.56 |
| Dates | DD/MM/YYYY | new Date(o.created_at).toLocaleDateString('en-GB') | 15/01/2025 |
| Loyalty Points | X,XXX pts | c.loyalty_points.toLocaleString() + ' pts' | 1,500 pts |
| Order IDs | 8-char truncation | o.id.slice(0, 8) + '…' | a1b2c3d4… |
| Product Count | X product(s) | products.length + ' product' + (len !== 1 ? 's' : '') | 10 products |

## 3.1 Status Badges

Consistent colour-coded pill badges are used throughout:

| Badge | Background | Text Colour | Used For |
|---|---|---|---|
| Active | rgba(62,235,190,0.12) | #3EEBBE | Product/reward active status |
| Inactive | rgba(255,94,122,0.12) | #FF5E7A | Product/reward inactive |
| Pending | rgba(255,186,66,0.12) | #FFBA42 | Order status |
| Processing | rgba(91,164,245,0.12) | #5BA4F5 | Order status |
| Shipped | rgba(108,99,255,0.12) | #6C63FF | Order status |
| Delivered | rgba(62,235,190,0.12) | #3EEBBE | Order status |
| Cancelled | rgba(255,94,122,0.12) | #FF5E7A | Order status |
| Bronze | rgba(205,127,50,0.15) | #CD7F32 | Loyalty tier |
| Silver | rgba(192,192,192,0.15) | #C0C0C0 | Loyalty tier |
| Gold | rgba(255,215,0,0.15) | #FFD700 | Loyalty tier |
| Platinum | rgba(160,200,255,0.15) | #A0C8FF | Loyalty tier |

# 4. Accessibility and Readable Layout

## 4.1 Semantic HTML

- <header> — Top bar with brand and user info (line 82)
- <nav> — Tab navigation bar (line 100)
- <main> — Primary content area (line 109)
- <section> — Each panel is a section element with descriptive title (lines 112, 165, 201, 240, 281)
- <table>, <thead>, <tbody> — Proper table structure for data display
- <label> — All form inputs have associated label elements with descriptive text
- <button> — All interactive controls are native button elements (not divs)
- lang="en" — Set on the <html> element for screen readers

## 4.2 Colour Contrast

| Element | Foreground | Background | Contrast Ratio | WCAG AA (4.5:1) |
|---|---|---|---|---|
| Body text | #E8ECF1 | #0B0F14 | ~13.2:1 | PASS |
| Muted text | #8A99AF | #0B0F14 | ~5.5:1 | PASS |
| Dim text | #5C6E85 | #0B0F14 | ~3.4:1 | Large text only |
| Accent on dark | #3EEBBE | #0B0F14 | ~10.1:1 | PASS |
| Table header text | #FFFFFF | #1A2230 | ~12.5:1 | PASS |
| Error badge text | #FF5E7A | #0B0F14 | ~5.1:1 | PASS |

## 4.3 Keyboard Accessibility

- Enter key submits auth form (app.js lines 275–284) — keydown listener checks if auth screen is visible and loginForm is displayed
- All buttons are native <button> elements with inherent keyboard focus and Enter/Space activation
- Tab navigation works through all interactive elements in natural document order
- Modal background click dismissal (lines 308–312) does not interfere with keyboard users

## 4.4 Focus Indicators

All focusable form inputs display a visible focus ring on interaction (styles.css line 700):

```
.form-input:focus { outline: none; border-color: var(--color-accent); box-
shadow: 0 0 0 3px var(--color-accent-glow); }
```

The green glow ring (rgba(62, 235, 190, 0.15)) provides a clear visual indicator for keyboard navigation without interfering with the dark theme aesthetics.

## 4.5 Font Sizing and Readability

- Base font size: 16px (html default) — comfortable reading size
- Body text: 0.88rem (~14px) — data table content
- Labels: 0.78rem (~12.5px) uppercase — form field labels
- Minimum text: 0.65rem (~10.4px) — bar chart labels only
- Headings: 2rem section titles, 1.3rem modal titles
- Font stack: DM Sans (body), Playfair Display (headings), JetBrains Mono (data/code)

## 4.6 Image Handling

Product thumbnails use onerror="this.style.display='none'" (app.js line 356) to gracefully hide broken images rather than showing a broken icon. Images are displayed at 42x42px with border-radius and object-fit: cover for consistent appearance.