GA4 Framework Document

DataSlush Analytics Implementation Assessment

➢ Property Configuration

- Property Name: DataSlush Assessment
- Measurement ID: G-W7FZ7NF2Y6
- Data Stream: Web (localhost testing environment)
- Implementation Method: Google Tag Manager
- GTM Container ID: GTM-KCK84XM2

➢ Event Tracking Framework

1. Navigation Click Events

Event Name: nav_click Trigger: User clicks on navigation menu items Parameters:

- section_name (string): Navigation section clicked ("Home", "About", "Services", "Contact")

Implementation:

window.dataLayer.push({

  'event': 'nav_click',

  'section_name': sectionName

});

GTM Configuration:

- Tag Type: Google Analytics: GA4 Event
- Trigger: Custom Event (nav_click)
- Parameters: section_name mapped to {{DLV - section_name}}

2. Scroll Depth Events

Event Name: scroll_depth Trigger: User reaches scroll milestones Parameters:

- scroll_percent (integer): Percentage scrolled (25, 50, 75, 100)

Implementation:

window.dataLayer.push({

  'event': 'scroll_depth',

  'scroll_percent': milestone

});

➢ GTM Configuration:

- Tag Type: Google Analytics: GA4 Event
- Trigger: Custom Event (scroll_depth)
- Parameters: scroll_percent mapped to {{DLV - scroll_percent}}

➢ GTM Container Structure

Variables

1. DLV - section_name
   - Type: Data Layer Variable

- Data Layer Variable Name: section_name
  2. DLV - scroll_percent
    - Type: Data Layer Variable
    - Data Layer Variable Name: scroll_percent

Triggers
  1. Navigation Click
    - Type: Custom Event
    - Event Name: nav_click
  2. Scroll Depth
    - Type: Custom Event
    - Event Name: scroll_depth

Tags
  1. GA4 Configuration
    - Type: Google Tag
    - Tag ID: G-W7FZ7NF2Y6
    - Trigger: Initialization - All Pages
  2. GA4 - Navigation Click
    - Type: Google Analytics: GA4 Event
    - Configuration Tag: GA4 Configuration
    - Event Name: nav_click
    - Parameters: section_name
    - Trigger: Navigation Click
  3. GA4 - Scroll Depth
    - Type: Google Analytics: GA4 Event
    - Configuration Tag: GA4 Configuration
    - Event Name: scroll_depth
    - Parameters: scroll_percent
    - Trigger: Scroll Depth

➢ Data Layer Structure

Navigation Click Event
```
{
  'event': 'nav_click',
  'section_name': 'Home' // or 'About', 'Services', 'Contact'
}
```
Scroll Depth Event
```
{
  'event': 'scroll_depth',
  'scroll_percent': 25 // or 50, 75, 100
}
```

- ➢ Event Deduplication Strategy
  - Scroll Depth
    - Uses milestone tracking object to prevent duplicate events
    - Each milestone (25%, 50%, 75%, 100%) can only fire once per page session
    - Reset on page reload
  - let scrollMilestones = {
  - 25: false,
  - 50: false,
  - 75: false,
  - 100: false
  - };
  - Navigation Clicks
    - No deduplication applied as multiple clicks on same section are valid user behavior
    - Each click generates a separate event
- ➢ Error Handling & Debugging
  - Console Logging
    - Navigation clicks: console.log('Navigation click tracked: ${sectionName}')
    - Scroll milestones: console.log('Scroll milestone reached: ${milestone}%')
  - GTM Preview Mode
    - All tags configured for preview mode testing
    - Debug information available in GTM preview panel
  - GA4 DebugView
    - Real-time event validation available in GA4 DebugView
    - Parameter values visible for troubleshooting
- ➢ Reporting & Visualization
  - Looker Studio Dashboard
    - Data Source: Google Analytics 4 (G- W7FZ7NF2Y6)
    - Navigation Analysis: Table showing section_name breakdown with event counts
    - Scroll Engagement: Bar chart displaying scroll_percent distribution
    - Filters: Event name filters applied for clean data visualization
- ➢ Technical Specifications
  - Browser Compatibility
    - Modern browsers supporting dataLayer API
    - JavaScript ES6+ features used
    - Responsive design considerations
  - Performance Considerations
    - Throttled scroll events (100ms delay) to prevent excessive firing
    - Minimal impact on page load speed
    - Efficient event deduplication logic

- ➢ Testing & Validation
  - Test Scenarios
    1. Navigation clicks on all menu items
    2. Full page scroll from 0% to 100%
    3. Partial scroll scenarios
    4. Multiple session testing
  - Validation Methods
    - Browser console verification
    - GTM preview mode confirmation
    - GA4 DebugView real-time monitoring
    - Looker Studio dashboard validation
- ➢ Data Retention & Privacy
  - Data Collection
    - No personally identifiable information collected
    - Anonymous user interaction tracking
    - Session-based data only
  - Compliance
    - Follows GA4 data collection best practices
    - Respects user privacy settings
    - No sensitive data in custom parameters
- ➢ Implementation Timeline
    1. HTML Structure: Completed
    2. GTM Container Setup: Completed
    3. GA4 Property Configuration: Completed
    4. Event Implementation: Completed
    5. Testing & Validation: Completed
    6. Looker Studio Integration: Completed
- ➢ Known Limitations
    - Custom parameter visibility in Looker Studio may experience processing delays
    - Localhost testing environment limitations
    - Limited test data volume during assessment period