CourseSignal - Product Spec

What We're Building

Revenue attribution analytics for course creators. They install a script, connect Kajabi/Teachable, and see which marketing channels actually drive course sales.

Core value: "YouTube drove $8K in sales, Instagram drove $400" → stop wasting money on Instagram.

User Journeys

Journey 1: New User Onboarding (Must complete in <5 minutes)

Entry: User signs up

Steps:

1. Choose platform (Kajabi, Teachable, or Stripe)
2. Connect via OAuth (Kajabi/Teachable) or API key (Stripe)
3. System syncs last 30 days of purchases automatically
4. Generate tracking script with unique ID
5. User copies script to their course site
6. Land on dashboard showing historical revenue by source

Success state: User sees revenue data from past 30 days attributed to sources (even if partial - some purchases will be "unmatched" since script wasn't installed yet)

Acceptance criteria:

- Takes <5 minutes from signup to seeing first data
- Clear error messages if OAuth fails
- Progress indicators during sync ("Syncing 47 purchases...")
- Script installation instructions specific to their platform

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Journey 2: Daily Dashboard Check

Entry: User logs in

What they see:

1. **Revenue Summary Card**

   - Total revenue (selectable: last 7 days, 30 days, 90 days, all time)
   - Number of students (unique purchasers)
   - Average order value
   - Trend vs previous period

2. **Revenue by Source Table** (the money view)

   - Columns: Source | Visitors | Revenue | Students | Conversion % | Avg Order Value
   - Sortable by any column
   - Click source to drill down

3. **Recent Purchases Feed** (real-time feel)

   - Last 20 purchases with: Amount, Course Name, Source, Time
   - Updates when new purchase webhook arrives

Acceptance criteria:

- Dashboard loads in <2 seconds
- Data accurate within 5 minutes of purchase
- Can export any table to CSV
- Mobile responsive (course creators check on phone)

Journey 3: Platform Connection

Entry: User clicks "Connect Kajabi" (or Teachable/Stripe)

Kajabi Flow:

1. Click "Connect Kajabi"
2. OAuth popup opens → user logs into Kajabi
3. Grants permissions
4. Redirects back, shows "Connected ✓"
5. Webhook auto-registers with Kajabi
6. Background job syncs last 30 days of purchases
7. Shows progress: "Syncing 142 purchases... 45/142 complete"
8. Completion: "✓ 142 purchases synced, 67 matched to visitors"

Teachable Flow:

1. Click "Connect Teachable"

2. Enter API key
3. System validates with test call
4. If valid: "✓ Connected" + webhook registration
5. Background sync starts

Acceptance criteria:

- OAuth flow works on all browsers
- Clear error messages ("Invalid API key" not "Error 401")
- Can disconnect and reconnect
- Shows sync status in real-time

Core Features

Feature 1: Visitor Tracking

What it does: JavaScript snippet tracks visitors across sessions, captures attribution data

Requirements:

- Generate unique visitor ID (persists in localStorage + cookie)
- Capture first-touch attribution (source, medium, campaign, content, landing page)
- Capture last-touch attribution (updated each session)
- Store UTM parameters from URL
- Handle cookieless visitors (fingerprinting fallback)
- <5kb script size
- Non-blocking (async load)

Data captured per session:

- Visitor ID
- Session ID
- Timestamp
- Referrer
- Landing page
- UTM parameters (source, medium, campaign, content, term)
- Device info (for matching if cookies cleared)

Acceptance criteria:

- Script doesn't slow page load
- Works across subdomains
- Persists across browser sessions

- Handles ad blockers gracefully (fails silently)

Feature 2: Purchase Attribution

What it does: When purchase webhook arrives, match it to tracked visitor and attribute revenue

Matching logic (in priority order):

1. Match by email (most reliable)
2. Match by device fingerprint + timing (if email match fails)
3. Create "unmatched" purchase (attribution status: pending)

Attribution models:

- First-touch: Credit to visitor's initial source
- Last-touch: Credit to most recent source before purchase
- Store full journey (all sessions) for future multi-touch models

Acceptance criteria:

- 85% match rate for purchases where script was installed

- Handles multiple devices (same email, different visitor IDs → merge)
- Handles gift purchases (purchaser ≠ recipient)
- Updates real-time when purchase comes in

Feature 3: Platform Integrations

Kajabi:

- OAuth 2.0 flow
- Webhook for: offer.purchased, offer.refunded
- Sync endpoint: Pull last 30 days of purchases on connect
- Extract: offer name, amount, customer email, purchased date
- Handle subscriptions (recurring purchases)

Teachable:

- API key authentication
- Webhook for: order.created, order.refunded
- Sync endpoint: Paginate through orders

- Extract: course name, amount, customer email, order date
- Handle multi-item orders (bundle purchases)

Stripe:

- API key authentication
- Webhook for: payment_intent.succeeded, charge.refunded
- Sync endpoint: Pull payment intents
- Extract: amount, customer email from metadata
- User must add metadata to Stripe checkout (course_name, etc.)

Acceptance criteria:

- Successful OAuth with all required scopes
- Webhooks receive and process within 30 seconds
- Failed webhooks retry 3 times with backoff
- Token refresh works automatically (before expiration)
- Clear status indicator (Connected, Syncing, Error)

Feature 4: Revenue by Source Report

What it shows:

Table with columns:

- **Source** (youtube, google, email, instagram, direct, etc.)
- **Visitors** (unique visitors from this source)
- **Revenue** (total $ attributed to this source)
- **Students** (number of purchases from this source)
- **Conversion %** (students / visitors)
- **Avg Order Value** (revenue / students)
- **Revenue per Visitor** (revenue / visitors)

Interaction:

- Sortable by any column
- Date range filter (7d, 30d, 90d, all time)
- Click source → drill down to see specific campaigns/content
- Export to CSV

Acceptance criteria:

- Accurate math (totals match)
- Updates within 5 minutes of new purchase

- Shows "unmatched revenue" separately (purchases with no attribution)
- Fast (<500ms query time even with 100K events)

Feature 5: User Authentication & Billing

Authentication:

- Email + password signup
- Email verification required
- Password reset flow
- Session management

Billing:

- 14-day free trial (no credit card required)
- Single plan: $99/month
- Stripe Checkout for payment
- Cancel anytime (access until period end)
- Failed payment handling (3 retry attempts, then suspend)

Acceptance criteria:

- Secure password storage
- Email verification works
- Subscription lifecycle handled correctly
- Clear billing status in settings

Data Models (Conceptual)

Users:

- id, email, subscription_status, trial_ends_at, platform_connections

Visitors:

- id, visitor_id, email (if captured), first_touch_data, created_at

Sessions:

- id, visitor_id, source, medium, campaign, referrer, landing_page, timestamp

Purchases:

- id, user_id, visitor_id, email, amount, course_name, platform, first_touch_source, last_touch_source, attribution_status, purchased_at

Platform_Integrations:

- id, user_id, platform, access_token (encrypted), refresh_token (encrypted), webhook_id, status

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Success Metrics

Product:

- Attribution match rate: >85%
- Dashboard load time: <2 seconds
- Script load time: <100ms
- Uptime: >99.5%

Business:

- 30 paying customers in 6 months
- <5% monthly churn
- Trial → paid conversion: >25%

User Behavior:

- User checks dashboard 3+ times per week
- 70% of users install script within 24 hours

- 90% of users successfully connect platform

Technical Constraints

- Must handle 10K events/day per customer without degradation
- Must support cross-domain tracking (course site on different domain than checkout)
- Must be GDPR compliant (allow opt-out, data export, data deletion)
- Must encrypt all API keys and OAuth tokens at rest

- Must verify all webhook signatures (prevent spoofing)

Launch Checklist

Before showing to first customer:

- [ ] Can sign up, verify email, log in
- [ ] Can connect Kajabi via OAuth successfully
- [ ] Can install tracking script and see visitor data
- [ ] Purchase webhook arrives and attributes correctly
- [ ] Dashboard shows accurate revenue by source
- [ ] Can export data to CSV
- [ ] Can manage subscription (cancel, update payment)
- [ ] Error states have clear messages (not raw errors)
- [ ] Mobile responsive
- [ ] Basic security (SQL injection, XSS prevention, rate limiting)

First 10 Beta Customers

Offer: Free for 60 days + personal setup help

In exchange:

- Weekly feedback calls
- Permission to use as case study
- Testimonial if they love it

Goal: Learn what reports they actually use, what features they request, what's confusing

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That's the spec. Build this, get 10 beta users, iterate based on feedback, then charge $99/month.