Project Proposal: HMHF - Custom Donation Platform

Client: Huntsman Mental Health Foundation (HMHF) **Project:** Custom Donation Platform **Date:** December 10, 2024 **Version:** 1.0 **Validity:** 30 days

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Executive Summary

Huntsman Mental Health Foundation (HMHF) seeks to replace their embedded Raiser's Edge NXT donation forms with a **fully customized, high-quality donation experience**, inspired by leading platforms such as St. Jude (https://www.stjude.org/donate/radio-3.html).

Phase 1 Scope

The project includes the development of:

- **Standalone donation platform** (donate.hmhf.org)
- **Embeddable widget** for HMHF WordPress sites
- **Complete integration** with Blackbaud SKY API (Raiser's Edge NXT)
- **Payment processing** via Blackbaud Checkout (BBMS)
- **Synchronization** with ActiveCampaign for marketing automation
- **Advanced tracking** with Google Analytics 4 and Google Tag Manager

Key Project Metrics

Metric	Value
Estimated duration	16 weeks (~4 months)
Total effort	560 hours
Total investment	$25,200 USD
Forms included	2 (General HMHF + YBIB with incentives)

Expected Benefits

1. **Premium user experience** - Modern, responsive, high-conversion form
2. **Full branding control** - Complete customization of the visual experience
3. **Native integration** - Automatic synchronization with Raiser's Edge NXT and ActiveCampaign
4. **Scalability** - Architecture ready to add new forms and campaigns

5. **Advanced analytics** - Detailed tracking of each step in the donation process

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Project Description

Context

HMHF currently uses donation forms embedded directly from Raiser's Edge NXT. While functional, these forms present significant limitations:

- Limited visual customization
- Generic user experience
- Difficulty implementing custom incentive logic
- Limited analytics tracking
- Lack of flexibility for special campaigns

Proposed Solution

Develop a fully customized donation platform that:

1. **Improves the donor experience** with a modern, optimized flow
2. **Maintains integration** with the existing Blackbaud ecosystem
3. **Adds advanced capabilities** such as conditional incentives and detailed tracking
4. **Enables scalability** for future campaigns and forms

Phase 1 Deliverables

A. Standalone Donation Experience (donate.hmhf.org)

Custom frontend with the following features:

Feature	Description
Monthly/One-time Toggle	Visual selector for donation type
Preset amounts	Buttons with suggested amounts + "Other Amount" option
Incentive logic	Conditions to show/hide incentives per campaign
Minimum threshold	$19/month for monthly or $228 for one-time (configurable)
YBIB incentive system	Opt-in toggle, size selection, shipping address
Terms and conditions	US only, shipping delays, etc.
Full branding	HMHF custom colors, fonts, layout

B. Embeddable Donation Widget

JavaScript script (`https://donate.hmhf.org/widget.js`) that:

- Can be added to any HMHF WordPress page
- Supports multiple display modes:
  - **Inline**: Embedded directly on the page
  - **Modal**: Centered popup on screen
  - **Slide-out**: Sliding panel from the side
- Accepts configuration via attributes: `data-campaign="ybib"` , `data-mode="modal"` , etc.

C. Tracking and Analytics

Complete events for GA4 and GTM:

Event	Trigger
`donation_view`	User views the form
`donation_start`	User interacts for the first time
`donation_amount_change`	User changes the amount
`donation_frequency_change`	User changes monthly/one-time
`incentive_viewed`	User views incentive section
`incentive_selected`	User opts to receive incentive
`submit_attempt`	User attempts to submit the form
`donation_success`	Donation processed successfully
`donation_failure`	Processing error

D. GCP Backend Service

Secure API deployed on Cloud Run or Cloud Functions:

- Payment finalization with Blackbaud Merchant Services (BBMS)
- Creation/update of constituents in Raiser's Edge NXT
- Creation of gifts (one-time) and recurring gifts (monthly)
- Integration with ActiveCampaign (upsert contact, tags, custom fields, automations)
- Storage in Firestore (donations, incentives, logs)
- Structured logging with correlation IDs
- Secure credential management via GCP Secret Manager

Required Integrations

1. Raiser's Edge NXT (Blackbaud) via SKY API

API	Use
OAuth 2.0 Authentication	Authentication and token refresh
Constituents API	Create/update donors
Gifts API	Register one-time donations
Recurring Gifts API	Configure monthly donations
BBMS / Payments API	Process tokenized payments

2. Blackbaud Checkout (Payments)

- PCI compliant payment widget embedded in frontend
- Card data tokenization (HMHF never stores sensitive data)
- Flow: Frontend loads widget -> User enters data -> Widget returns token -> Backend completes charge

3. ActiveCampaign

Operation	Description
Upsert Contact	Create or update contact by email
Apply Tags	Apply tags based on donation type and campaign
Update Custom Fields	Update fields: amount, date, campaign, etc.

Trigger Automations	Trigger automated email sequences

4. Google Analytics 4 / GTM

- dataLayer pushes compatible with existing HMHF GTM
- Ecommerce events for conversion tracking
- Custom dimensions for advanced segmentation

Included Forms (Phase 1)

Form	Description	Incentives
General HMHF	General one-time and monthly donation	No
YBIB (Your Brain Is Beautiful)	Specific campaign with incentive logic	Yes (t-shirt)

Security Requirements

Requirement	Implementation
No card storage	Exclusive tokenization via Blackbaud Checkout
Secure credentials	GCP Secret Manager
Encrypted communication	HTTPS only
Access control	CORS restricted to authorized domains
Audit logging	All requests and transactions logged

Estimation Parameters

Developer Information

Parameter	Value
Profile	Senior Fullstack Developer + DevOps
Hourly rate	$45 USD

Weekly Availability

Day	Hours
Monday	4 hours
Tuesday	4 hours
Wednesday	4 hours
Thursday	4 hours
Friday	4 hours
Saturday	8 hours
Sunday	8 hours
Weekly Total	**36 hours**

Base Costs

Concept	Value
Hourly rate	$45 USD
Hours per week	36 hours
Weekly cost	**$1,620 USD**
Monthly cost (4 weeks)	**$6,480 USD**

Recommended Technology Stack

Frontend

Technology	Version	Justification
React	18+	Mature framework with excellent ecosystem. Well-documented hooks and state management. Ideal for complex forms with conditional logic. Large community and long-term support.
TypeScript	5.x	Type safety critical for reducing errors in donation logic and financial data handling. Improves maintainability.
Vite	5.x	Modern build tool, fast in development and production. Better DX than webpack.
Tailwind CSS	3.x	Rapid responsive UI development with consistent design system. Easy branding customization.
React Hook Form	7.x	Efficient form handling with minimal re-rendering. Excellent for complex forms.
Zod	3.x	Type-safe schema validation. Integrates perfectly with React Hook Form and TypeScript.
Framer Motion	10.x	Smooth animations to improve UX. Transitions between form states.

Backend

Technology	Version	Justification
Node.js	20 LTS	Stable runtime with excellent support for REST APIs and asynchronous handling. LTS guarantees long-term support.
Express.js	4.x	Minimalist and flexible framework. Mature middleware ecosystem. Alternative: Fastify for better performance.
TypeScript	5.x	Consistency with frontend. Type safety critical in external API integrations.
Axios	1.x	Robust HTTP client with interceptors for token handling and retry logic.

DevOps and Infrastructure

Technology	Justification
Google Cloud Run	Serverless containers with automatic scaling. Ideal for variable donation loads. Cost-effective pay-per-use.

Cloud Firestore	Flexible NoSQL database. Mature Node.js SDK with efficient queries. Automatic scaling.
GCP Secret Manager	Secure management of OAuth credentials, API keys, and tokens. Automatic rotation.
Cloud Logging	Centralized logging for debugging and auditing. Native integration with Cloud Run.
Cloud Error Reporting	Automatic alerts for critical errors. Intelligent grouping of similar errors.
Cloud Build	Native GCP CI/CD. Direct integration with Cloud Run for automatic deploys.

Integration Complexity Analysis

Service	Complexity	Factors
Blackbaud SKY API	**High**	OAuth 2.0 with refresh tokens, multiple endpoints (Constituents, Gifts, Recurring), specific error handling
Blackbaud Checkout (BBMS)	**High**	PCI compliant widget, tokenization, asynchronous flow, payment state handling
ActiveCampaign API	**Medium**	Well-documented REST API, clear endpoints for contacts/tags/automations
Google Analytics 4 / GTM	**Low-Medium**	Standard dataLayer, custom events, debugging with GTM Preview

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Feature Breakdown

Module 1: Initial Setup and Architecture

Objective: Establish the project's base infrastructure.

Task	Complexity	Hours	Notes
Repository setup (monorepo)	Simple	2	Git, folder structure, .gitignore, linting rules
React + TypeScript + Vite project setup	Simple	3	Initial configuration, base dependencies, aliases
Backend Node.js + TypeScript project setup	Simple	3	Express/Fastify, MVC structure, TS configuration
GCP Project configuration	Simple	2	IAM roles, enabled APIs, billing alerts
Cloud Run setup (staging + production)	Medium	4	Services, networking, environment variables
Firestore setup + security rules	Medium	4	Collections design, indexes, security rules
GCP Secret Manager setup	Simple	2	Initial secrets, access policies, versioning
CI/CD configuration (Cloud Build)	Medium	6	Build, test, automatic deploy, environments
Domain and SSL configuration	Simple	2	donate.hmhf.org, managed certificates
Initial architecture documentation	Simple	2	Diagrams, ADRs, technical decisions

Module 1 Subtotal: 30 hours | **Cost: $1,350**

Module 2: OAuth Authentication and Security (Blackbaud SKY API)

Objective: Implement secure authentication with Blackbaud for API access.

Task	Complexity	Hours	Notes
Application registration in Blackbaud Developer Portal	Simple	2	App registration, redirect URIs, required scopes
OAuth 2.0 Authorization Code Flow implementation	Complex	12	/authorize, /token endpoints, state parameter, PKCE
Automatic refresh token system	Complex	8	Token rotation, expiration handling, background refresh
Secure token storage in Secret Manager	Medium	4	Encryption at rest, versioning, access logging
Authentication middleware for APIs	Medium	4	Request interceptors, token injection, retry on 401
OAuth error handling (token expired, invalid, revoked)	Medium	6	Error classification, recovery flows, user notification
Complete OAuth flow testing	Medium	4	Integration tests, mock server, edge cases

Module 2 Subtotal: 40 hours | **Cost: $1,800**

Module 3: Frontend Donation Experience (donate.hmhf.org)

Objective: Develop the complete user interface for the donation form.

Base Layout and Structure

Task	Complexity	Hours	Notes
Responsive base design (mobile-first)	Medium	8	Breakpoints, grid system, flexbox layouts
Theme system and HMHF branding	Medium	6	CSS variables, colors, fonts, spacing
Reusable UI components	Medium	10	Buttons, inputs, cards, modals, alerts, spinners

Main Donation Form

Task	Complexity	Hours	Notes
Monthly/One-time donation toggle	Medium	4	State management, visual toggle, persistence
Dynamic preset amounts	Medium	4	Configurable amounts, grid layout, selection state
"Other Amount" field with validation	Medium	4	Currency formatting, min/max validation, UX
Minimum threshold logic (monthly vs one-time)	Medium	6	$19/month min, $228 one-time, dynamic validation

Incentive System (YBIB)

Task	Complexity	Hours	Notes

Conditional logic to display incentives	Complex	8	Campaign-based rules engine, amount thresholds
T-shirt opt-in toggle	Simple	2	Checkbox component, state management
T-shirt size selector	Simple	3	Dropdown with S/M/L/XL/XXL options
Conditional shipping address form	Medium	8	Address form, show/hide logic, US validation
Terms and conditions (US only, delays)	Simple	2	Modal/accordion component, checkbox acceptance

Donor Information

Task	Complexity	Hours	Notes
Personal data form	Medium	6	First/last name, email, phone, organization
Real-time field validation	Medium	4	Zod schemas, inline error messages, debouncing
Address autocomplete (Google Places)	Medium	6	Places API integration, address parsing

States and Feedback

Task	Complexity	Hours	Notes
Loading states and skeletons	Simple	3	Skeleton loaders, button loading states
User-friendly error messages	Simple	3	Error boundaries, toast notifications
Confirmation/thank you page	Medium	4	Success state, donation summary, share options
Animations and transitions	Simple	4	Framer Motion, micro-interactions, progress

Module 3 Subtotal: 95 hours | **Cost: $4,275**

Module 4: Blackbaud Checkout Integration (Payments)

Objective: Implement secure payment processing via BBMS.

Task	Complexity	Hours	Notes
Checkout Widget integration in frontend	Complex	12	Script loading, iframe handling, initialization
BBMS credentials configuration	Medium	4	API keys, merchant account, environment config
Card tokenization flow	Complex	10	Token capture, validation, secure handling
Widget event handling (success, error, cancel)	Medium	6	Event listeners, state synchronization
Custom widget styles	Medium	4	CSS overrides where possible, branding
Backend: Payment processing endpoint with token	Complex	12	BBMS API integration, charge creation
Backend: Payment response handling	Medium	6	Success/failure handling, response parsing
Backend: Retry logic for failed payments	Complex	8	Idempotency keys, exponential backoff

Pre-payment amount validation	Medium	4	Server-side validation, fraud prevention
Detailed transaction logging	Medium	4	Audit trail, correlation IDs, PCI compliance

Module 4 Subtotal: 70 hours | **Cost: $3,150**

Module 5: Raiser's Edge NXT Integration (Constituents & Gifts)

Objective: Synchronize donations with Blackbaud CRM.

Constituents API

Task	Complexity	Hours	Notes
Search for existing constituent (by email)	Medium	3	Search endpoint, duplicate detection, matching
Create new constituent	Medium	3	POST /constituents, required fields mapping
Update existing constituent	Medium	2	PATCH /constituents/{id}, merge logic
Constituent address handling	Medium	3	Address types, primary flag, formatting

Gifts API (One-time)

Task	Complexity	Hours	Notes
Create one-time gift	Medium	4	POST /gifts, fund mapping, payment method
Associate gift with constituent	Medium	2	Relationship linking, attribution
Gift splits handling (if applicable)	Complex	3	Multiple funds allocation, percentages

Recurring Gifts API (Monthly)

Task	Complexity	Hours	Notes
Create recurring gift	Complex	6	Schedule configuration, frequency setup
Frequency and date configuration	Medium	3	Monthly schedule, start date, end date
Association with tokenized payment method	Complex	4	BBMS token reference, card on file

Fundraising Hierarchy

Task	Complexity	Hours	Notes
Campaign mapping (General, YBIB)	Medium	2	Campaign ID configuration per form
Fund and appeal mapping	Medium	2	Fund/Appeal IDs, default values

Error Handling

Task	Complexity	Hours	Notes
API error handling (4xx, 5xx)	Medium	3	Error classification, user messages, retry
Rollback on partial failure	Complex	4	Transaction consistency, compensation logic
Critical error logging and alerts	Medium	2	Error reporting integration, severity levels

Module 5 Subtotal: 46 hours | **Cost: $2,070**

Module 6: ActiveCampaign Integration

Objective: Synchronize donors with marketing automation.

Task	Complexity	Hours	Notes
API key and endpoint configuration	Simple	2	Secret Manager storage, base URL config
Search for existing contact	Simple	3	GET /contacts by email, response handling
Contact creation/update (upsert)	Medium	6	POST/PUT /contacts, field mapping
Tag application based on donation type	Medium	6	Tag mapping logic, campaign-specific tags
Custom fields update	Medium	6	Donation amount, date, campaign, frequency
Specific automation trigger	Medium	8	Automation webhook triggers, event data
Error handling and retry logic	Medium	4	Error recovery, rate limiting handling
Synchronization logging	Simple	3	Audit trail, success/failure tracking

Module 6 Subtotal: 38 hours | **Cost: $1,710**

Module 7: Embeddable Donation Widget

Objective: Create embeddable script for WordPress sites.

Widget Architecture

Task	Complexity	Hours	Notes
Script loader design (widget.js)	Complex	10	Script injection, async loading, isolation
Build configuration for widget bundle	Medium	6	Webpack/Vite config, minification, sourcemaps
Shadow DOM for CSS encapsulation	Complex	8	Style isolation, CSS-in-JS considerations

Display Modes

Task	Complexity	Hours	Notes
Inline embed mode	Medium	6	Container injection, sizing, responsiveness
Modal popup mode	Medium	8	Modal component, triggers, backdrop, close
Slide-out panel mode	Medium	8	Slide animation, positioning, z-index

Configuration via Attributes

Task	Complexity	Hours	Notes
Data-attributes parser	Medium	4	data-campaign, data-mode, data-amounts
Campaign preset configuration	Medium	4	Campaign-specific defaults, overrides
Preset amounts configuration	Simple	3	Amount configuration via attributes

Cross-Origin Considerations

Task	Complexity	Hours	Notes

CORS configuration for widget	Medium	4	Allowed origins whitelist
PostMessage communication	Complex	6	Parent-widget communication, security

Testing

Task	Complexity	Hours	Notes
Multi-domain testing	Medium	4	Cross-origin testing, staging environments
WordPress environment testing	Medium	4	Theme compatibility, plugin conflicts
Integration documentation	Simple	3	Integration guide, code examples

Module 7 Subtotal: 78 hours | **Cost: $3,510**

Module 8: Tracking and Analytics (GA4/GTM)

Objective: Implement complete tracking of the donation process.

Task	Complexity	Hours	Notes
Base dataLayer configuration	Medium	4.5	dataLayer initialization, page context
Event: donation_view	Simple	0.5	Page/widget view tracking
Event: donation_start	Simple	0.5	Form interaction start
Event: donation_amount_change	Simple	0.5	Amount selection tracking, value
Event: donation_frequency_change	Simple	0.5	Monthly/one-time toggle tracking
Event: incentive_viewed	Simple	0.5	Incentive section visibility
Event: incentive_selected	Simple	0.5	T-shirt opt-in tracking
Event: submit_attempt	Simple	0.5	Form submission attempt
Event: donation_success	Simple	1	Successful donation with value, transaction ID
Event: donation_failure	Simple	1	Failed donation with error type, code
Ecommerce tracking (purchase event)	Medium	7	GA4 ecommerce format, revenue tracking
Event documentation for GTM	Simple	3	Event reference guide, variable mapping
Event testing in GTM Preview	Medium	4	Debug mode verification, data validation

Module 8 Subtotal: 24 hours | **Cost: $1,080**

Module 9: Firestore Storage

Objective: Design and implement data persistence.

Task	Complexity	Hours	Notes
Collections schema design	Medium	6	donations, incentives, logs, config
Collection: donations	Medium	4	Donation records, indexes, timestamps
Collection: incentives	Medium	4	T-shirt orders, shipping info, status

Collection: transaction_logs	Medium	4	Payment transaction logs, BBMS responses
Collection: error_logs	Medium	4	Error tracking, stack traces, context
Indexes for frequent queries	Simple	3	Composite indexes, query optimization
Detailed security rules	Medium	6	Access control, validation rules
Backup strategy configuration	Simple	3	Export scheduling, retention policy

Module 9 Subtotal: 34 hours | **Cost: $1,530**

Module 10: Logging, Monitoring, and Error Handling

Objective: Implement complete system observability.

Task	Complexity	Hours	Notes
Cloud Logging configuration	Medium	4	Structured logging setup, log levels
Correlation IDs implementation	Medium	6	Request tracing, distributed tracing
Cloud Error Reporting setup	Medium	4	Error aggregation, grouping rules
Critical error alerts	Medium	4	Email/Slack notifications, escalation
Basic metrics dashboard	Medium	6	Cloud Monitoring dashboard, key metrics
Health check endpoints	Simple	2	/health, /ready, dependency checks
Logging of all external API calls	Medium	4	Request/response logging, timing

Module 10 Subtotal: 30 hours | **Cost: $1,350**

Module 11: Specific Forms (Phase 1)

Objective: Configure the two required forms.

General HMHF Donation Form

Task	Complexity	Hours	Notes
General form configuration	Medium	6	No incentives, standard flow, fund mapping
End-to-end general form testing	Medium	4	Full flow testing, edge cases

YBIB Incentive Form

Task	Complexity	Hours	Notes
YBIB form configuration	Medium	8	T-shirt incentive logic, campaign config
Incentive threshold logic	Medium	4	Minimum amount rules, eligibility
Shipping address validation	Medium	4	US-only validation, required fields
End-to-end YBIB form testing	Medium	4	Full flow with incentive, edge cases

Module 11 Subtotal: 30 hours | **Cost: $1,350**

Module 12: Testing and QA

Objective: Ensure system quality and stability.

Task	Complexity	Hours	Notes
Frontend unit tests (Jest/Vitest)	Medium	2.5	Component tests, hooks, utilities
Backend unit tests (Jest)	Medium	2	API endpoint tests, services, helpers
Integration tests (API)	Medium	2.5	Full API flow tests, database
E2E tests (Playwright/Cypress)	Complex	3.5	User journey tests, happy paths, errors
Sandbox payment testing	Medium	1.5	BBMS sandbox testing, card scenarios
RE NXT integration testing (sandbox)	Medium	1.5	SKY API sandbox, constituent/gift flows
ActiveCampaign integration testing	Medium	1	AC test account, contact sync
Cross-browser testing	Medium	1.5	Chrome, Safari, Firefox, Edge
Mobile responsiveness testing	Medium	1	iOS Safari, Android Chrome, tablets
Accessibility testing (WCAG 2.1)	Medium	1	Screen readers, keyboard nav, contrast
Performance testing	Medium	1	Lighthouse, Core Web Vitals, load time
Basic security testing	Medium	1	OWASP checks, input validation, XSS

Module 12 Subtotal: 20 hours | **Cost: $900**

Module 13: Documentation and Delivery

Objective: Document the system and transfer knowledge.

Task	Complexity	Hours	Notes
Technical documentation (README, API docs)	Medium	8	Technical documentation, setup guides
Widget integration guide	Simple	4	WordPress integration guide, examples
Campaign configuration documentation	Simple	3	Campaign setup guide, field mapping
Operations runbook	Medium	6	Operational procedures, incident response
Troubleshooting guide	Medium	4	Common issues resolution, FAQ

Module 13 Subtotal: 25 hours | **Cost: $1,125**

Effort Summary

By Module

#	Module	Hours	Cost	%
1	Initial Setup and Architecture	30	$1,350	5.4%
2	OAuth Authentication (Blackbaud)	40	$1,800	7.1%
3	Frontend Donation Experience	95	$4,275	17.0%

4	Blackbaud Checkout Integration	70	$3,150	12.5%
5	RE NXT Integration (Constituents/Gifts)	46	$2,070	8.2%
6	ActiveCampaign Integration	38	$1,710	6.8%
7	Embeddable Widget	78	$3,510	13.9%
8	GA4/GTM Tracking	24	$1,080	4.3%
9	Firestore Storage	34	$1,530	6.1%
10	Logging and Monitoring	30	$1,350	5.4%
11	Specific Forms	30	$1,350	5.4%
12	Testing and QA	20	$900	3.6%
13	Documentation and Delivery	25	$1,125	4.5%
	TOTAL	**560**	**$25,200**	**100%**

By Work Area

Area	Hours	Cost	% of Total
Frontend Development	173	$7,785	30.9%
Backend Development	116	$5,220	20.7%
Integrations (APIs)	148	$6,660	26.4%
DevOps/Infrastructure	64	$2,880	11.4%
Embeddable Widget	68	$3,060	12.1%
Testing/QA	20	$900	3.6%
Documentation	25	$1,125	4.5%

Proposed Timeline

Distribution by Phases

Phase	Description	Weeks	Hours	Cost
1	Setup and Architecture	1-2	70	$3,150
2	Authentication and Backend Core	3-5	104	$4,680
3	Frontend Donation Experience	6-8	119	$5,355
4	Integrations	9-12	154	$6,930
5	Embeddable Widget	13-14	68	$3,060
6	Testing and QA	15	20	$900
7	Documentation and Delivery	16	25	$1,125
	TOTAL	**16 weeks**	**560**	**$25,200**

Visual Calendar

```
Month 1 (Weeks 1-4)
======================================================================
Week 1:  [################]                                  Setup
Week 2:  [################]                                  Setup
Week 3:              [################]                      Auth/Backend
Week 4:              [################]                      Auth/Backend

Month 2 (Weeks 5-8)
======================================================================
Week 5:              [################]                      Auth/Backend
Week 6:                          [################]          Frontend
Week 7:                          [################]          Frontend
Week 8:                          [################]          Frontend

Month 3 (Weeks 9-12)
======================================================================
Week 9:                                      [################] Integrations
Week 10:                                     [################] Integrations
Week 11:                                     [################] Integrations
Week 12:                                     [################] Integrations

Month 4 (Weeks 13-16)
======================================================================
Week 13:                                                  [####] Widget
Week 14:                                                  [####] Widget
Week 15:                                                      [##] Testing
Week 16:                                                      [##] Delivery
```

Phase Details

Phase 1: Setup and Architecture (Weeks 1-2)

Duration: 2 weeks | **Hours:** 70 | **Cost:** $3,150

Objectives:

- Establish the project's technical infrastructure
- Configure development, staging, and production environments
- Implement CI/CD for automatic deploys

Deliverables:

- [ ] Git repository configured with monorepo structure
- [ ] Frontend React + TypeScript project initialized
- [ ] Backend Node.js + TypeScript project initialized
- [ ] GCP infrastructure configured (Cloud Run, Firestore, Secret Manager)
- [ ] Functional CI/CD pipeline (Cloud Build)
- [ ] Domains and SSL configured (donate.hmhf.org)
- [ ] Initial architecture documentation

Acceptance Criteria:

- Automatic deploy to staging on each push to `develop`
- Automatic deploy to production on each push to `main`

- Firestore accessible from Cloud Run
- HTTPS functional on custom domain

Phase 2: Authentication and Backend Core (Weeks 3-5)

Duration: 3 weeks | **Hours:** 104 | **Cost:** $4,680

Objectives:

- Implement OAuth 2.0 authentication with Blackbaud SKY API
- Establish backend base structure
- Configure logging and monitoring

Deliverables:

- [ ] Complete OAuth 2.0 flow with Blackbaud
- [ ] Automatic refresh token system
- [ ] Tokens stored securely in Secret Manager
- [ ] Backend API with health check endpoints
- [ ] Structured logging with correlation IDs
- [ ] Cloud Error Reporting configured
- [ ] Firestore structure defined and implemented

Acceptance Criteria:

- Successful authentication with Blackbaud in staging
- Tokens refresh automatically before expiration
- Logs visible in Cloud Logging with correlation IDs
- Alerts configured for critical errors

Phase 3: Frontend Donation Experience (Weeks 6-8)

Duration: 3 weeks | **Hours:** 119 | **Cost:** $5,355

Objectives:

- Develop the complete donation form interface
- Implement incentive logic for YBIB campaign
- Create responsive and accessible experience

Deliverables:

- [ ] Complete donation form UI
- [ ] Functional Monthly/One-time toggle
- [ ] Preset amounts system + "Other Amount"
- [ ] YBIB incentive logic (t-shirt)
- [ ] Conditional shipping address form
- [ ] Real-time validations with clear messages
- [ ] Loading states and error handling
- [ ] Confirmation/thank you page
- [ ] Smooth animations and transitions

Acceptance Criteria:

- Form functional on mobile, tablet, and desktop
- Validations work correctly on all fields
- Incentives display only when conditions are met
- UI consistent with HMHF branding

- Meets WCAG 2.1 level AA

Phase 4: Integrations (Weeks 9-12)

Duration: 4 weeks | **Hours:** 154 | **Cost:** $6,930

Objectives:

- Integrate Blackbaud Checkout for payment processing
- Connect with Raiser's Edge NXT for donor management
- Synchronize with ActiveCampaign for marketing
- Implement analytics tracking

Deliverables:

- [ ] Blackbaud Checkout widget integrated and functional
- [ ] Tokenized payment processing
- [ ] Constituents API: search, create, update donors
- [ ] Gifts API: create one-time donations
- [ ] Recurring Gifts API: configure monthly donations
- [ ] ActiveCampaign sync: contacts, tags, custom fields, automations
- [ ] GA4/GTM events implemented and working
- [ ] Complete logging of all transactions

Acceptance Criteria:

- Payments processed successfully in BBMS sandbox
- Donors created/updated correctly in RE NXT
- Donations recorded with correct campaign and fund
- Recurring gifts configured with monthly schedule
- Contacts synchronized in ActiveCampaign with appropriate tags
- All tracking events visible in GTM Preview

Phase 5: Embeddable Widget (Weeks 13-14)

Duration: 2 weeks | **Hours:** 68 | **Cost:** $3,060

Objectives:

- Create embeddable script for WordPress sites
- Implement multiple display modes
- Ensure style isolation and compatibility

Deliverables:

- [ ] Functional and optimized widget.js script
- [ ] Inline embed mode
- [ ] Modal popup mode
- [ ] Slide-out panel mode
- [ ] Configuration via data-attributes
- [ ] Shadow DOM for CSS encapsulation
- [ ] Integration documentation for WordPress

Acceptance Criteria:

- Widget works on HMHF WordPress site
- All three display modes work correctly
- Styles do not interfere with host site

- Campaign configuration works via attributes
- Compatible with popular WordPress themes

Phase 6: Testing and QA (Week 15)

Duration: 1 week | **Hours:** 20 | **Cost:** $900

Objectives:

- Ensure complete system quality and stability
- Identify and fix bugs
- Validate all integrations in sandboxes

Deliverables:

- [ ] Unit test suite (frontend + backend)
- [ ] API integration tests
- [ ] E2E tests of critical flows
- [ ] Complete testing in sandboxes (BBMS, SKY API, AC)
- [ ] Cross-browser testing completed
- [ ] Mobile responsiveness verified
- [ ] Accessibility audit (WCAG 2.1)
- [ ] Performance optimization (Lighthouse score > 90)
- [ ] Basic security review (OWASP)
- [ ] Bug fixes for issues found

Acceptance Criteria:

- Test coverage > 70%
- All E2E tests pass consistently
- No critical or blocking bugs
- Lighthouse Performance > 90
- No critical security vulnerabilities
- WCAG 2.1 level AA accessibility

Phase 7: Documentation and Delivery (Week 16)

Duration: 1 week | **Hours:** 25 | **Cost:** $1,125

Objectives:

- Fully document the system
- Deploy to production and stabilize

Deliverables:

- [ ] Complete technical documentation (README, API docs)
- [ ] Widget integration guide
- [ ] Campaign configuration documentation
- [ ] Operations runbook
- [ ] Troubleshooting guide
- [ ] Production deployment
- [ ] Active post-launch monitoring (2 weeks)

Acceptance Criteria:

- All documentation reviewed and approved
- System running in production without errors

- Normal monitoring metrics
- First real donation processed successfully

Financial Summary

Project Totals

Concept	Value
Total Hours	**560 hours**
Hourly Rate	$45 USD
Total Project Cost	**$25,200 USD**
Estimated Duration	16 weeks (~4 months)

Costs by Phase

Phase	Weeks	Hours	Cost	% of Total
1. Setup and Architecture	1-2	70	$3,150	12.5%
2. Auth and Backend Core	3-5	104	$4,680	18.6%
3. Frontend Experience	6-8	119	$5,355	21.3%
4. Integrations	9-12	154	$6,930	27.5%
5. Embeddable Widget	13-14	68	$3,060	12.1%
6. Testing and QA	15	20	$900	3.6%
7. Documentation and Delivery	16	25	$1,125	4.5%
TOTAL	**16**	**560**	**$25,200**	**100%**

Cost Metrics

Metric	Value
Average cost per week	$1,575 USD
Average cost per month	$6,300 USD
Cost per hour worked	$45 USD

Payment Structure

Three payment options are offered for greater flexibility:

Option A: Payments Based on Hours Worked (Flexible - Recommended)

Pay only for actual hours worked. Monthly hours may vary based on availability and project needs. Maximum flexibility for both parties.

> ***Note:*** *Unlike Options B and C (which have fixed schedules), this option allows variable monthly hours depending on availability. The timeline may adjust accordingly.*

Rate Information:

Concept	Value
Hourly rate	$45 USD
Hours per week	36 hours (estimated)
Weekly cost	$1,620 USD

Estimated Monthly Schedule (based on 36 hrs/week):

Month	Weeks	Hours	Amount	Accumulated
Month 1	1-4 (4 weeks)	144 hrs	$6,480	$6,480
Month 2	5-8 (4 weeks)	144 hrs	$6,480	$12,960
Month 3	9-12 (4 weeks)	144 hrs	$6,480	$19,440
Month 4	13-16 (4 weeks)	128 hrs	$5,760	$25,200
	TOTAL	**560 hrs**		**$25,200**

Advantages of this option:

- **Variable hours:** Monthly dedication can adjust based on availability
- **Pay for actual work:** Only pay for hours effectively worked
- **Detailed tracking:** Weekly time reports with task breakdown
- **Flexible timeline:** Project duration adjusts to actual availability
- **Weekly/bi-weekly billing:** Regular payment cycles based on work done

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Option B: Milestone Payments (Fixed Schedule)

Payments linked to specific project deliverables. Fixed schedule of 36 hours/week.

#	Milestone	%	Amount	Trigger
1	**Initial Deposit**	25%	$6,300	Contract signing
2	**Phase 2 Completed**	25%	$6,300	Auth + Backend Core delivered and approved
3	**Phase 4 Completed**	25%	$6,300	Integrations functional in staging
4	**Final Delivery**	25%	$6,300	Successful go-live and completed delivery
	TOTAL	**100%**	**$25,200**	

Milestone Payment Schedule:

Month	Milestone	Amount	Accumulated
Month 0	Initial deposit	$6,300	$6,300
Month 2	Phase 2 completed	$6,300	$12,600
Month 3	Phase 4 completed	$6,300	$18,900
Month 4	Final delivery	$6,300	$25,200

Advantages of this option:

- Payments linked to concrete deliverables
- Greater control over project progress
- Payments distributed equally across 4 milestones

Option C: Monthly Payment (Fixed Schedule)

Equal monthly payments during the project duration (16 weeks / ~4 months). Fixed schedule of 36 hours/week.

Month	Period	Amount	Accumulated
Month 1	Weeks 1-4	$6,300	$6,300
Month 2	Weeks 5-8	$6,300	$12,600
Month 3	Weeks 9-12	$6,300	$18,900
Month 4	Weeks 13-16	$6,300	$25,200
	TOTAL		**$25,200**

Calculation: $25,200 / 4 months = **$6,300/month**

Advantages of this option:

- Predictable payment flow
- Facilitates financial planning
- Payments distributed uniformly

Option Comparison

Aspect	Option A (Hourly)	Option B (Milestones)	Option C (Monthly)
Schedule	Variable	Fixed (36 hrs/week)	Fixed (36 hrs/week)
Timeline	Flexible	Fixed (16 weeks)	Fixed (16 weeks)
Monthly cost	Based on hours	Based on milestones	Predictable
Linked to deliverables	No	Yes	No
Best for	Flexible projects	Progress control	Administrative simplicity

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Accepted Payment Methods

- Wise or international wire transfer

Payment Notes

1. Payments are in **USD (US dollars)**
2. Payment requested upon completion and delivery of each milestone/period
3. Payment term: **15 days** from milestone delivery
4. Work on the next phase begins upon receiving payment for the previous milestone

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Assumptions and Exclusions

Assumptions

The following assumptions are considered true for this estimate:

Access and Credentials

1. HMHF will provide access to **Blackbaud Developer Portal** before project start
2. **Sandbox environments** for BBMS and SKY API will be available for testing
3. Access to **ActiveCampaign** account with API permissions will be provided
4. Access to HMHF's **Google Tag Manager** will be provided

Assets and Content

5. HMHF will provide complete **branding assets** (logos, hex colors, fonts)
6. All **text content** (copy, terms, messages) will be provided by HMHF
7. Required **images** will be provided in web-ready format

Infrastructure

8. **GCP account** will be created/provided by HMHF
9. GCP **infrastructure costs** are HMHF's responsibility
10. HMHF will manage the **domain** donate.hmhf.org and DNS configuration

Communication

11. **Asynchronous** communication via Slack/email, with meetings as per milestone deliveries (optional, at client request)
12. Responses to technical questions within **48 business hours**
13. HMHF stakeholder availability for milestone **approvals**

Technical

14. Visual design will be based on **St. Jude reference** with HMHF adaptations
15. **Campaign, fund, and appeal IDs** in RE NXT will be provided by HMHF
16. **ActiveCampaign automations** configuration will be defined by HMHF

Exclusions

The following items are **NOT included** in this estimate:

Design

1. **Professional UI/UX design** - St. Jude reference will be followed, no custom design
2. **Graphic design** - Creation of visual assets, custom icons

Maintenance

3. **Post-launch maintenance** - Only 2 weeks of support included
4. **Hosting and operational costs** - GCP infrastructure is the client's responsibility
5. **Dependency updates** post-delivery

Data

6. **Historical data migration** - Previous donations will not be migrated
7. **Data cleanup** in existing RE NXT or ActiveCampaign

Additional Features

8. **Additional forms** beyond General and YBIB - Quote separately
9. **Native mobile application** - Web responsive only
10. **Multi-language** - English only in Phase 1
11. **Advanced reports/dashboards** - Only basic logging included
12. **Additional integrations** (Salesforce, Mailchimp, etc.) - Quote separately

Security and Compliance

13. **External security audit** - Penetration testing, SOC2 audits
14. **Compliance certifications** - PCI DSS (BBMS tokenization is used)

Third-Party Costs

15. **GCP infrastructure costs** - Compute, storage, networking
16. **License costs** - Blackbaud, ActiveCampaign, Google APIs

17. **Domain and SSL** - Domain registration and renewal

Identified Risks

Risk Matrix

#	Risk	Probability	Impact	Score	Mitigation
R1	Delays in access to Blackbaud APIs	Medium	High	**High**	Request credentials in week 0, prepare mocks for parallel development
R2	Unexpected complexity in Blackbaud Checkout	Medium	High	**High**	Extensive documentation reviewed, contact BB support early, evaluate timeline impact
R3	Requirements changes from HMHF during the project	Medium	Medium	**Medium**	Defined change request process, sprints with reviews, scope freeze per phase
R4	Widget compatibility issues in WordPress	Low	Medium	**Low**	Early testing in real WordPress environment, Shadow DOM for isolation
R5	External API rate limits	Low	Medium	**Low**	Implement caching and retry logic from the start, quota monitoring
R6	Changes in Blackbaud APIs	Low	High	**Medium**	Monitor changelogs, flexible design with abstraction layer
R7	Additional PCI compliance requirements	Low	High	**Medium**	Use exclusively BBMS tokenization, do not store card data
R8	Performance issues with multiple integrations	Medium	Medium	**Medium**	Async architecture, queues if necessary, aggressive caching
R9	Developer availability (illness, etc.)	Low	Medium	**Low**	Proactive communication, flexible calendar, continuous documentation
R10	Sandbox environments not representative of production	Medium	Medium	**Medium**	Validate configuration with BB team, exhaustive pre-go-live testing

Critical Risk Mitigation Plan

R1: Delays in Access to Blackbaud APIs

Trigger: Credentials not obtained by week 2

Actions:

1. Develop with mocks based on API documentation
2. Escalate to HMHF's Blackbaud contact
3. Adjust timeline moving integration to later phase
4. Document blocking dependency

R2: Unexpected Complexity in Blackbaud Checkout

Trigger: Integration takes > 150% of estimated time

Actions:

1. Evaluate timeline impact and communicate to HMHF
2. Contact Blackbaud technical support
3. Look for documented alternative solutions
4. Review widget feature scope

R6: Changes in Blackbaud APIs

Trigger: Blackbaud announces deprecation or breaking changes

Actions:

1. Evaluate impact on existing code
2. Prioritize update according to deprecation timeline
3. Quote additional work if necessary
4. Communicate impact to HMHF immediately

Terms and Conditions

Scope of Work

1. The scope of work is defined in this document
2. Any work outside the scope requires written approval and additional quote
3. The client is responsible for providing feedback in a timely manner

Intellectual Property

1. All developed code will be owned by HMHF upon final payment completion
2. The developer retains the right to use generic patterns and techniques in other projects
3. Open source libraries used maintain their original licenses

Confidentiality

1. The developer will keep all HMHF information confidential
2. Code, credentials, or data will not be shared with third parties
3. Additional NDA available if required by HMHF

Scope Change Policy

Change Type	Hours	Process
Minor	< 8 hours	Email notification, timeline adjustment if necessary
Medium	8-24 hours	Requires written approval, additional quote
Major	> 24 hours	Requires contract addendum, re-estimation

Change Request Process

1. HMHF sends change request in writing (email)
2. Developer evaluates impact on hours and timeline
3. Change quote presented within 48 hours
4. HMHF approves or rejects in writing
5. If approved, timeline is adjusted and additional charges apply

Warranty and Support

Concept	Detail
Included support	2 weeks post-launch for critical bugs
Critical bug definition	Core functionality doesn't work, donations don't process

Response time	24 hours for critical bugs, 48 hours for others
Extended support	Available at $45/hour after warranty period
Maintenance contract	Available, quote separately

Cancellation

1. Either party may cancel with 14 days written notice
2. Work completed to date of cancellation will be charged
3. Deposits are non-refundable after the corresponding phase begins
4. Code and documentation will be delivered for paid work

Limitation of Liability

1. The developer's maximum liability is limited to the total amount paid
2. The developer is not responsible for indirect or consequential losses
3. The developer is not responsible for third-party service failures (Blackbaud, GCP, etc.)

Governing Law

- This agreement is governed by applicable laws according to the client's jurisdiction
- Any dispute will first be resolved through good faith negotiation

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Next Steps

To Proceed with the Project

1. **Proposal Review**
    - HMHF reviews this estimate document
    - Raise questions or request clarifications
    - Confirm that the scope reflects requirements
2. **Negotiation and Adjustments** (if applicable)
    - Adjust scope, timeline, or budget as needed
    - Document any agreed changes
3. **Contract Signing**
    - Prepare formal contract based on this proposal
    - Sign terms and conditions agreement
    - Sign NDA if required
4. **Deposit Payment**
    - Deposit payment request (25% = $6,300)
    - Payment processing
5. **Kickoff Meeting**
    - Project start meeting
    - Expectations and communication alignment
    - Contact and channel definition
    - Timeline and milestone review
6. **Access Provision**
    - Blackbaud Developer Portal
    - GCP Project
    - ActiveCampaign API

- Google Tag Manager
- Domain DNS

7. **Phase 1 Start**
    - Repository setup
    - Infrastructure configuration
    - Development begins

Contact Information

For questions about this estimate or to proceed with the project:

Developer:

- Available for clarification call
- Email responses within 24 business hours

Appendices

Appendix A: Glossary of Terms

Term	Definition
BBMS	Blackbaud Merchant Services - Payment processing system
SKY API	Blackbaud API for accessing RE NXT and other products
RE NXT	Raiser's Edge NXT - Blackbaud CRM for fundraising
Constituent	Donor/contact record in RE NXT
Gift	Donation record in RE NXT
Recurring Gift	Scheduled donation (e.g., monthly)
OAuth 2.0	Authorization protocol for APIs
Token	Temporary credential for API access or payment data
PCI Compliant	Complies with card data security standards
GTM	Google Tag Manager
dataLayer	JavaScript object for passing data to GTM
Shadow DOM	Web technology for encapsulating styles and markup
CORS	Cross-Origin Resource Sharing - Access control between domains
CI/CD	Continuous Integration / Continuous Deployment

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Version 1.0

END OF DOCUMENT