

Catalog

Kidspace

Teenspace

MakerSpace

Fifty · Five +

Digital Library

My Librarian

The Library Foundation

The Friends

Anderson Township Library Association

Volunteers





THE PUBLIC LIBRARY of Cincinnati & Hamilton County

Connecting people with the world of information and ideas.

Data Architecture Project Deliverable 3 Prepared by Anne Sawyer 19 April 2019

Table of Contents

Business Glossary	2
Semantic Association Analysis	
Project Interaction Analysis	7
Data Model Attributes	
Logical Data Model with UML Notation	12

Business Glossary

Concept name	Definition
Branch library	Refers to any one of 41 PLCH physical and publicly-accessible library locations, including the Main Library downtown.
Cardholder	Refers to a customer who has a PLCH Library Card account; cardholders are registered in the ILS database and identified by a unique number (the library card number) which gives them borrowing and other privileges not granted to non-cardholding customers.
Digital item	Refers to Library assets originally existing as rare, historic, or delicate reference-only physical materials, now available to the public as electronic objects accessed via the Digital Library; each item is linked to a corresponding record in the Digital Library catalog by a unique ID. Digital items are not borrowed, but may be browsed and downloaded by the public in accordance with applicable copyright laws.
Donor	Refers to individuals or organizations who voluntarily provide financial and/or material support to the Library itself, The Friends of the Library, or the Library Foundation. Depending on the amount and type of donation, the Library may formally recognize the donor with naming privileges, recognition ceremonies, or other thank you gifts.
Downloadable	Refers to an electronic asset provided by various vendors for customers to download or stream using their library cards. Borrowing privileges vary and are based on user licenses and rules set forth by the providing vendor and/or publisher.
Fee	Refers to a monetary amount assessed for cost-added materials and services, such as social gatherings in library meeting rooms, print jobs, canvas shopping bags, et al. Fees are assessed and paid via the ILS (either to the cardholder or a branch fees account), and must be paid at the point of service.
Fine	Refers to a monetary amount assessed for borrowed items that are renewed late, returned late, lost, or damaged. Borrowed items that remain overdue for more than 45 days are assumed lost, and the fine is converted into a bill for the cost of the item(s). If a cardholder's total fines exceed \$25 for more than 45 days, the account is reported to a Collection agency. Fines apply

	exclusively to cardholders via the ILS, and may be paid in-person or online.
ILL	Refers to physical library assets loaned to cardholders as part of inter-library consortia such as SearchOhio and OhioLink. Temporary catalog records are created for interlibrary loans, which are governed by ILL consortia and the circulation rules of the owning library.
Item	Refers to a Library-owned asset in any physical format; each item is linked to a corresponding record in the catalog by a unique ID and is governed by various borrowing rules. Depending on their status, items may be accessed via the Encore public catalog (OPAC), the staff ILS, or both.
Laptop	Refers to a Library-owned laptop PC that may be borrowed via a Laptop Kiosk at any participating library branch. Once checked out, laptops can be used anywhere in the library for a 4-hour session, after which the customer must return the laptop to the kiosk.
MakerSpace	Refers to a physical space within a branch library that provides creative technology resources such as 3D and vinyl printers, sewing machines, and media conversion stations for use by cardholders. Users may provide their own materials or purchase them from the Library for a fee. Individual stations are reservable online or in-person at the Library.
Meeting room	Refers to a reservable space within a branch library that may be used for library-sponsored events, or by the public for community gatherings. Gatherings that are purely social in nature, such as birthday parties or baby showers, are subject to a one-time charge of \$50, which must be paid before the event.
Program	Refers to a one-time or recurring Library-sponsored event designed to enrich, educate, or entertain members of the public; some events require registration.
Staff	Refers to a person who has been hired to work for PLCH full-time, part-time, or temporarily in a professional, technical, clerical, or service capacity. Staff are at-will, and paid an hourly wage or annual salary, depending on their job description.
Undefined item	Refers to a physical item type with unique characteristics that does not fall into existing item type categories, such as Mobile Hotspots or Sprout Learning Backpacks. These items are part of the ILS/Catalog and may be browsed and borrowed like other items.
Visitor	Refers to anyone whose presence is captured by the people counter device as they enter a branch library. Visitor numbers

are recorded and used for statistical purposes and calculated along with other data points to inform branch decision making.

Semantic Association Analysis

Source	Association	Target
Branch library	offers/is offered by	Program
Branch library	provides/is provided by	Meeting room
Branch library	provides/is provided by	MakerSpace
Branch library	provides/is provided by	Laptop
Donor	supports/is supported	Branch library
Donor	supports/is supported by	Program
Cardholder	uses/is used by	Branch library
Cardholder	borrows/is borrowed by	Item
Cardholder	renews/is renewed by	Item
Cardholder	returns/is returned by	Item
Cardholder	borrows/is borrowed by	ILL
Cardholder	renews/is renewed by	ILL
Cardholder	returns/is returned by	ILL
Cardholder	borrows/is borrowed by	Undefined item
Cardholder	renews/is renewed by	Undefined item
Cardholder	returns/is returned by	Undefined item
Cardholder	accesses/is accessed by	Digital item
Cardholder	downloads/is downloaded by	Downloadable
Cardholder	borrows/is borrowed by	Laptop
Cardholder	returns/is returned by	Laptop

Anne Sawyer DSCI 64010-001 Project Deliverable 3 19 April 2019

Cardholder	registers/is registered by	Program
Cardholder	attends/is attended by	Program
Cardholder	reserves/is reserved by	Meeting room
Cardholder	uses/is used by	Meeting room
Cardholder	reserves/is reserved by	MakerSpace
Cardholder	uses/is used by	MakerSpace
Cardholder	pays/is paid by	Fee
Cardholder	pays/is paid by	Fine
Staff	works in/is worked in by	Branch library
Staff	registers/is registered by	Cardholder
Staff	assists/is assisted by	Cardholder
Staff	registers/is registered by	Donor
Staff	finds/is found by	Item
Staff	finds/is found by	Digital item
Staff	finds/is found by	Downloadable
Staff	finds/is found by	ILL
Staff	finds/is found by	Undefined item
Staff	plans/is planned by	Program
Staff	promotes/is promoted by	Program
Staff	conducts/is conducted by	Program
Staff	maintains/is maintained by	MakerSpace
Staff	manages/is managed by	Meeting room
Staff	assesses/is assessed by	Fee
Staff	cancels/is cancelled by	Fee
Staff	assesses/is assessed by	Fine
Staff	cancels/is cancelled by	Fine
Staff	forgives/is forgiven by	Fine

Staff	assists/is assisted by	Visitor
Visitor	attends/is attended by	Program
Visitor	reserves/is reserved by	Meeting room
Visitor	tours/is toured by	MakerSpace
Visitor	pays/is paid by	Fee
Visitor	uses/is used by	Branch library

Project Interaction Analysis

Process	Activity	Task	Cardholder		Branch library	Visitor	Donor	Item	ILL	Digital item	Downloadable	Laptop	Undefined item	Fee	Fine	MakerSpace	Meeting room	Progra
Acquire materials		Select materials	R	R	R			R		R	R		R			R		
	Acquire materials	Purchase materials		R			CRU	CRU			CRU		CRU					
		Assign bibliographic																
	Catalog and process	records	RU	R	R			RU	CRU	CRU	RU		RU					
	materials	Label materials		R	R		R	R	R				R					
		Fill holds on materials	RU	R	R			RU	RU		RU		RU	R	R			
		Sort materials		R	R			RU	RU				RU					
rovide materials	Deliver materials	Ship materials			R			RU	RU				RU					
Provide materials		Receive/send materials																
		intransit	RU		RU			RU	RU				RU					
		Register cardholder	CRU		U													
	Loan materials	Check materials in/out	RU		RU			RU	RUD		RU		RU		CRU			
		Renew materials	RU	R				U	RU		U		RU		RU			
		Update MARC records		R	RU			RU	RU	RU	RU		RU					
	Maintain collection	Generate maintenance lists		R	R			R	RU				R					
		Weed collection	1		RU			RUD	NO.	D	D		RUD					
		Select a space	1		NO			NOD					NOD				R	
		Select a location	+		R												R	
	Reserve a space	Register customer			R	CRU											U	
		Use a space			RU	RU								CRU			U	
rovide facilities		Verify cardholder			NO	NO								CRO			U	
	Request Curbside	information	R	R										R	R			
	pickup	Check out materials	RU	R	R			RU	RU				RU	R	R			
		Deliver to customer vehicle		R	R													
		Reserve a station	R		R	CRU										RU		
	Provide technology stations	Log into a station	U		U	RU										RU		
		Use a station				RU										R		
		Log into laptop kiosk	R									R						
		Check out laptop	U		U							CRU			R			
rovide technology	Loan laptops	Use laptop										R						
		Return laptop	RU		U							RUD			RU			
		Log into pay-for-print																
	Provide print/scan/fax	station	R	1	R									R				
	services	Insert funds	RU											R				
		Use MFP machine				R								CRUD				
	Develop programs	Plan programs	R	R	R	R	CRU											CRUD
		Publish programs to	ľ															
		calendar			R		-											RU
		Promote programs	RU		RU	RU	R											R
		Register customers	RU		R	CRU												RU
rovide programs and		Conduct programs		R		R												
ervices		Plan services		R	R	R	CRU									CRU	CRU	
		Establish policies and procedures		R	R									CRU		RU	RU	
	Davidon consists	Train staff		7	R									R		R	R	
	Develop services	Promote services	RU		R	RU	R							R		R	R	
		Register customers	RU		R	CRU	-							^				
		Deploy services	R		RU	RU								RU				
		Interview staff	10.5	R		110												
	Acquire staff	Hire staff			U													
rovide		Train staff			R													
nowledgeable staff	Manage staff	Evaluate staff			R													
		Meet with staff			R													
	The state of	Promote staff			R													
		Fromote starr		KU	m.													

Link to source spreadsheet:

https://docs.google.com/spreadsheets/d/1lq36xSjyUvZV1VPNzB2FFAx7jcM -lbLtkJye5B3eAU/edit?usp=s haring

Data Model Attributes

BRANCH LIBRARY

BranchCode: text BranchName: string BranchAddress: string PublicPhone: numeric PublicFax: numeric OfficePhone: numeric ManagerPhone: numeric CLPhone: numeric TLPhone: numeric EmergencyPhone: numeric BranchEmail: alphanumeric LocationInformation: string OperatingHours: alphanumeric Accessibility: symbol Amenities: string Services: string BranchHistory: string StaffingLevel: numeric AssignedStaff: string StaffVacancies: alphanumeric ServiceRegion: numeric Renovated: date

Repaired: date

CARDHOLDER

CardNumber: numeric, unique PIN: alphanumeric, encrypted PatronType: symbol FirstName: string LastName: string Birthdate: date MailingAddress: string OtherAddress: string County: symbol PhoneNumber: numeric EmailAddress: string Guardian: string HomeLibrary: symbol OriginLibrary: symbol PreferredContact: symbol CurrentCheckouts: numeric TotalCheckouts: numeric TotalRenewals: numeric Fines: numeric ServiceHistory: string ProgramHistory: string MeetingroomHistory: string MakerspaceHistory: string

DIGITAL ITEM

ID: numeric, unique Title: string AlternateTitle: string Author: string OriginalDate: date AddedDate: date TimePeriod: date_range OriginalPublisher: string Description: string Keywords: string Location: string Latitude: numeric Longitude: numeric OriginalFormat: string PhysicalDimensions: numeric OriginalType: symbol Collection: string OriginalSource: alphanumeric DigitizedFormat: symbol FileSize: numeric DigitalPublisher: string RightsDescription: string ReproductionInformation: string Note: string

FileName: string

Anne Sawyer DSCI 64010-001 Project Deliverable 3 19 April 2019

DONOR

FirstName: string LastName: string MailingAddress: string PhoneNumber: numeric EmailAddress: string Organization: string DonorType: symbol PreferredContact: symbol Recipient: symbol Reason: string GiftType: string GiftAmount: numeric PaymentMethod: symbol InMemoryOf: string InHonorOf: string UseRestriction: symbol OtherInformation: string DateReceived: date ReceivedBy: string

DOWNLOADABLE

ID: numeric, unique Title: string Author: string Imprint: string CallNumber: alphanumeric Edition: alphanumeric Description: string Note: string SystemDetails: string Access: string Performer: string Summary: string Subject: string Genre: string AddedAuthor: string OtherForm: string AddedTitle: string ISBN: numeric Availability: symbol Order: date

Vendor: string

FEE

CardNumer: numeric, unique FeeAmount: numeric AmountPaid: numeric DatePaid: date DateAssessed: date PaymentLocation: symbol PaymentMethod: symbol FeeType: symbol

FINE

CardNumer: numeric, unique FineAmount: numeric AmountPaid: numeric DatePaid: date DateAssessed: date PaymentLocation: symbol PaymentMethod: symbol Item: string Barcode: numeric, unique Anne Sawyer DSCI 64010-001 Project Deliverable 3 19 April 2019

ILL

Barcode: numeric, unique

Title: string Author: string

PublicationInformation:

string, date

CallNumber: numeric,

symbol

Copies: numeric
Description: string
Format: symbol
Summary: string
Subject: string
Genre/form: symbol
Language: symbol
ISBN: numeric

OwningLibrary: symbol

Status: symbol

CurrentBorrower: numeric OCLCNumber: numeric Permalink: alphanumeric

ITEM

Barcode: numeric, unique

Title: string Author: string

PublicationInformation:

string, date

CallNumber: numeric,

symbol

Copies: numeric
Description: string
Format: symbol
Summary: string
Subject: string
Genre/form: symbol
Language: symbol
ISBN: numeric
Owningl ocation: symbo

OwningLocation: symbol CurrentLocation: symbol

Status: symbol
LastReturned: date
LastBorrower: string
CurrentBorrower: numeric
ProcessingInstructions:

string Order: date Vendor: string

LAPTOP

ID: numeric, unique
Name: string
IPAddress: numeric
OwningLocation: symbol
SessionLength: numeric
CurrentBorrower: numeric
PreviousBorrower: numeric
LastReturned: date

Brand: string Model: string

SerialNumber: numeric

Order: date Vendor: string

MAKERSPACE

StationCode: alphanumeric StationName: string StationLocation: symbol StationType: string StationStatus: symbol MaterialType: string MaterialCost: numeric ReservationTime: numeric ReservationDate: date SessionLength: numeric UserNumber: numeric,

unique

UserPIN: alphanumeric,

encrypted

MEETING ROOM

Capacity: numeric
Equipment: string
Tables: numeric
Chairs: numeric
Dimensions: numeric
RoomLocation: symbol
Accessibility: symbol
Hours: alphanumeric
RoomStatus: symbol
DailyUse: numeric
WeeklyUse: numeric
MonthlyUse: numeric
AnnualUse: numeric

PROGRAM

ProgramName: string ProgramDate: date ProgramTime: numeric ProgramLocation: symbol ProgramType: string ProgramAge: numeric ProgramDescription: string Attendance: numeric Registration: numeric Cancellation: numeric AttendeeFirstName: string AttendeeLastName: string AttendeePhone: numeric AttendeeEmail: alphanumeric ContactPreference: symbol GroupName: string GroupContact: string

VISITOR

HourlyVisits: numeric DailyVisits: numeric WeeklyVisits: numeric MonthlyVisits: numeric AnnualVisits: numeric VisitLocation: symbol VisitTime: numeric STAFF FirstName: string MiddleName: string LastName: string SocialSecurityNumber: numeric Birthdate: date MailingAddress: string PhoneNumber: numeric EmailAddress: alphanumeric EmergencyContact: string EmergencyPhone: numeric HireDate: date PositionType: symbol JobTitle: string JobDescription: string JobLocation: string PayGrade: numeric PayRate: numeric Hours: alphanumeric Supervisor: string DirectReports: string PerformanceManagement:

numeric

Languages: symbol SpecialSkills: string Education: string WorkHistory: string CoreGroupBenefitPlan: symbol VoluntaryBenefitPlan: symbol PTO: numeric SickLeave: numeric

UNDEFINED ITEM

ID: numeric, unique Title: string Imprint: string

CallNumber: alphanumeric

Note: string AddedTitle: string Description: string

Series: string

ProcessingInstructions:

string

Contents: string
Subject: string
AddedAuthor: string
OwningLocation: symbol
CurrentLocation: symbol

Status: symbol

CurrentBorrower: numeric LastBorrower: numeric LastReturned: date Order: date

Vendor: string

Logical Data Model with UML Notation