Case Study – 5
(50 points)

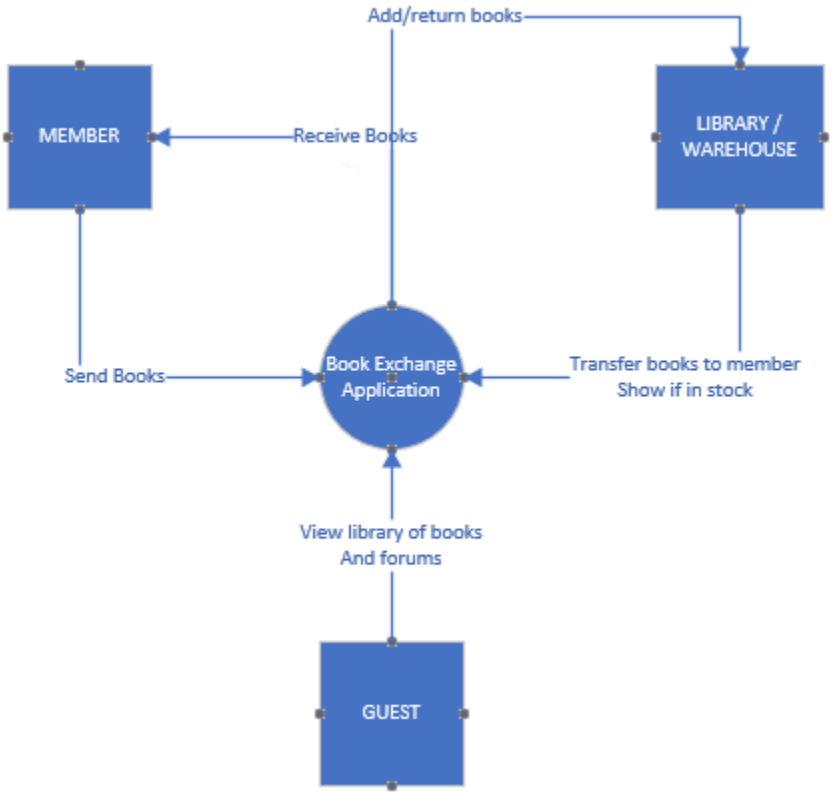
Name: Patrick Woodrum
Clemson ID: C79975506

Submission: Save this Word document with your answers as a PDF file and upload the PDF file to Canvas.

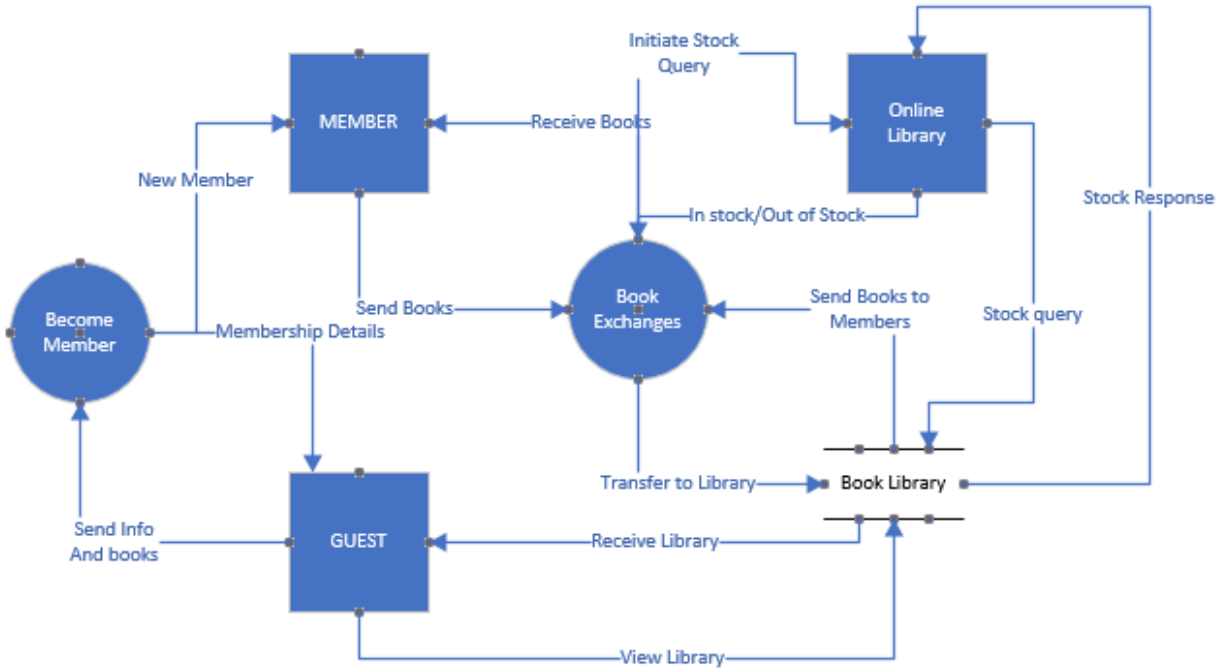
Build a set of Data Flow Diagrams for the Book Exchange Project. Use one of the diagramming tools identified on the "External Tools Page" in Canvas.

- (10 pts) Context Diagram, Fig 5.11 & Fig 5.12
- (10 pts) Level 0 DFD, Fig 5.12 & Fig 5.13
- (10 pts) Level 1 DFDs (2 DFDs worth 5 pts each), Fig 5.14 & Fig 5.15

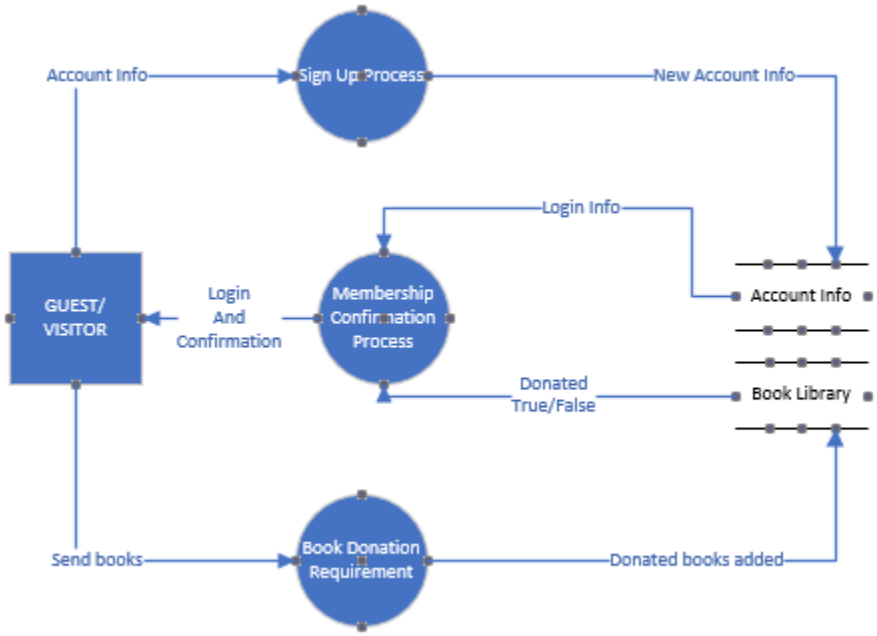
Context Diagram



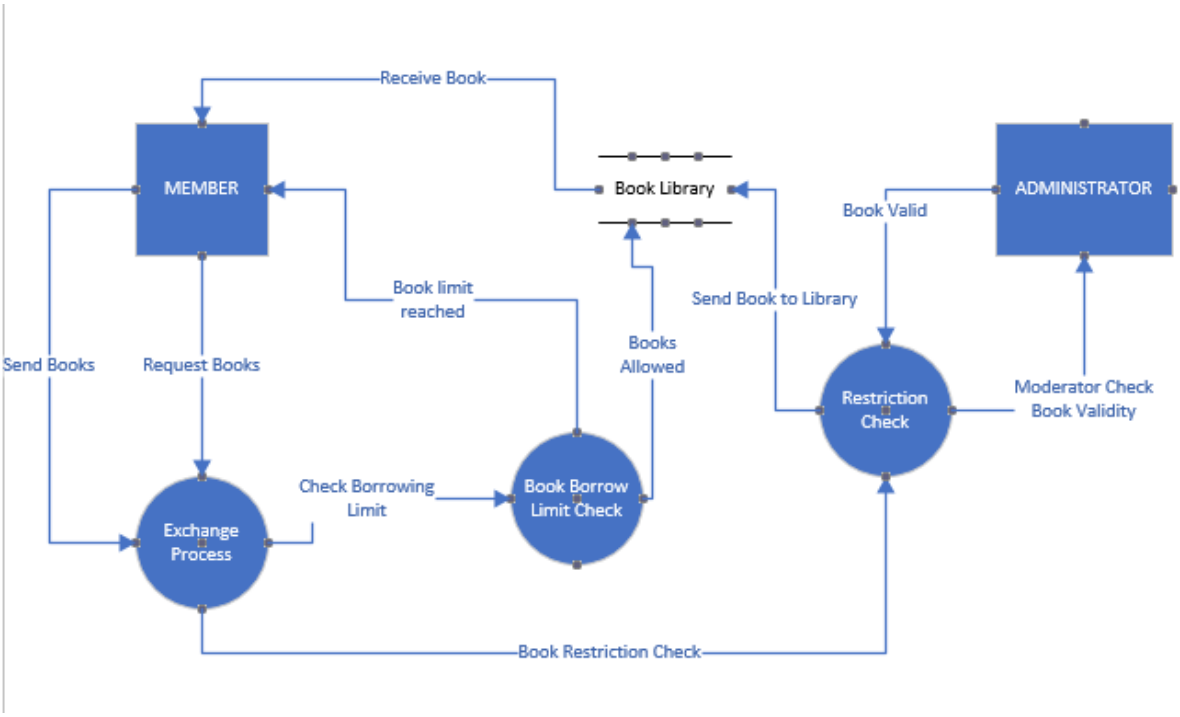
Level 0 DFD



Level 1 DFD (1) For Becoming a Member Process



Level 1 DFD (2) For Book Exchanges Process



(10 pts) Build a Data Dictionary (Section 5.8, pp. 164-167) for the Book Exchange Project using Excel, documenting the Data Elements, the Data Flows, Data Stores, Processes, and External Entities based on your data flow diagrams above.

Data Elements

Data Elements			
Label	Member Status	Book Borrowing Limit	Account Information
Description	Confirmation of whether the user is a member or a guest	Checking if the user has reached the borrowing limit	Holds user account name (among other things)
Alias	Member	Borrow Lim	Acc Info
Values & Meanings			
Type and Length	Boolean, 1	Integer, 5	String, 20
Default Value	0	0	""
Acceptable Values	0, 1	0-5	Alphabetical A-Z, a-z and Numerical 0-9
Notes			
Source	Account Information	Account Information	Member Input
Security	Owner/Administrators	Administrators	Administrators
Responsible User	Administrator	Member/Administrator	Member

Data Flows

Data Flows					
Label	Send Book	Receive Book	Account Status	Login	Create Account
Description	Sending books to application	Receiving books from library	Checking member status	Login Info	Creating an Account
Alias	Send	Receive	Member	Log	Create
Origins	Member	Library	Guest/Member	Member	Guest
Destination	Application	Member	Application	Account	Account
Record	Books	Books	Account	Account	Account
Volume	1 to 10	1 to 5	1	15	10

Data Stores

Data Stores		
Label	Book Library	Account Info
Description	Storage of all books	Holds information of
	on the application	member accounts
Alias	Library	Accounts
Attributes	Receive book	Login Info
	Send book	New account info
	View books	email
	Query availability	shipping addresses
Volume	50-100 per week	1-10 per month

Processes

Data Stores						
Label	Book Exchange Application	Become Member	Membership Confirmation	Book Donation Requirement	Book Borrow Limit Check	Restriction Check
Description	Overall application process	Process for applying	Confirming that the user is a	Requiring that new users donate	Checks if members have	Checks if book is acceptable to
	for sending and receiving	to be a member	member and can request books	a certain number of books	borrowed the max # of books	put in library for borrowing
Number	1	2	2	3	3	3
Process Description	Input: Members sending or	Input: New Account Information	Input: Account Information	Input: account info	Input: account info	Input: book
	requesting books	Input: Donation of books	Input: book request	Input: books to donate	Input: book to borrow	Output: accept/deny
	Input: Library stock query	Output: Membership login	Output: true/false is member	Output: ability to borrow	Output: accept/deny request	Output: book put in library
	Output: Sending books to	Output: Ability to receive books	Output: book solution			
	members					
	Output: Asking for library					
	query					

Entities

Data Stores				
Label	Member	Guest	Library	Administrator
Description	A user who has donated	A user who has not donated	Location of books available	A moderator of the application.
	books and signed up	books or signed up	on the application	A user with powers.
Alias	Verified	Visitor	Warehouse	Moderator
Inputs	New Members	Receive library of books	Add/Return books	Book validity check
	Book limit results	New membership details	Stock query	Account check
Outputs	Sending books	New Account Info	Stock response	Book validity check
	Requesting books	Library Viewing Requests	Transfer books to members	Account decisions

(10 pts) Build 2 Decision tables (Section 5.9.4 pp. 170-174) for the Book Exchange Project using Excel. One decision table must have at least 2 rules and another must have at least 3 rules.

2 Rules:

BOOK EXCHANGE Process	1	2	3	4
User is a member	Y	Y	N	N
User has donated up to or exceeding the book number	Y	N	Y	N
Accept Exchange	X			
Reject Exchange		X	X	X

3 Rules:

BOOK EXCHANGE Process	1	2	3	4	5	6	7	8
User is a member	Y	Y	Y	Y	N	N	N	N
User has donated enough	Y	Y	N	N	Y	Y	N	N
User has verified account	Y	N	Y	N	Y	N	Y	N
Accept Exchange	X	X			X			
Reject Exchange			X	X		X	X	X