I. DESCRIPTION

XYZ is a used bookstore business that buys and sells all sorts of used books as well as rare and out-of-print books. Our goal is to provide customers with the same level of service and knowledge that traditional and new-book retailers have been renowned for. We hope to be a destination for book lovers, where we bring customers the best in-store experience, share the thrill upon discovering an interesting author and share our knowledge and excitement with our customers.

Product:

The primary products at XYZ are used books. XYZ offers a wide range of used books, varying from newest editions to rare and out-of-print editions. This also includes every conceivable category consisting of fiction, non-fiction, business, science, children, and several other genres of books.

Rare books will be placed on the second floor, whereas the rest will take up the most amount of the first floor. In addition, XYZ has a "reading room" on the second floor, offering a relaxing atmosphere for book readers through the placement of chairs and couches.

Market:

Our target market is the residential community living near us and within San Antonio. XYZ establishes its store in downtown San Antonio, which is one of the busiest sections of this beautiful city. The area is well-known for its high-quality establishments and high density of residents. There are several warehouses located nearby, which allows us to stock a large amount of inventory.

Operations:

At XYZ, customers will come to us to either buy or sell used books, or to do both. After buying or selling used books, customer's email, phone, and other information will be recorded to serve for promotion. Each book can have multiple advertisements. The primary advertisement method that we use is social media, and the primary platforms we use are Facebook and Instagram. For each book, we will write promotional posts on social media platforms to make it accessible to the customers, as well as to keep customers updated about books we have. Once we have a promotional post, we will send an email and/or text message to the customer with a link (URL) to the post. If the customer come to our bookstore to buy and check out the books, each employee will process each checkout cart. In terms of inventory, copies of each book will be stored in a warehouse. ISBN as well as the number of copies at each warehouse will be recorded and serve for restocking purposes.

Business Functions:

A lot of business functions within the bookstore will be supported by the database:

- The database will support a key function of the bookstore, which is Operations. This function involves offering used books to customers daily. The database also aims to equalize between the supply of used books and achieving the customer demand.
- In addition, the activity of sending promotional posts to customers of the bookstore represents one important external business function – that is, Advertisement, also called Promotion, which is a critical part of Marketing. Advertisement is responsible for making sure that customers know about the store's available used books. Promotional posts will have three functions, including to communicate description and information of used books, to attract them to buy books, and to remind them that the book exists in the bookstore.

- Another business function that will be supported by our database system is Human Resources Management, which allows us to keep track of each employee's information of the bookstore.
- The database system will also support Finance function. Since price and number of copies of each book are recorded, it helps us calculate the profit that XYZ generates.

II. OPERATIONAL DATABASE REQUIREMENTS

XYZ bookstore database will keep track of used books, warehouses that store the book, advertisements, customer information, employee information, and checkout carts.

- For each warehouse, XYZ will keep track of _a unique warehouse identifier_ as well as zip code and address of the warehouse.
- For each category, XYZ will keep track of _a unique category identifier_ as well as the name of the category.
- For each used book, XYZ will keep track of a _unique ISBN_ as well as its category, title, author, year published, publisher, condition, language, selling price, purchasing price and number of copies of the book. Each book can belong to multiple categories.
- For each advertisement, XYZ will keep track of _a unique URL_ to the promotional post, as well as the social platform that the book is advertised on.
- For each customer, XYZ will keep track of _a unique customer identifier_, as well as their phone, email, address, and their name that includes first name and last name.
- For each checkout cart, XYZ will keep track of _a unique receipt identifier_ as well as the date of the checkout.
- For each employee, XYZ will keep track of _a unique employee social security number (SSN)_, as well as their name that includes first name and last name.

The relationship between entities is as follows:

- Each warehouse must store at least one used book and can store several used books. Each used book is stored at one and only one warehouse.
- Each category can contain zero to many used books. Each used book belongs to at least one or many categories.
- Each used book can be provided by many customers, or no customer at all if they only come to the store to buy used books. Each customer can sell many books to the store, but does not necessarily have to sell used books if they only come to the store to buy used books.
- Each checkout cart is checked out by one and only one customer. Each customer can check out many carts, but does not have to necessarily check out a cart if they come to the store to sell used books.
- Each used book can be bought in one or several checkout carts. Each checkout cart can contain at least one used book, and can contain many used books. For each checkout transaction, XYZ also wants to keep track of the number of copies sold. This attribute belongs to the Used Book entity.
- Each checkout cart must be done by one and only one employee. Each employee can process many checkout carts, or no checkout cart at all.
- Each used book can have multiple advertisements, but can also not be promoted at all. Each advertisement is only applied to one and only one book.

- Each advertisement can be sent to many customers. Each customer can receive several promotional posts, but can also receive no promotional posts if those customers are new to the store, their information is just recorded, and the next promotional post has not been sent out yet.

III.   CONCEPTUAL ER MODEL
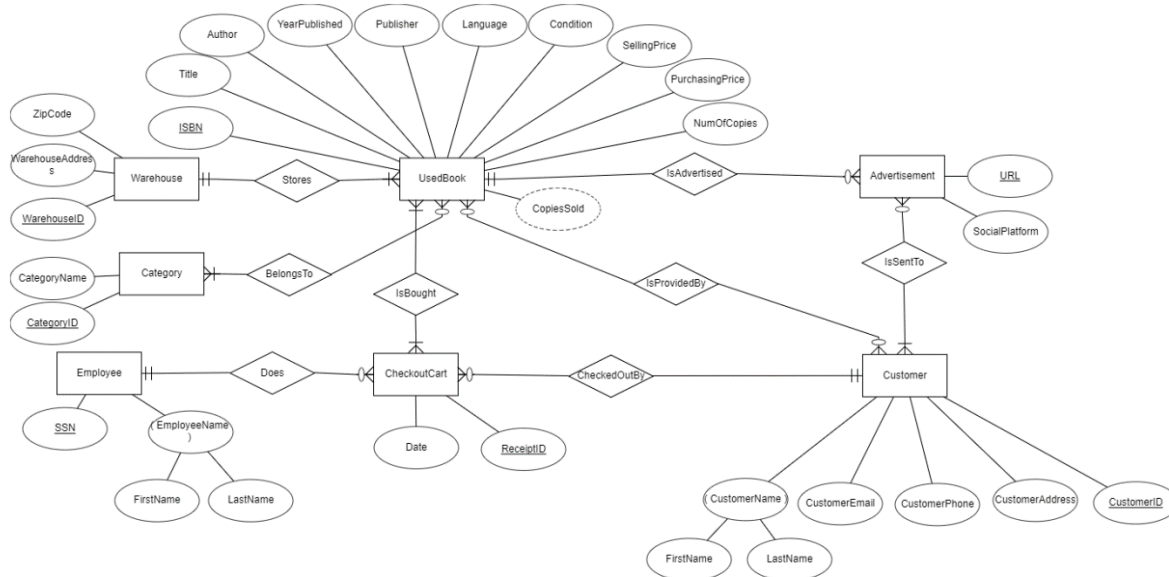
IV.   LOGICAL DATABASE ER MODEL
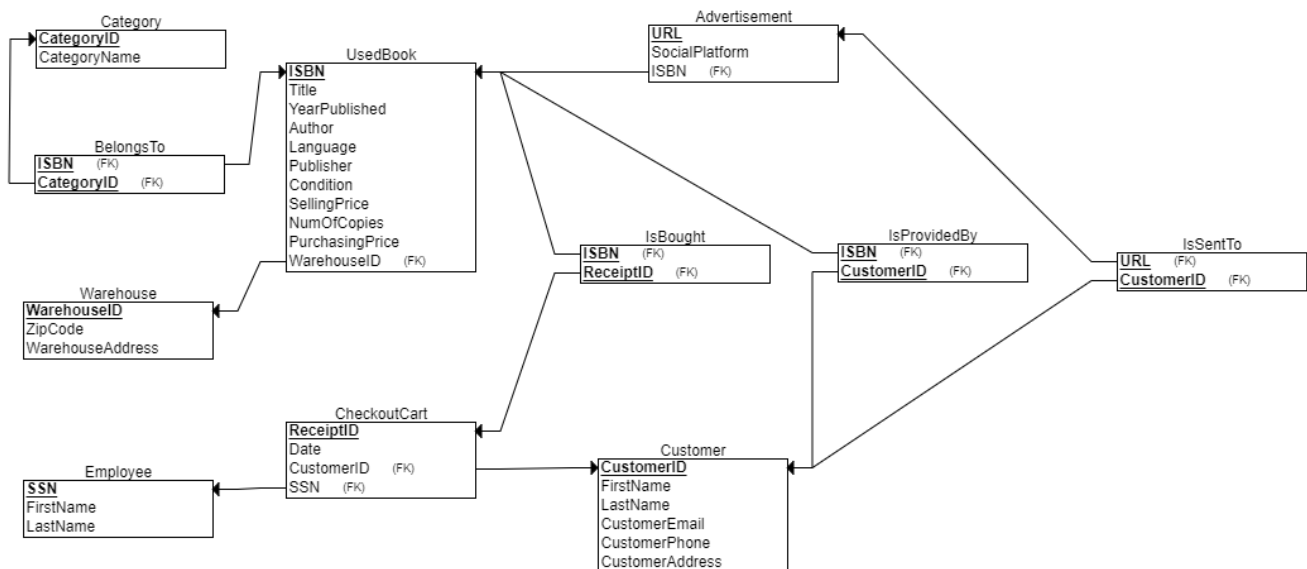
V.   SAMPLE DATA

Category

CategoryID	CategoryName
9990	Psychology

9991	Horror
9992	Mystery
9993	Crime
9994	Detective
9995	Romance
9996	Fantasy

BelongsTo

ISBN	CategoryID
9780450040184	9990
9780425210789	9990
9787514306538	9990
9780425210789	9991
9780307472342	9992
9780691199795	9993
9782019452049	9994
9781328879943	9994
9784167110123	9995
9787514306538	9996

UsedBook

ISBN	Title	YearPublished	Author	Language	Publisher	Condition	PurchasingPrice	SellingPrice	NumOfCopies	WarehouseID
9780450040184	The Shining	1982	Stephen King	English	Hodder Paperbacks	Like New	2.50	12.67	30	001
9780425210789	The Mystery of the Blue Train	2006	Agatha Christie	English	Penguin Publishing Group	Very Good	3.50	7.99	25	003
9780307472342	A Mercy	2009	Toni Morrison	English	Vintage Books USA	Excellent Condition	3.50	10.69	11	005
9780691199795	Birds of Britain	1967	John D. Green	English	The Bodley Head	Acceptable	25.00	50.00	1	001
9782019452049	Coloriages Mystères Disney Portraits	2020	Christophe-Alexis Perez	French	Hachette Heroes	Like New	12.50	25.55	16	002
9781328879943	The Handmaid Tale	2017	Margaret Atwood	English	Houghton Mifflin Harcourt	Very Good	2.50	10.99	55	002

9784167110123	Yogisha Ekkusu No Kenshin	2008	Keigo Higashino	Japanese	Tsai Fong Books	Like New	1.50	8.99	2	004
9787514306538	Roundelay of Strong Wind	2014	Keigo Higashino	Chinese	Modern Press	Excellent Condition	1.00	4.14	24	003
9780807083697	Kindred	2003	Octavia E. Butler	English	Beacon Press	Acceptable	2.50	10.60	8	007
9780140280494	The Farming of Bones	1999	Edwidge Danticat	English	Penguin Books	Very Good	2.00	6.79	3	006

Warehouse

WarehouseID	ZipCode	WarehouseAddress
001	78238	23121 Strawberry Ave, San Antonio
002	78211	23811 Blueberry Ave, San Antonio
003	78246	89849 Orange Drive, San Antonio
004	78355	84783 Apple Ave, San Antonio
005	78210	23842 Pineapple Drive, San Antonio
006	78292	38947 Purple Road, San Antonio
007	78124	23232 Green Ave, San Antonio

IsProvidedBy

ISBN	CustomerID
9780450040184	123
9780450040184	124
9780450040184	125
9780425210789	126
9780425210789	127
9780691199795	129
9782019452049	130
9781328879943	132
9784167110123	132
9787514306538	133

Customer

CustomerID	FirstName	LastName	CustomerEmail	CustomerPhone	CustomerAddress
123	Phoebe	Buffay	pbuffay@gmail.com	(575) 838-1858	1 Trinity Pl #1232, San Antonio, TX 78212
124	Rachel	Green	rgreen@gmail	(210) 257-	2132 San Pedro Ave, San

			.com	9215	Antonio, TX 72831
125	Monica	Lewis	mlewis@gmail.com	(210) 681-2840	77 Pierce Street Bryan, San Antonio, TX 77803
126	Ross	Geller	rgeller@gmail.com	(210) 437-3943	8810 Old Sky Hbr, San Antonio, TX 78242
127	Chandler	Bing	chanbing@gmail.com	(210) 599-2098	8100 Pinebrook Dr, San Antonio, TX 78230
128	Joey	Tribbiani	jtribbiani@gmail.com	(432) 398-7745	6725 Walzem Rd, San Antonio, TX 78239
129	Ted	Mosby	tmosby@gmail.com	(281) 884-8358	6623 Suncliff Crst, San Antonio, TX 78238
130	Barney	Stinson	bstinson@gmail.com	(432) 664-5739	2938 Mulberry Ave, San Antonio, TX 72321
131	Robin	Smulders	rsmulders@gmail.com	(682) 438-1124	9914 W Military Dr, San Antonio, TX 78242
132	Lily	Adrin	ladrin@gmail.com	(713) 518-3045	3212 Mulberry Ave, San Antonio, TX 72321
133	Victoria	Lee	viclee@gmail.com	(210) 802-2872	4222 Mulberry Ave, San Antonio, TX 72321
134	Lucas	Graham	lgraham@gmail.com	(210) 838-2312	1211 Brown Ave, San Antonio, TX 72812
135	Pipe	Mila	pmila@gmail.com	(232) 821-3821	9289 Red Ave, San Antonio, TX 92919
136	Wen	Kim	wkim@gmail.com	(228) 892-3921	2378 Baby Ave, San Antonio, TX 72381

IsSentTo

URL	CustomerID
https://msng.link/o/?theshining=ig	123
https://msng.link/o/?theshining=ig	124
https://msng.link/o/?agathachristie=ig	123
https://msng.link/o/?agathachristie=ig	126
https://msng.link/o/?agathachristie=ig	127
https://msng.link/o/?agathachristie=ig	128
https://msng.link/o/?amercytonimorrison=fb	123
https://msng.link/o/?amercytonimorrison=fb	124
https://msng.link/o/?birdsofbritain=ig	125
https://msng.link/o/?birdsofbritain=ig	123

Advertisement

URL	SocialPlatform	ISBN
https://msng.link/o/?theshining=ig	Instagram	9780450040184
https://msng.link/o/?theshining=fb	Facebook	9780450040184
https://msng.link/o/?agathachristie=ig	Instagram	9780425210789
https://msng.link/o/?agathachristie=fb	Facebook	9780425210789

https://msng.link/o/?amercytonimorrison=ig	Instagram	9780307472342
https://msng.link/o/?amercytonimorrison=fb	Facebook	9780307472342
https://msng.link/o/?birdsofbritain=ig	Instagram	9780691199795

IsBought

ISBN	ReceiptID
9780450040184	454
9780450040184	455
9781328879943	455
9787514306538	456
9787514306538	457
9780140280494	457
9784167110123	458
9780807083697	458

Checkout Cart

ReceiptID	Date	CustomerID	SSN
454	9-16-2022	128	531-58-7090
455	9-16-2022	131	041-36-6964
456	9-16-2022	134	212-52-2444
457	9-16-2022	135	522-59-8036
458	9-17-2022	136	518-12-5731

Employee

SSN	First Name	Last Name
531-58-7090	Eleanor	Shellstrop
041-36-6964	Emily	Bach
212-52-2444	John	Brown
522-59-8036	Lacey	Whitney
518-12-5731	Tahani	Max