The **User** relation houses the information regarding the end users, who will be able to designate a unique <u>UserName</u> and set a certain *Budget* they are willing to allocate towards their processors.

User

DATE

DATE

Username

Budget

DateRegistered

BirthDate

Diagram Key

Users

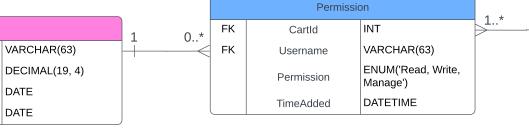
Database

Products

PΚ

The **Permission** relation acts as a junction table between **User** and **Cart**, and designates which users have access to which carts. The *Permission* attribute specifies the permissions for each cart that a user has access to.

> Junction Table (many-to-many)



The **Cart** relation contains the unique CartId and the currently selected GPU and CPU for each cart. Users with 'Read' permission may access the cart, those with 'Write' permission may edit the cart, and those with 'Manage' permission can change permissions or delete the cart entirely.

1				
+	PK	CartId	INT	0*
	FK	GPUId	VARCHAR(63)	>
	FK	CPUId	VARCHAR(63)	>
		Creator	VARCHAR(63)	0*
		CreationDate	DATE	
		LastModified	DATETIME	

The **Manufacturer** relation contains the list of brands that have released at least one of either type of processor, along with the year the brand was established.

1		Manufacturer				
	♦	PK	BrandName	VARCHAR(63)		
	1		CountryCode	CHAR(2)		
			YearEstablished	YEAR		

BCNF

We first attain 2NF form, by putting Manufacterur and its pertaining data in its own relation. We then adhere to 3NF by having every FD be of the form SuperKey -> Prime Attribute. The last rule we follow puts us in BCNF form and its that their exist a candidate key on the left side of our FD's

CPU 0..1 PΚ VARCHAR(63) ProductName PK/FK VARCHAR(63) Brand DECIMAL(19, 4) Cost YEAR ReleaseYear DECIMAL(2, 1) BaseFreq_GHz DECIMAL(2, 1) TurboFreq_GHz INT Cores INT Threads INT Cache_MB INT TDP W

GPU

ProductName

Brand

Cost

ReleaseYear

BaseFreq MHz

MemClock MHz INT

VARCHAR(63)

VARCHAR(63)

DECIMAL(19, 4)

YEAR

MemorySize_GB | DECIMAL(3, 2)

The **GPU** and **CPU** relations contain

information regarding all of the

processors available, including cost,

brand, and clock speed. Both relations

are weak entities supported by the

Manufacturer relation.

0..*

0..*

0..1 |_{PK/FK}|