Name: Abishek Hariharan USC ID : 2743190572

Relations and Cardinality

Entity	Relationship	Connectivity	Entity	Туре
PERSON	has	1:M	PHONE	
PERSON	is	1:M	DESCRIPTION	
USER	applies	1:M	COUPON	
USER	assigns	1:M	FAVORITE	
USER	makes	1:M	RESERVATION	
USER	writes	1:M	REVIEW	
OWNER	adds/deletes	1:M	COUPON	
OWNER	generates	1:M	LOG	
OWNER	adds/deletes	1:M	FEATURES	
OWNER	reports to	M:1	MANAGER	
OWNER	owns	1:M	VILLA	
OWNER	manages	1:M	PRICE	
MANAGER	sets/updates	1:M	DESCRIPTION	
MANAGER	manages	1:M	MANAGER	
MANAGER	performs	1:M	INSPECTION	
FAVORITE	belongs to	M:1	VILLA	
COUPON	applies to	1:1	VILLA	
COUPON	is applied	1:M	COUPON_APPLIED	
RESERVATION	uses	1:M	COUPON_APPLIED	
RESERVATION	has	1:1	PRICE	
RESERVATION	contains	1:M	COUPON	
RESERVATION	contains	1:1	VILLA	
FAVORITE	corresponds to	M:1	VILLA	
FEATURE	belongs to	M:1	VILLA	
VILLA	has	1:1	PRICE	

				Attribute De					
201	Attribute N TABLE	Data Type	Constraints	Single Valued	Multi Valued	Derived	Stored	Atomic	Composite
ON	User_id	INTEGER	PRIMARY KEY	✓			✓	✓	
	- FName	VARCHAR2(50)		<u></u>			<u> </u>	<u> </u>	
	LName	VARCHAR2(50)		⋖			✓	✓	
	UserName	VARCHAR2(20)	NOT NULL,UNIQUE	✓			₹	₹	
) T	Password	VARCHAR2(16)	NOT NULL	✓			✓	✓	
K 1 <i>F</i>	ABLE Email	VARCHAR2(50)	UNIQUE,NOT NULL	✓			~	✓	
	DoB	DATE	0.11402,101.11022	₹			₹		✓
IER	TABLE								
	user_id	INTEGER	PRIMARY KEY, FOREIGN KEY	✓				✓	
	reports_to	INTEGER	FOREIGN KEY	⋖			✓	✓	
IAGI	user_id	INTEGER	FOREIGN KEY	✓			✓	✓	
	reports_to	INTEGER	NOT NULL	✓			₹	✓	
NE	TABLE	i.							
	serial#	INTEGER	PRIMARY KEY	⋖			✓	✓	
	user_id	INTEGER	PRIMARY KEY, FOREIGN KEY	₹			₹	✓	
	country_code	VARCHAR2(4)	CHECK (VALID)	✓			✓	⋖	
	area_code phone_number	VARCHAR2(3) VARCHAR2(15)	CHECK (VALID) CHECK (VALID)	✓ ✓			▼	✓	
CRII	PTION TABLE		on_on(n_o)						
	user_id	INTEGER	PRIMARY KEY, FOREIGN KEY	⋖			✓	✓	
	serial#	INTEGER	PRIMARY KEY	₹			✓	₹	
	user_type	CHAR(1)	CHECK (if "U" OR "M" OR "O")	⋖	0	0	₹	V	
A T	set_by	INTEGER	FOREIGN KEY	✓			✓	✓	
1/	villa_id	INTEGER	PRIMARY KEY				✓		
	V_name	VARCHAR2(15)	NOT NULL	₹			✓		
	con_year	DATE	NOT NULL	✓			<u> </u>	✓_	
	age	INTEGER	NOT NULL	✓		₹		✓	
	price_today	NUMERIC(6,2)	DEFAULT:0	₹		✓		✓	
TUP	picture RE TABLE	VARCHAR2(100)		✓			✓		
UN	feature#	INTEGER	PRIMARY KEY				✓	✓	
	villa_id	INTEGER	FOREIGN KEY	<u> </u>			<u> </u>	✓	
	feature	VARCHAR2(20)	NOT NULL	✓			✓		
	created_by	INTEGER	PRIMARY KEY, FOREIGN KEY	✓			✓	✓	
SERV	/ATION TABLE	INITEGER	EODEION VEV	d					
	villa_id reservation#	INTEGER	FOREIGN KEY PRIMARY KEY	♂			✓ ✓	✓ ✓	
	V_name	VARCHAR2(15)	1111074111121	₹			<u> </u>	✓	
	user_id	INTEGER	FOREIGN KEY	<u></u>			<u> </u>	<u>_</u>	
	FName	VARCHAR2(50)		✓			✓	✓	
	LName	VARCHAR2(50)		♂			d	⋖	
	start_date	TIMESTAMP	CHECK(In the future)	✓ ✓			✓		✓
	end_date total_rental_price	TIMESTAMP NUMERIC(6,2)	CHECK (< 12:00 pm) NOT NULL	✓ ✓		<u> </u>		✓	
	price_history	NUMERIC(6,2)	NOT NULL	₹			<u> </u>	✓	
	deposit_price	NUMERIC(6,2)	NOT NULL	⋖		✓		⋖	
	balance_price	NUMERIC(6,2)	NOT NULL	✓		✓		✓	
CE T	ABLE		FORFIOLIZEV						
	villa_id Monday	INTEGER NUMERIC(6,2)	FOREIGN KEY DEFAULT:000000.00	⋖			₹	✓ ✓	
	Tuesday	NUMERIC(6,2)	DEFAULT:000000.00	✓			√	V	
	Wednesday	NUMERIC(6,2)	DEFAULT:000000.00	✓			<u> </u>	<u> </u>	
	Thursday	NUMERIC(6,2)	DEFAULT:000000.00	✓			✓	✓	
	Friday	NUMERIC(6,2)	DEFAULT:000000.00	⋖			✓	✓	
	Saturday	NUMERIC(6,2)	DEFAULT:000000.00	₹			d	✓	
PEC	Sunday TION TABLE	NUMERIC(6,2)	DEFAULT:000000.00	⋖			✓	✓	
	inspection#	INTEGER	PRIMARY KEY	✓			✓		
	manager_id	INTEGER	FOREIGN KEY	₹			₹		
	villa_id	INTEGER	FOREIGN KEY	₹			₹		
	inspection_date	DATE		₹			₹		✓
	inspection notes	VARCHAR2(100)		✓			✓	✓	
<u>.</u>	ULE								
3 TAI	Log#	INTEGER	PRIMARY KEY	✓			~		
G TAI	Log# villa_id	INTEGER INTEGER	PRIMARY KEY FOREIGN KEY	♂			✓		
ATAI				∀ ∀			<u> </u>		
S TAI	villa_id date_added date_deleted	INTEGER TIMESTAMP TIMESTAMP		∀			✓ ✓ ✓		
S TAI	villa_id date_added date_deleted modification	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100)	FOREIGN KEY	∀			\frac{1}{2}		Y
	villa_id date_added date_deleted modification owner_id	INTEGER TIMESTAMP TIMESTAMP		∀			✓ ✓ ✓		
	villa_id date_added date_deleted modification	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100)	FOREIGN KEY	∀			\frac{1}{2}		Y
	villa_id date_added date_deleted modification owner_id	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER	FOREIGN KEY FOREIGN KEY	✓✓✓✓					∀
	villa_id date_added date_deleted modification owner_id TABLE user_id	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY						
	villa_id date_added date_deleted modification owner_id TABLE user_id reservation# villa_id rating	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER INTEGER INTEGER INTEGER	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY						
	villa_id date_added date_deleted modification owner_id TABLE user_id reservation# villa_id rating description	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER INTEGER VARCHAR2(100)	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY						
	villa_id date_added date_deleted modification owner_id TABLE user_id reservation# villa_id rating description likes	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5)						
//IEW	villa_id date_added date_deleted modification owner_id TABLE user_id reservation# villa_id rating description	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER INTEGER VARCHAR2(100)	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY						
/IEW	villa_id date_added date_deleted modification owner_id TABLE user_id reservation# villa_id rating description likes top_review	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5)						
//IEW	villa_id date_added date_deleted modification owner_id TABLE user_id reservation# villa_id rating description likes top_review N TABLE	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER VARCHAR2(100) INTEGER BOOL	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5) NOT NULL						
/IEW	villa_id date_added date_deleted modification owner_id TABLE user_id reservation# villa_id rating description likes top_review N TABLE coupon_code	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER VARCHAR2(100) VARCHAR2(100)	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5) NOT NULL PRIMARY KEY						
JPON	villa_id date_added date_deleted modification owner_id /TABLE user_id reservation# villa_id rating description likes top_review N TABLE coupon_code villa_id created_by discount_percent	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER VARCHAR2(100) INTEGER BOOL VARCHAR2(10) INTEGER INTEGER DECIMAL(2,2)	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5) NOT NULL PRIMARY KEY FOREIGN KEY						
JPON	villa_id date_added date_deleted modification owner_id /TABLE user_id reservation# villa_id rating description likes top_review N TABLE coupon_code villa_id created_by discount_percent NS_APPLIED TABLE	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER VARCHAR2(100) INTEGER BOOL VARCHAR2(10) INTEGER INTEGER DECIMAL(2,2)	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5) NOT NULL PRIMARY KEY FOREIGN KEY CHECK (C=100%)						
JPOI	villa_id date_added date_deleted modification owner_id /TABLE user_id reservation# villa_id rating description likes top_review N TABLE coupon_code villa_id created_by discount_percent NS_APPLIED TABLE redemption#	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER BOOL VARCHAR2(10) INTEGER INTEGER BOOL INTEGER INTEGER INTEGER INTEGER	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5) NOT NULL PRIMARY KEY FOREIGN KEY FOREIGN KEY CHECK (<=100%)						
JPOI	villa_id date_added date_deleted modification owner_id /TABLE user_id reservation# villa_id rating description likes top_review N TABLE coupon_code villa_id created_by discount_percent NS_APPLIED TABLE	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER VARCHAR2(100) INTEGER BOOL VARCHAR2(10) INTEGER INTEGER DECIMAL(2,2)	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5) NOT NULL PRIMARY KEY FOREIGN KEY CHECK (C=100%)						
JPOI	villa_id date_added date_deleted modification owner_id TABLE user_id reservation# villa_id rating description likes top_review N TABLE coupon_code villa_id created_by discount_percent NS_APPLIED TABLE redemption# coupon_code	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER BOOL VARCHAR2(10) INTEGER INTEGER BOOL INTEGER INTEGER INTEGER VARCHAR2(10) INTEGER INTEGER INTEGER VARCHAR2(10)	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5) NOT NULL PRIMARY KEY FOREIGN KEY CHECK (<=100%) PRIMARY KEY FOREIGN KEY FOREIGN KEY CHECK (<=100%)						
JPOI	villa_id date_added date_deleted modification owner_id 'TABLE user_id reservation# villa_id rating description likes top_review N TABLE coupon_code villa_id created_by discount_percent NS_APPLIED TABLE redemption# coupon_code reservation#	INTEGER TIMESTAMP TIMESTAMP VARCHAR2(100) INTEGER INTEGER INTEGER INTEGER VARCHAR2(100) INTEGER BOOL VARCHAR2(10) INTEGER INTEGER BOOL INTEGER INTEGER INTEGER VARCHAR2(10) INTEGER INTEGER INTEGER VARCHAR2(10)	FOREIGN KEY FOREIGN KEY PRIMARY KEY, FOREIGN KEY PRIMARY KEY, FOREIGN KEY FOREIGN KEY CHECK (BETWEEN 1 to 5) NOT NULL PRIMARY KEY FOREIGN KEY CHECK (<=100%) PRIMARY KEY FOREIGN KEY FOREIGN KEY CHECK (<=100%)						