

## **Oracle Database Design with Entity Relationship Diagram**

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This tutorial shows you how to design <u>Oracle database</u> with <u>Visual Paradigm</u>. We will use <u>Entity</u> <u>Relationship Diagram</u> (ERD) to design database and then generate database initialization script directly to Oracle database.

## Topics

- 1.Create physical database design ERD
- 2.Draw entities and connecting relationships
- 3.Create columns and primary keys
- 4.Connect to oracle database through JDBC
- 5.Export database schema to Oracle database
- 1. In Visual Paradigm, create a new project by selecting **File > New Project** from the main menu. Name the project ComputerSales.
- Create an ERD by selecting File > New Diagram > Database Modeling > Entity Relationship Diagram from the main menu.
- 3. Enter *Physical Database Design* as the name of diagram.



4. Select entity from the toolbar to create an entity.



5. Drag to diagram to create an entity. Enter *Customer* as the name of entity.



6. To add column to the entity, right-click on the entity and select **New Column** from the pop-up menu.

Cu	stome	9 <b>1</b>		
		New Column		Alt+Shift+C
_		Open Specification	13	Enter
		Stereotypes		•
		Convert to Array Table		

- 7. Enter *customer\_id* as the name of column.
- 8. To specify the column as primary key, right-click on the column and select **Include in primary key** from the pop-up menu.



9. Move the mouse pointer over the entity, press on the **One-to-Many Relationship -> Entity** relationship icon.



- 10. Drag out to an empty space to create an entity named *Addresses*.
- 11. You can also create column through the specification dialog. To open the specification dialog, right-click the entity and select **Open Specification...** from the pop-up menu.

``` <b>`</b>		
Customercustomer_li	New Column	Alt+Shift+C
	Open Specification	Enter
	Stereotypes	13
	Convert to Array Table	

12. Select the **Columns** tab, and click **Add...**.



13. Enter the column information and click **OK** to confirm.

🌀 Column Spe	cification				x	
References	Project Mana	agement	Quality	Comments	<b>*</b>	
General	Stereotypes	Tagged	Values	Traceability	100	
Name:	address_ID					
Domain:	<unspecified></unspecified>	<unspecified></unspecified>				
Type:	integer			•		
Length:	10					

14. You also can specify the column as primary key by selecting the **Primary Key** property.

Name	Туре	Length	Primary Key	Nullable	Unique
Customercust	integer	10			
address_ID	integer		K		
			3		

- 15. Click **OK**.
- 16. Column is added.
  - ``0<del>,</del>

	Addresses							
1	Customercustomer_Id	integer(10)						
P	address_ID	integer(10)						
	address_line_1	varchar(255)	N					
	address_line_2	varchar(255)	N					
	address_line_3	varchar(255)	N					
	address_line_4	varchar(255)	N					
	town_city	varchar(64)	N					
	country	varchar(64)	N					
	post_zip_code	varchar(12)	N					

17. Let's repeat the previous steps to complete the ERD.

Addr	05505				
customer_Id	integer(10)				
P address_ID	integer(10)				8 00
address_line_1	varchar(255)	N	Computer	Categories	n re
address_line_2	varchar(255)	N	Category_id	integer(10)	1 51
address_line_3	varchar(255)	N	category_code	varchar(8)	0 -l 04 👖 pr
address_line_4	varchar(255)	N	description	varchar(1024)	0 de
town_city	varchar(64)	N	remark	varchar(255)	X in re
country	varchar(64)	N			- C
post_zip_code	varchar(12)	N			1 m
<u> </u>					
č,	5				
				<u> </u>	
			Cust	omer	
Payment	Status		R customer Id	integer(10)	
💡 status_code	integer(10)		cel mobile phon	e varchar(20)	M-I
description	varchar(255)		email address	varchar(128)	00
<u> </u>				Tarchiar (120)	wj
1				1	
1	1				
<u> </u>					
Computer_	Payments		5	8	
<pre>     payment_id </pre>	integer(10)		Comp	uters_Sold	
computer_sold_	id integer(10)	+	P computer_sold_id	integer(1	0)
part_sold_id	integer(10)		customer_ld	integer(10	))
customer_Id	integer(10)		computer_id	integer(10	))
status_code	integer(10)	1	agreed_price	numeric(8	3, 2)
			date	timestam	P N 20
			monthly_payment_	amount numeric(6	3, 2)
			monthly payment	date integer(2)	N
			remark	varchar(2	55) [8]]

- Let's configure the database configuration. Select Tools > Database > Database
   Configuration... from the main menu.
- 19. Select **Oracle** from the database list.

Database Configuration					
Language : Java	•				
📔 🕅 MySQL	Database Se				
📔 📃 MS SQL Server	Driver :				
	Driver file :				
📙 📃 Sybase ASE	Connection				
📒 📃 Sybase SQL Anywhere	<b>Q</b>				

20. Click ... to specify the Oracle JDBC jar file location.

Databas	e Setting				
Driver :		Oracle9i/10g	- V		
Driver fi	e:				
Connection URL :					
۲	Hostnam	e :	:		
	Database	e name :			

21. Select the Oracle JDBC driver file

22. Fill in the information of the database to reverse, and click **Test Connection** to verify the connection. Click **Next**.

Connec	tion URL :					
۲	Hostname :	127.0.0.1			: 1	521
	Database name :	XE				
0	jdbc:oracle:thin:@	127.0.0.1:1521:XE				
User :	john		Password :	•••••		
				Т	est Con	nection

- 23. Now it's time to generate database. Select **Tools** > **Database** > **Generate Database...** from the main menu.
- 24. In the Database Code Generation dialog box, customize the database generation.
- 25. By default, Export to database is unchecked, check it to export the entities to the database.

Code Database	
Generate Database :	Create Database 🔹
Export to database	Generate DDL 🛛 🐨 Generate Comment
レズ Upper Case SQL	Formatted SQL Header
🔲 Generate sample data	Generate Individual DDL

- 26. Press **OK** to start the generate process.
- 27. Let's check with the Oracle Web Object Browser to verify the generation.

lome > Object Browser									
Tables								CON	IPUT
<b>ب</b>	Та	ble Data	Indexes	Model	Constra	ints Gra	ants Statistics	UI Default	s Tri
ADDRESSES	Ad	ld Column	Modify (	Column	Rename	Column	Drop Column	Rename	Сору
COMPUTER		Column F	ame	Data	Туре	Nullab	le Default	Primary Ke	v
COMPUTERS_SOLD 15	0			NI MDED	10.00	No		4	-
COMPUTER_CATEGORIES	-	JMPOTLIC_L		NUMBER	(10,0)	140		'	
COMPUTER_COMPUTER_PARTS	R	GISTRATIO	DATE	TIMESTAI	MP(6)	Yes	-	•	
COMPUTER_LOANS	TI	TLE		VARCHA	R2(255)	Yes			
COMPUTER_PART	PF	BCE		NUMBER	(8,2)	Yes	-		
CUSTOMER	DE	SCRIPTION		VARCHA	R2(1024)	Yes			
CUSTOMER_PAYMENTS	RE	MARK		VARCHA	R2(255)	Ves			
FINANCE_COMPANIES		TEOOPY			10.00	No			-
PARTS_SOLD		ATEGORY_I	,	NUMBER	(10,0)	NO			
PART_MANUFACTURERS	M	ODEL		VARCHA	R2(64)	Yes	-	-	
PAVMENT STATUS								1-8	

Related Links

- <u>What is Entity Relationship Diagram (ERD)?</u>
- Evaluate Visual Paradigm for FREE

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