Entity and Column
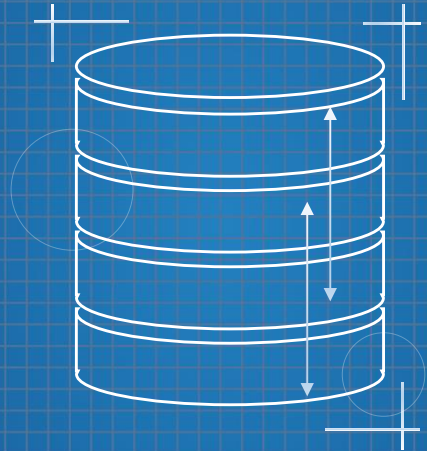
Introduction to

Entity & **Column**

What is entity and column?

- **Fundamental** elements of database design

Entity and Column

What is entity and column?

- **Fundamental** elements of database design
- Define how data are being **stored**

Entity and Column

What is entity and column?

- **Fundamental** elements of database design
- Define how data are being **stored**
  - E.g. Everything put together? Separate places for different data?

Entity and Column

What is entity and column?

- **Fundamental** elements of database design
- Define how data are being **stored**
  - E.g. Everything put together? Separate places for different data?
- Generalized form of data

Tsim Sha Tsui Clock Tower in Hong Kong
By Chris Wong

Entity and Column

Generalizing entity from data

Photo ID	Photo Title	Uploader Name	Uploader PhoneNum	Uploader Address
1	The tram	Chris Wong	252-608-5628	572 Lost Lake Crossing
2	Little kitten	Chris Wong	252-608-5628	572 Lost Lake Crossing
3	Chamomile	Chris Wong	252-608-5628	572 Lost Lake Crossing
4	New bus route	Wanda A. Allison	808-839-2217	2017 Green Impasse
5	Ferry pier 9	Chris Wong	252-608-5628	572 Lost Lake Crossing
6	The coast	Chris Wong	252-608-5628	572 Lost Lake Crossing
7	Rock climbing	Wanda A. Allison	808-839-2217	2017 Green Impasse
8	Fountain	Chris Wong	252-608-5628	572 Lost Lake Crossing
9	Sunset	Wanda A. Allison	808-839-2217	2017 Green Impasse

Photo Details

Entity and Column

Generalizing entity from data

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1	The tram	Chris Wong	252-608-5628	572 Lost Lake Crossing
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Photo

Entity and Column

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Photo

ID
Title

Generalizing entity from data

Integer

Photo Title	Uploader Name	Uploader PhoneNum	Uploader Address
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9	Sunset	Wanda A. Allison	808-839-2217	2017 Green Impasse

5 digits long

ID : integer (5)
Title

Generalizing entity from data

Photo ID	Text / Photo Title	Uploader Name	Uploader PhoneNum	Uploader Address
1	The tram	Chris Wong	252-608-5628	572 Lost Lake Crossing
2	Little kitten	Chris Wong	252-608-5628	572 Lost Lake Crossing
3	Chamomile	Chris Wong	252-608-5628	572 Lost Lake Crossing
4	New bus route	Wanda A. Allison	808-839-2217	2017 Green Impasse
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9	Sunset	Wanda A. Allison	808-839-2217	2017 Green Impasse

Photo

ID : integer (5)
Title : varchar (120)

Generalizing entity from data

Photo ID	Photo Title	Uploader Name	Uploader PhoneNum	Uploader Address
1	The tram	Chris Wong	252-608-5628	572 Lost Lake Crossing
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Photo

ID : integer (5)
Title : varchar (120)

Uploader

Generalizing entity from data

Photo ID	Photo Title	Uploader Name	Uploader PhoneNum	Uploader Address
1	The tram	Chris Wong	252-608-5628	572 Lost Lake Crossing
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9	Sunset	Wanda A. Allison	808-839-2217	2017 Green Impasse

Photo

ID : integer (5)
Title : varchar (120)

Uploader

Name : varchar (255)
PhoneNum : varchar (20)
Address : varchar (255)

Entity and Column

Generalizing entity from data

Photo

ID : integer (5)
Title : varchar (120)

Uploader

Name : varchar (255)
PhoneNum : varchar (20)
Address : varchar (255)

Entity and Column

Generalizing entity from data

Photo

ID : integer (5)
Title : varchar (120)

Uploader

Name : varchar (255)
PhoneNum : varchar (20)
Address : varchar (255)

Album

Title : varchar (120)
Description : varchar (255)
View : integer (10)

Location

Name : varchar (255)
Shortname : varchar (50)

Comment

Content : varchar (255)
Postdate: date

Tag

Title : varchar (120)
Description : varchar (255)

Entity and Column

Drawing Entities and Columns

Entity and Column

What is ERD?

- A graph of entities and their relationships

What is ERD?

- A graph of entities and their relationships
- Multiple ERDs for different contexts
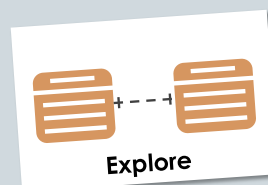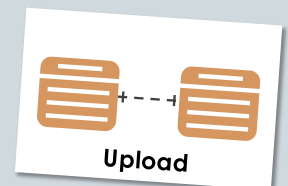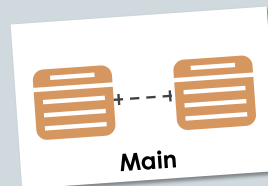
Main

Upload

Explore

How to create an ERD?

1. Under the **Diagram** tab of Visual Paradigm toolbar, click **New**.
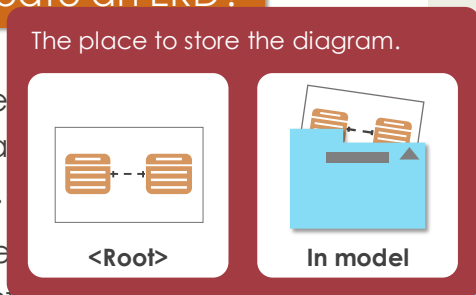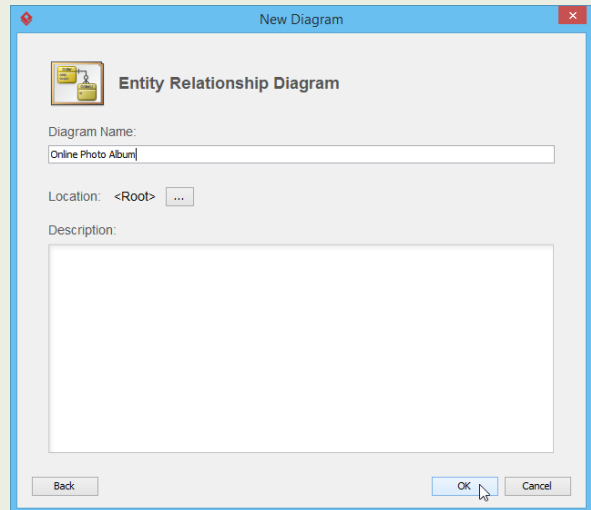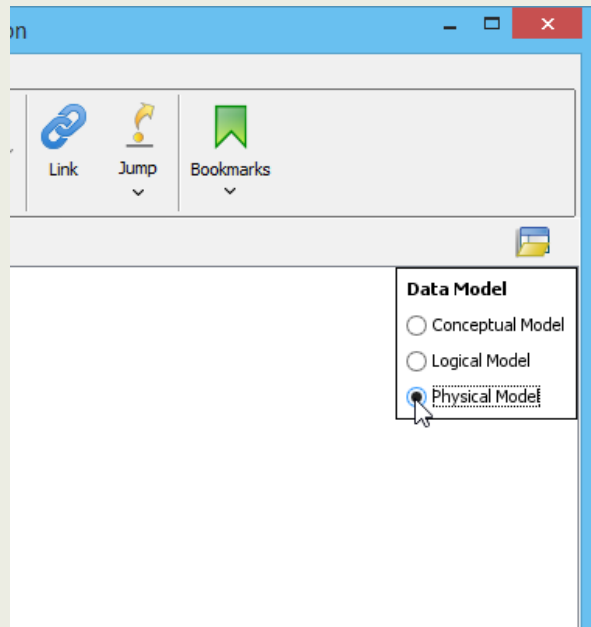
How to create an ERD?

1. Under the **Diagram** tab of Visual Paradigm toolbar, click **New**.

2. In the **New Diagram** window, select **Entity Relationship Diagram** and click **Next**.
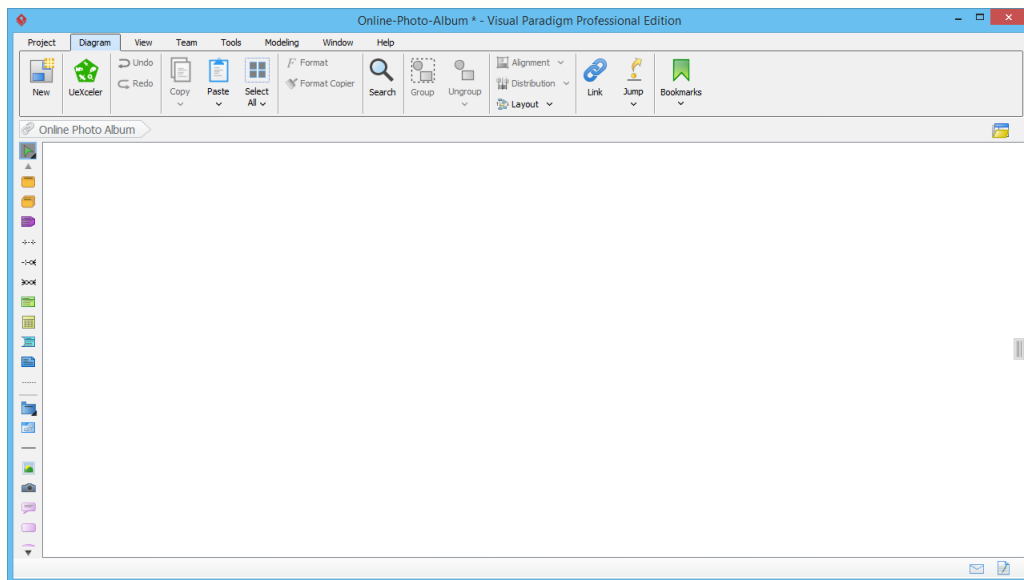
How to create an ERD?

1. Under the **Diagram** tab of Visual Paradigm toolbar, click **New**.

2. In the **New Diagram** window, select **Entity Relationship Diagram** and click **Next**.

3. Enter **Diagram Name**.

How to create an ERD?

The place to store the diagram.

<Root>   **In model**

1. Unde Visua **New**.
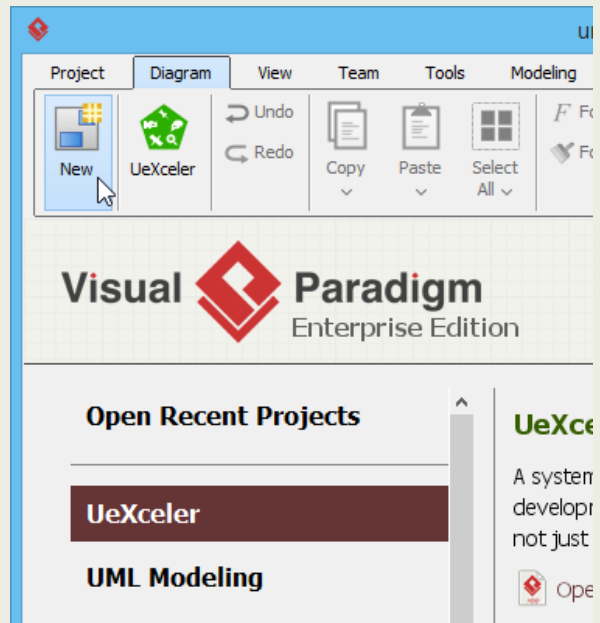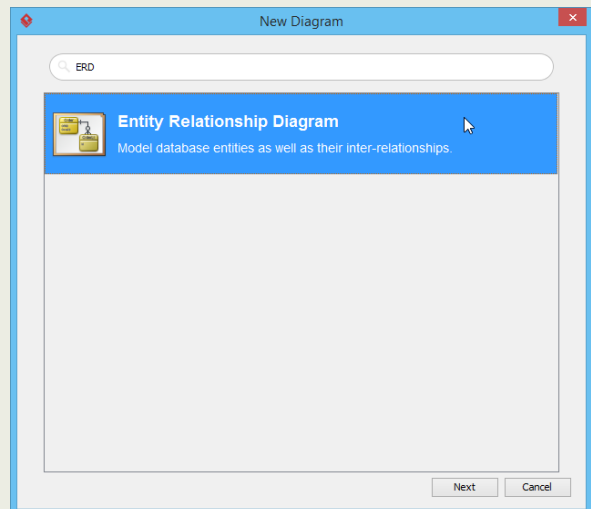
2. In the select **Entity Relationship Diagram** and click **Next**.

3. Enter **Diagram Name**.

Entity and Column
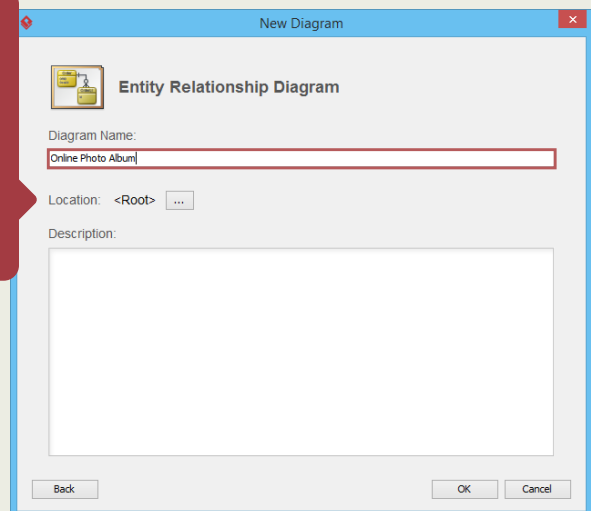
How to create an ERD?

1. Under the **Diagram** tab of Visual Paradigm toolbar, click **New**.
2. In the **New Diagram** window, select **Entity Relationship Diagram** and click **Next**.
3. Enter **Diagram Name**.
4. Click **OK**.

Entity and Column

How to create an ERD?

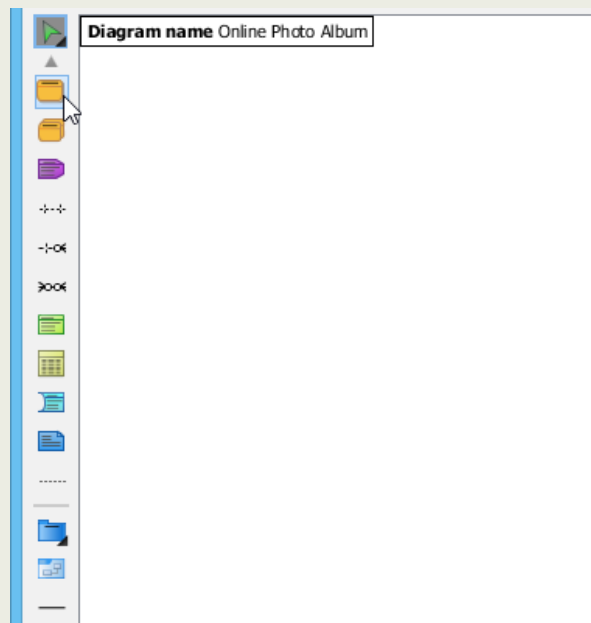1. Under the **Diagram** tab of Visual Paradigm toolbar, click **New**.
2. In the **New Diagram** window, select **Entity Relationship Diagram** and click **Next**.
3. Enter **Diagram Name**.
4. Click **OK**.
5. Select the type of data model.

Entity and Column

How to create an ERD?

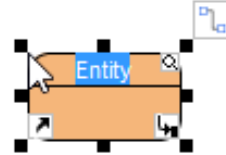Entity and Column

How to create an entity?

1. Select **Entity** from the diagram toolbar.

Entity and Column

Entity and Column
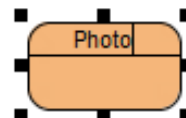
How to create an entity?

1. Select **Entity** from the diagram toolbar.
2. Click on the diagram to create an entity.

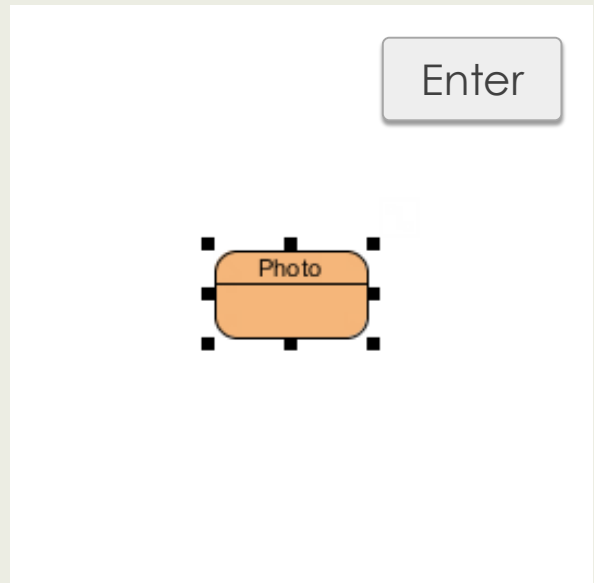Entity and Column

How to create an entity?

1. Select **Entity** from the diagram toolbar.
2. Click on the diagram to create an entity.
3. Enter the name of the entity.

Entity and Column

Database Design and Management   14
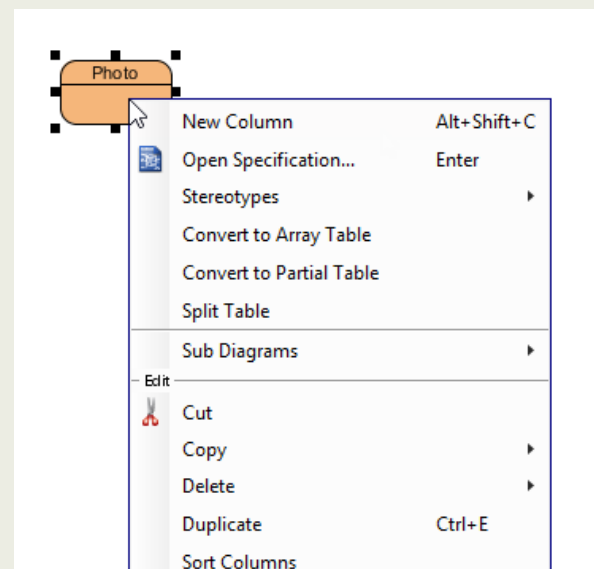
How to create an entity?

1. Select **Entity** from the diagram toolbar.
2. Click on the diagram to create an entity.
3. Enter the name of the entity.
4. Press **Enter** to confirm editing.
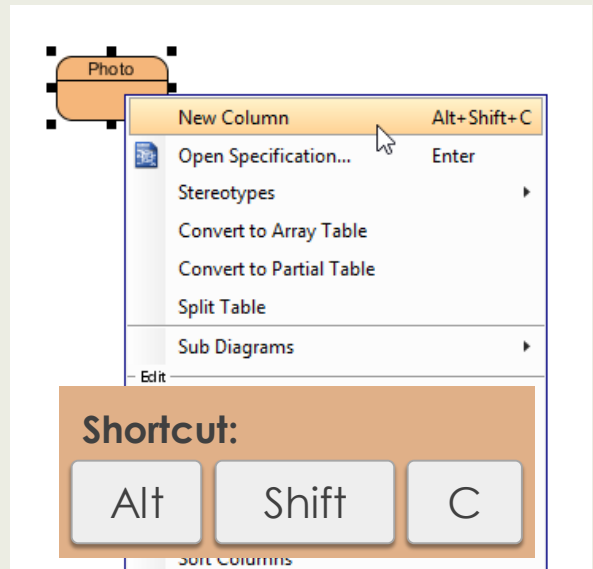
Enter

Photo

How to create a column?

1. Right click on an entity.

Photo

New Column		Alt+Shift+C
Open Specification...		Enter
Stereotypes		▶
Convert to Array Table		
Convert to Partial Table		
Split Table		
Sub Diagrams		▶
Edit		
Cut		
Copy		▶
Delete		▶
Duplicate		Ctrl+E
Sort Columns		

How to create a column?

1. Right click on an entity.
2. Select **New Column** from the popup menu.

Photo	
New Column	Alt+Shift+C
Open Specification...	Enter
Stereotypes	▶
Convert to Array Table	
Convert to Partial Table	
Split Table	
Sub Diagrams	▶

Edit

Shortcut:

Alt	Shift	C

Sort Columns

How to create a column?

1. Right click on an entity.
2. Select **New Column** from the popup menu.
3. Enter the name of the column.

Photo

ID
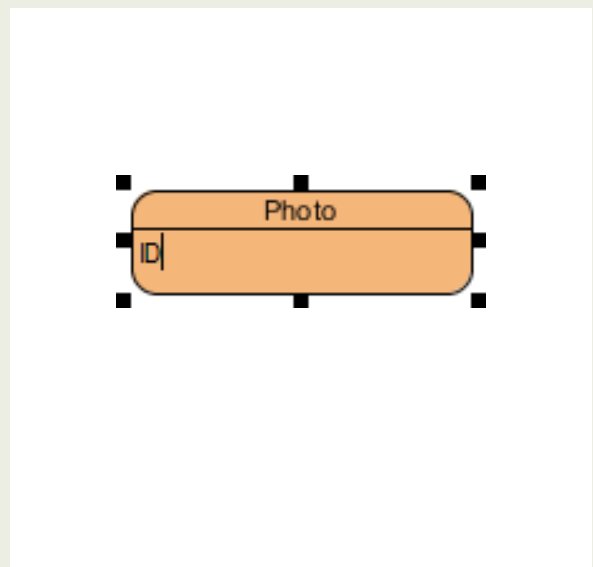
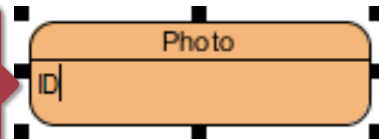## How to create a column?

1. Right click on an entity.

2. Select **New Column** from the popup menu.

3. Enter the n

> If it is a primary key column (PK), add a **+** sign in front of it.
>
> (We will talk about primary key in coming parts)
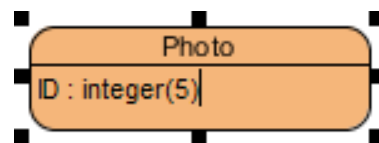>
> **Non-PK column:** My_Column
>
> **PK column:** **+** My_Column

Photo

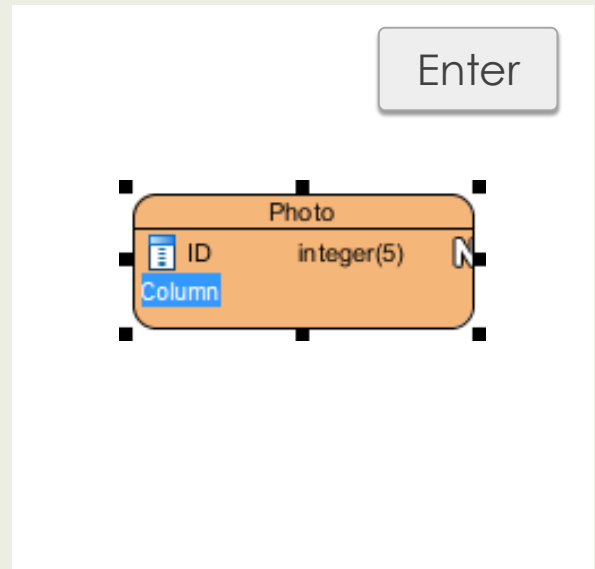ID

How to create a column?

1. Right click on an entity.

2. Select **New Column** from the popup menu.

3. Enter the name of the column.

4. Enter "*: ${type} (${len})*" where *${type}* is the column type and *${len}* is the column length.

Photo

ID : integer(5)

How to create a column?

1. Right click on an entity.
2. Select **New Column** from the popup menu.
3. Enter the name of the column.
4. Enter "*: ${type} (${len})*" where *${type}* is the column type and *${len}* is the column length.
5. Press **Enter** to confirm creation and move on to creating the other column(s).
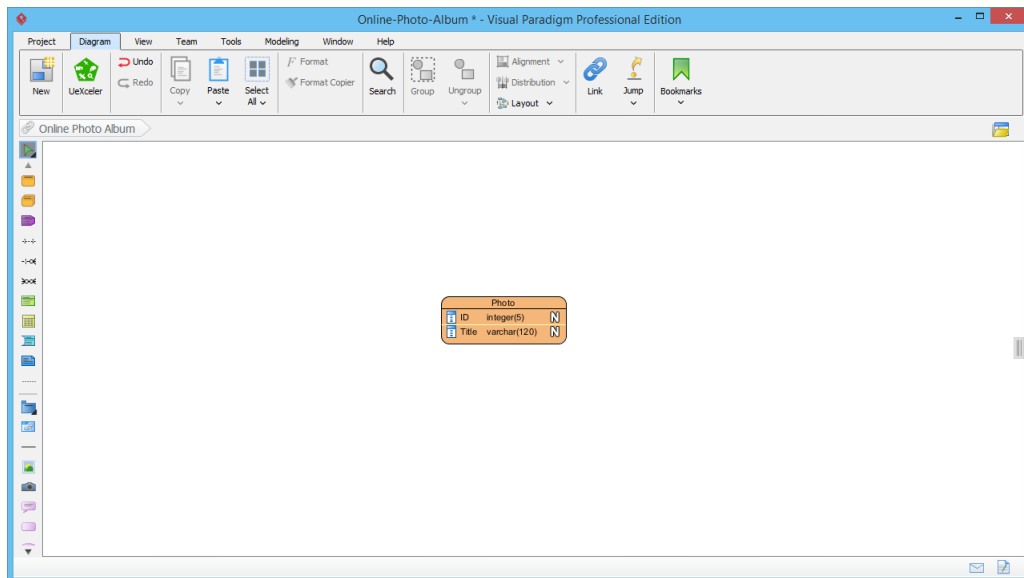
Enter

Photo

| ID | integer(5) |

Column

How to create a column?

1. Right click on an entity.
2. Select **New Column** from the popup menu.
3. Enter the name of the column.
4. Enter "*: ${type} (${len})*" where *${type}* is the column type and *${len}* is the column length.
5. Press **Enter** to confirm creation and move on to creating the other column(s).
6. Press **Esc** when finished.

Esc

Photo

| ID | integer(5) |
| Title | varchar(120) |
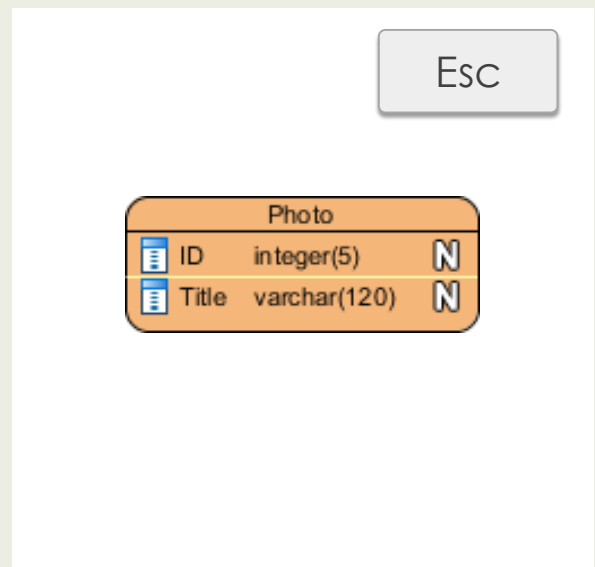
How to create a column?

Summary

- Introduction to entity and column
- How to draw entity and column