

Pizza Overflow is a pizza company that produces and delivers pizzas. They have different pizzas for which they use various ingredients. A client can add extra ingredients to their pizza or they can omit specific ingredients.

Pizza Overflow is using the data model below to store the ingredients for their pizzas and their orders.

- *Given the table schemas below, write a query to print a new pizza recipe that includes the most used 5 ingredients in all the ordered pizzas in the past 6 months.*
- *Help the cook by generating an alphabetically ordered comma separated ingredient list for each ordered pizza and add a 2x in front of any ingredient that is requested as extra and is present in the standard recipe too.*

For example:

The recipe for order\_id = 5 would be: "2xBacon, BBQ Sauce, Beef, Cheese, Chicken, Mushrooms, Pepperoni, Salami"

**Pizza:**

id	name	ingredients
1	Carnivore	1, 2, 3, 4, 5, 6, 8, 10
2	Vegetarian	4, 6, 7, 9, 11, 12
3	Prosciutto e sql	11, 12, 13, 6

**Ingredients:**

id	name
1	Bacon
2	BBQ Sauce
3	Beef
4	Cheese
5	Chicken
6	Mushrooms
7	Onions
8	Pepperoni
9	Peppers
10	Salami
11	Tomatoes
12	Tomato Sauce
13	Prosciutto

**Orders:**

order_id	customer_id	pizza_id	exclusions	extras	order_time
1	101	1			2021-02-01 18:05:02.000
2	101	1			2021-02-01 19:00:52.000
3	102	1			2021-03-02 23:51:23.000
3	102	2		NULL	2021-03-02 23:51:23.000
4	103	1	4		2021-05-04 13:23:46.000
4	103	1	4		2021-05-04 13:23:46.000
4	103	2	4		2021-05-04 13:23:46.000
5	104	1	null	1	2021-06-08 21:00:29.000
6	101	2	null	null	2021-06-08 21:03:13.000
7	105	2	null	1	2021-06-08 21:20:29.000
8	102	1	null	null	2021-07-09 23:54:33.000
9	103	1	4	1, 5	2021-08-10 11:22:59.000
10	104	1	null	null	2021-09-11 18:34:49.000
10	104	1	2, 6	1, 4	2021-09-11 18:34:49.000
11	115	3	NULL	8	2021-09-11 19:45:29.000

Please use the script attached in Appendix to create and populate the data model. The solution must use only SQL, ANSI standard. *No programming or procedural languages are allowed.*

## Appendix

```
CREATE TABLE [dbo].[Pizza](
    [id] [int] NOT NULL,
    [name] [varchar](50) NULL,
    [ingredients] [varchar](50) NULL,
    CONSTRAINT [PK_Recipes] PRIMARY KEY CLUSTERED
(
    [id] ASC
)
) ON [PRIMARY]
```

```
CREATE TABLE [dbo].[Ingredients](
    [id] [int] NOT NULL,
    [name] [varchar](40) NULL,
    CONSTRAINT [PK_Ingredients] PRIMARY KEY CLUSTERED
(
    [id] ASC
)
) ON [PRIMARY]
```

```
CREATE TABLE [dbo].[Orders](
    [order_id] [int] NOT NULL,
    [customer_id] [int] NULL,
    [pizza_id] [int] NULL,
    [exclusions] [varchar](4) NULL,
    [extras] [varchar](4) NULL,
    [order_time] [datetime] NULL
) ON [PRIMARY]
```

```
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (1, N'Bacon')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (2, N'BBQ Sauce')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (3, N'Beef')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (4, N'Cheese')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (5, N'Chicken')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (6, N'Mushrooms')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (7, N'Onions')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (8, N'Pepperoni')
```

```
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (9, N'Peppers')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (10, N'Salami')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (11, N'Tomatoes')
INSERT [dbo].[Ingredients] ([id], [name]) VALUES (12, N'Tomato Sauce') INSERT
[dbo].[Ingredients] ([id], [name]) VALUES (13, N'Prosciutto')
```

```
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(1, 101, 1, N'', N'', CAST(N'2021-02-01T18:05:02.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(2, 101, 1, N'', N'', CAST(N'2021-02-01T19:00:52.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(3, 102, 1, N'', N'', CAST(N'2021-03-02T23:51:23.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(3, 102, 2, N'', NULL, CAST(N'2021-03-02T23:51:23.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(4, 103, 1, N'4', N'', CAST(N'2021-05-04T13:23:46.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(4, 103, 2, N'4', N'', CAST(N'2021-05-04T13:23:46.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(5, 104, 1, N'null', N'1', CAST(N'2021-06-08T21:00:29.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(6, 101, 2, N'null', N'null', CAST(N'2021-06-08T21:03:13.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(7, 105, 2, N'null', N'1', CAST(N'2021-06-08T21:20:29.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(8, 102, 1, N'null', N'null', CAST(N'2021-07-09T23:54:33.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(9, 103, 1, N'4', N'1', 5, CAST(N'2021-08-10T11:22:59.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(10, 104, 1, N'null', N'null', CAST(N'2021-09-11T18:34:49.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(10, 104, 1, N'2', 6, N'1', 4, CAST(N'2021-09-11T18:34:49.000' AS DateTime))
INSERT [dbo].[Orders] ([order_id], [customer_id], [pizza_id], [exclusions], [extras], [order_time]) VALUES
(11, 115, 3, NULL, N'8', CAST(N'2021-09-11T19:45:29.000' AS DateTime))
```

```
INSERT [dbo].[Pizza] ([id], [name], [ingredients]) VALUES (1, N'Carnivore', N'1, 2, 3, 4, 5, 6, 8, 10')
INSERT [dbo].[Pizza] ([id], [name], [ingredients]) VALUES (2, N'Vegetarian', N'4, 6, 7, 9, 11, 12')
INSERT [dbo].[Pizza] ([id], [name], [ingredients]) VALUES (3, N'Prosciutto e sql', N'11, 12, 13, 6')
```