## 1ST EXAMPLE FUNCTION

```sql
CREATE FUNCTION get_amount (@number1 INT, @number2 float)
RETURNS FLOAT
AS
BEGIN
    DECLARE @total float = @number1*@number2
    RETURN @total
END

SELECT dbo.get_amount(100, 20.18)
```

110 %

Результаты | Сообщения

| (Отсутствует имя столбца) |
|---|
| 1 | 2018 |

## 2ND EXAMPLE FUNCTION

```sql
---------2----------
CREATE FUNCTION FindCustomer (@PARAMETER INT)
RETURNS CHAR(50) AS BEGIN
DECLARE @ADDRESS CHAR(50)
SELECT @ADDRESS=CUST.CUST_ADDRESS FROM CUSTOMERS CUST
JOIN ORDERS ORD ON ORD.CUST_ID=CUST.CUST_ID
WHERE ORD.ORDER_NUM=@PARAMETER
RETURN @ADDRESS
END;
```

32 %

Сообщения
Выполнение команд успешно завершено.

```sql
SELECT DBO.FindCustomer('20005')
```

132 %

Результаты | Сообщения

| (Отсутствует имя столбца) |
|---|
| 1 | 200 Maple Lane |

## Table function example

```sql
-- FUNCTION THAT RETURNS ALL INFORMATION ABOUT VENDORS
```

```sql
CREATE FUNCTION dbo.FUNC_8 ()
RETURNS TABLE
AS
RETURN
(
    SELECT V.vend_id, V.vend_name, V.vend_address, V.vend_city,
           P.prod_id, P.prod_name, P.amount, P.prod_price, P.prod_desc
      FROM Vendors AS V
      JOIN Products AS P ON V.vend_id = P.vend_id
);

SELECT *
    FROM dbo.FUNC_8 ();
```

110 % ▼

🔲 Результаты  🔲 Сообщения

| | vend_id | vend_name | vend_address | vend_city | prod_id | prod_name | amount | prod_price | prod_desc |
|---|---|---|---|---|---|---|---|---|---|
| 3 | DLL01 | Doll House Inc. | 555 High Street | Dollsville | BNBG01 | Fish bean bag toy | 50 | 3.49 | Fish bean bag toy, complete with bean bag worms ... |
| 4 | DLL01 | Doll House Inc. | 555 High Street | Dollsville | BNBG02 | Bird bean bag toy | 200 | 3.49 | Bird bean bag toy, eggs are not included |
| 5 | DLL01 | Doll House Inc. | 555 High Street | Dollsville | BNBG03 | Rabbit bean bag toy | 390 | 3.49 | Rabbit bean bag toy, comes with bean bag carrots |
| 6 | BRS01 | Bears R Us | 123 Main Street | Bear Town | BR01 | 8 inch teddy bear | 100 | 5.99 | 8 inch teddy bear, comes with cap and jacket |
| 7 | BRS01 | Bears R Us | 123 Main Street | Bear Town | BR02 | 12 inch teddy bear | 18 | 8.99 | 12 inch teddy bear, comes with cap and jacket |
| 8 | BRS01 | Bears R Us | 123 Main Street | Bear Town | BR03 | 18 inch teddy bear | 35 | 11.99 | 18 inch teddy bear, comes with cap and jacket |
| 9 | BRS01 | Bears R Us | 123 Main Street | Bear Town | BR04 | 20 inch teddy bear | 50 | 14.40 | 20 inch teddy bear, comes with cap and jacket |
| 10 | DLL01 | Doll House Inc. | 555 High Street | Dollsville | RGAN01 | Raggedy Ann | 45 | 4.99 | 18 inch Raggedy Ann doll |

## TRIGGERS 1st EXAMPLE

```sql
-- SHOW ALL DELETED VENDORS

CREATE TRIGGER TRIG_7
ON Vendors
AFTER DELETE
AS
BEGIN
    SELECT *
        FROM DELETED
END;

DELETE FROM Vendors WHERE vend_country IN ('AU', 'SI')
```

| | vend_id | vend_name | vend_address | vend_city | vend_state | vend_zip | vend_country |
|---|---|---|---|---|---|---|---|
| 1 | SIL101 | Ana Soklic | 158 HEY CHILD | Ljubljana | SI | 95159 | SI |
| 2 | AUS101 | Montaigne | 2000 Bennelong Point | Sydney | AU | 33333 | AU |

## TRIGGERS 2ND EXAMPLE

Create trigger that in case of inserting email to **customers** table which ending to 'com' it replaces to 'kz'.

```sql
----------triggers----------
CREATE TRIGGER EMAIL_UPDATE ON CUSTOMERS
AFTER INSERT
AS UPDATE CUSTOMERS SET CUST_EMAIL = REPLACE(CUST_EMAIL,'.com','.kz')
where CUST_ID = (SELECT CUST_ID FROM INSERTED)
```

32 % ▼

🔲 Сообщения

Выполнение команд успешно завершено.

Время выполнения: 2021-04-16T14:37:14.1996735+06:00

```
INSERT INTO CUSTOMERS VALUES
('1000000006','City Toys', '200 Sunny Place','Columbus','OH', '33333', 'USA', 'Michael Jones', 'sale@citytoys.com');
```

132 %

```
(затронута одна строка)

(затронута одна строка)

Время выполнения: 2021-04-16T15:53:42.7480737+06:00
```

```
SELECT*FROM CUSTOMERS;
```

132 %

Результаты | Сообщения

| | cust_id | cust_name | cust_address | cust_city | cust_state | cust_zip | cust_country | cust_contact | cust_email |
|---|---------|-----------|--------------|-----------|------------|----------|--------------|--------------|-----------|
| 1 | 1000000001 | Village Toys | 200 Maple Lane | Detroit | MI | 44444 | USA | John Smith | mailto:sales@villagetoys.com |
| 2 | 1000000002 | Kids Place | 333 South Lake Drive | Columbus | OH | 43333 | USA | Michelle Green | kztoys.@kidsplace.com |
| 3 | 1000000003 | Fun4All | 1 Sunny Place | Muncie | IN | 42222 | USA | Jim Jones | <mailto:jjones@fun4all.com |
| 4 | 1000000004 | Fun4All | 829 Riverside Drive | Phoenix | AZ | 88888 | USA | Denise L. Stephens | <mailto:dstephens@fun4all.com |
| 5 | 1000000005 | The Toy Store | 4545 53rd Street | Chicago | IL | 54545 | USA | Kim Howard | kztoys.@thetoystore.com |
| 6 | 1000000006 | City Toys | 200 Sunny Place | Columbus | OH | 33333 | USA | Michael Jones | sale@citytoys.kz |

## TRIGGER 3RD EXAMPLE

Create a trigger: when a person wants to delete information from the orderitems table it doesn't have to delete and print warning words.

```
CREATE TRIGGER TRR ON ORDERITEMS
INSTEAD OF DELETE
AS
PRINT 'Вы не можете удалить строку из таблицы orderitems, так как на нее ссылается первичный ключ'
delete from orderitems where order_num=20005
drop trigger TRR
select*from orderitems
----------7-----------------
```

110 %

Сообщения
```
Вы не можете удалить строку из таблицы orderitems, так как на нее ссылается первичный ключ

(затронуто строк: 2)
```

```
select*from orderitems
----------7-----------------
```

110 %

Результаты | Сообщения

| | order_num | order_item | prod_id | quantity | item_price |
|---|-----------|------------|---------|----------|-----------|
| 1 | 20005 | 1 | BR01 | 100 | 5.49 |
| 2 | 20005 | 2 | BR03 | 100 | 10.99 |
| 3 | 20006 | 1 | BR01 | 20 | 5.99 |
| 4 | 20006 | 2 | BR02 | 10 | 8.99 |
| 5 | 20006 | 3 | BR03 | 10 | 11.99 |

## 4 points
## Functions

1.      **Create a function that returns the number in the address. (u can use PATINDEX, STUFF and CONVERT functions)**

```sql
SELECT cust_address FROM Customers WHERE cust_id = 1000000001
SELECT dbo.get_address_number(1000000001) as address_number
```

110 %

Результаты | Сообщения

| | cust_address |
|---|---|
| 1 | 200 Maple Lane |

| | address_number |
|---|---|
| 1 | 200 |

2.      **Create a function that decreases or increases the price of a product by any percentage. If the input is not valid, then print an error message.**

```sql
SELECT prod_price FROM Products WHERE prod_id='BNBG01'
SELECT dbo.prod_change_price('BNBG01', 10, '+')
```

17 %

Results | Messages

| | prod_price |
|---|---|
| | 3.49 |

| | (No column name) |
|---|---|
| | 3.84 |

3.      **Create a function that defines the state of vendor by taking its id. But the main idea is when you get the null value it has to say 'UNKNOWN'. (u can use IIF function)**

```sql
PRINT DBO.GETSTATE('FNG01');
```

110 %

Сообщения

```
unknown
```

4.      **Create a function that displays how many vendors and customers in this country. (use table functions)**

```sql
select * from dbo.country ('England');
```

110 %

Результаты | Сообщения

| | vend_n | cust_n | country |
|---|---|---|---|
| 1 | 1 | NULL | England |

**5.** **Write a function for creating vendor's email. (u can use lower, concat, left, charindex and substring functions)**

```
select vend_name, dbo.email_venders(vend_name) as vend_mail from vendors;
```

110 %

⊞ Результаты  |  ⓘ Сообщения

| | vend_name | vend_mail |
|---|---|---|
| 1 | Bear Emporium | bear.e@gmail.com |
| 2 | Bears R Us | bears.r@gmail.com |
| 3 | Doll House Inc. | doll.h@gmail.com |
| 4 | Fun and Games | fun.a@gmail.com |
| 5 | Furball Inc. | furball.i@gmail.com |
| 6 | Jouets et ours | jouets.e@gmail.com |

**6.** **Get the number of customers by giving the name of month. (u can use DATENAME and MONTH functions)**

```
SELECT DBO.GetMonth('Май')
```

110 %

⊞ Результаты  |  ⓘ Сообщения

| | (Отсутствует имя столбца) |
|---|---|
| 1 | 1 |

**The following function is not attached to the Market database.**
**7.** **Create a function that checks whether it palindrome or not. (use LEN and SUBSTRING functions)**

```
PRINT dbo.FUNC_1 ('ASD')
PRINT dbo.FUNC_1 ('ASA')
```

110 %

ⓘ Сообщения

```
NO
YES
```

**8.** **Your function**

**Triggers**

**1.** **Create a trigger that in case you delete a vendor, all its links and data are deleted.**

```sql
INSERT INTO Vendors VALUES ('AAA123', 'Name', 'address', 'Atyrau', NULL, '06000','KZ')
INSERT INTO Products VALUES('AAA1', 'AAA123','1 prod', 100, 10.6, '')
INSERT INTO Products VALUES('AAA2', 'AAA123','2 prod', 52, 5.5, '')
INSERT INTO OrderItems (order_num, prod_id, quantity) VALUES (20010, 'AAA1', 20)
SELECT * FROM OrderItems WHERE prod_id='AAA1'
SELECT * FROM Products WHERE vend_id = 'AAA123'
SELECT * FROM Vendors WHERE vend_id = 'AAA123'
DELETE FROM Vendors WHERE vend_id = 'AAA123'
SELECT * FROM OrderItems WHERE prod_id='AAA1'
SELECT * FROM Products WHERE vend_id = 'AAA123'
SELECT * FROM Vendors WHERE vend_id = 'AAA123'
```

| | order_num | order_item | prod_id | quantity | item_price |
|---|---|---|---|---|---|
| 1 | 20010 | 1 | AAA1 | 20 | 12.72 |

| | prod_id | vend_id | prod_name | amount | prod_price | prod_desc |
|---|---|---|---|---|---|---|
| 1 | AAA1 | AAA123 | 1 prod | 80 | 12.72 | |
| 2 | AAA2 | AAA123 | 2 prod | 52 | 6.60 | |

| | vend_id | vend_name | vend_address | vend_city | vend_state | vend_zip | vend_country |
|---|---|---|---|---|---|---|---|
| 1 | AAA123 | Name | address | Atyrau | NULL | 06000 | KZ |

| order_num | order_item | prod_id | quantity | item_price |
|---|---|---|---|---|

| prod_id | vend_id | prod_name | amount | prod_price | prod_desc |
|---|---|---|---|---|---|

| vend_id | vend_name | vend_address | vend_city | vend_state | vend_zip | vend_country |
|---|---|---|---|---|---|---|

**2.     Create a trigger that in case you insert a product to the table Products, it increases product's price by 20% and shows a message that this product has been added. (u can use TRIM function)**

```sql
INSERT INTO Products VALUES
('BR04', 'BRS01', '20 inch teddy bear', 50, 12, '20 inch teddy bear, comes with cap and jacket')
SELECT * FROM Products;
```

110 %

Сообщения

```
(затронута одна строка)
20 inch teddy bear added!

(затронута одна строка)
```

```sql
SELECT * FROM Products;
```

117 %

Results   Messages

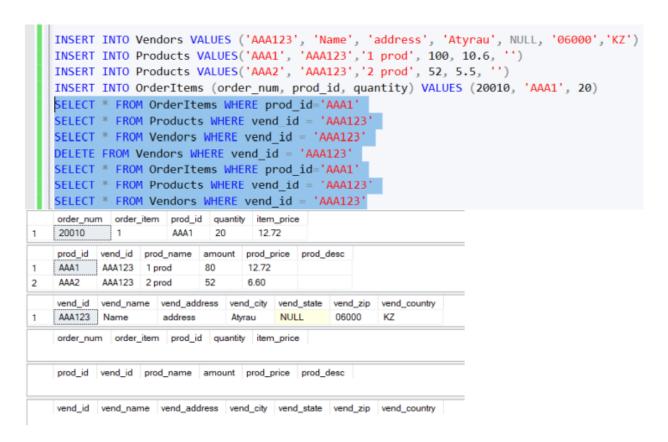| | prod_id | vend_id | prod_name | amount | prod_price | prod_desc |
|---|---|---|---|---|---|---|
| 1 | BNBG01 | DLL01 | Fish bean bag toy | 50 | 3.49 | Fish bean bag toy, complete with bean bag worms ... |
| 2 | BNBG02 | DLL01 | Bird bean bag toy | 200 | 3.49 | Bird bean bag toy, eggs are not included |
| 3 | BNBG03 | DLL01 | Rabbit bean bag toy | 140 | 3.49 | Rabbit bean bag toy, comes with bean bag carrots |
| 4 | BR01 | BRS01 | 8 inch teddy bear | 100 | 5.39 | 8 inch teddy bear, comes with cap and jacket |
| 5 | BR02 | BRS01 | 12 inch teddy bear | 18 | 8.09 | 12 inch teddy bear, comes with cap and jacket |
| 6 | BR03 | BRS01 | 18 inch teddy bear | 35 | 10.79 | 18 inch teddy bear, comes with cap and jacket |
| 7 | BR04 | BRS01 | 20 inch teddy bear | 50 | 14.40 | 20 inch teddy bear, comes with cap and jacket |
| 8 | RGAN01 | DLL01 | Raggedy Ann | 45 | 4.99 | 18 inch Raggedy Ann doll |
| 9 | RYL01 | FNG01 | King doll | 120 | 9.49 | 12 inch king doll with royal garments and crown |
| 10 | RYL02 | FNG01 | Queen doll | 18 | 9.49 | 12 inch queen doll with royal garments and crown |

**3.     Create a trigger that in case you add a new order, its date automatically assigns the date when the insert was made. (u can use CONVERT and GETDATE functions)**

```sql
INSERT INTO Orders (order_num, cust_id) VALUES(20010, '1000000006')
SELECT * FROM Orders;
```

110 %

▦ Результаты  🗊 Сообщения

| | order_num | order_date | cust_id |
|---|---|---|---|
| 1 | 20005 | 2019-05-01 | 1000000001 |
| 2 | 20006 | 2019-01-12 | 1000000003 |
| 3 | 20007 | 2019-01-30 | 1000000004 |
| 4 | 20008 | 2019-02-03 | 1000000005 |
| 5 | 20009 | 2019-02-08 | 1000000001 |
| 6 | 20010 | 2022-04-28 | 1000000006 |

**4.       Create a trigger that displays date when changes (insert, update, delete) were made in vendors.**

```sql
INSERT INTO Vendors (vend_id, vend_name, vend_address, vend_city, vend_state, vend_zip, vend_country)
    VALUES ('SIL101', 'Ana Soklič', '158 HEY CHILD', 'Ljubljana', NULL, 95159, 'SI')
```
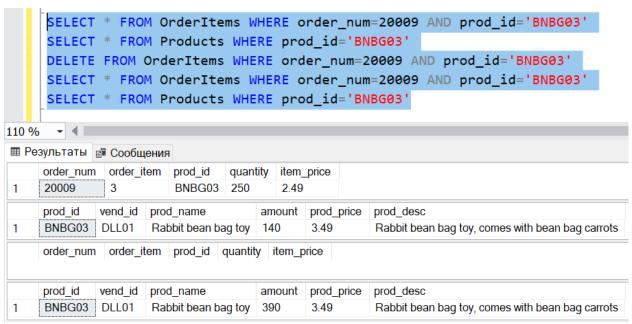
110 %

🗊 Сообщения

```
CHANGES WERE MADE AT 2022-04-28

(затронута одна строка)
```
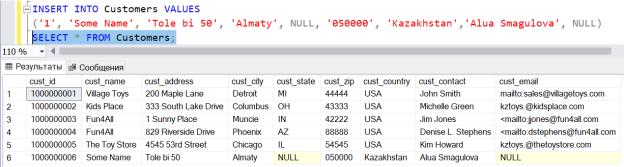
**5.       Create a trigger that in case you remove an item from an order, its quantity is returned to the Products table.**

```sql
SELECT * FROM OrderItems WHERE order_num=20009 AND prod_id='BNBG03'
SELECT * FROM Products WHERE prod_id='BNBG03'
DELETE FROM OrderItems WHERE order_num=20009 AND prod_id='BNBG03'
SELECT * FROM OrderItems WHERE order_num=20009 AND prod_id='BNBG03'
SELECT * FROM Products WHERE prod_id='BNBG03'
```

110 %

▦ Результаты  🗊 Сообщения

| | order_num | order_item | prod_id | quantity | item_price |
|---|---|---|---|---|---|
| 1 | 20009 | 3 | BNBG03 | 250 | 2.49 |

| | prod_id | vend_id | prod_name | amount | prod_price | prod_desc |
|---|---|---|---|---|---|---|
| 1 | BNBG03 | DLL01 | Rabbit bean bag toy | 140 | 3.49 | Rabbit bean bag toy, comes with bean bag carrots |

| | order_num | order_item | prod_id | quantity | item_price |
|---|---|---|---|---|---|

| | prod_id | vend_id | prod_name | amount | prod_price | prod_desc |
|---|---|---|---|---|---|---|
| 1 | BNBG03 | DLL01 | Rabbit bean bag toy | 390 | 3.49 | Rabbit bean bag toy, comes with bean bag carrots |

**6.       Create a trigger that in case you add a new customer, a unique cust_id is generated.**

```sql
INSERT INTO Customers VALUES
    ('1', 'Some Name', 'Tole bi 50', 'Almaty', NULL, '050000', 'Kazakhstan','Alua Smagulova', NULL)
    SELECT * FROM Customers;
```

110 %

▦ Результаты  🗊 Сообщения

| | cust_id | cust_name | cust_address | cust_city | cust_state | cust_zip | cust_country | cust_contact | cust_email |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000000001 | Village Toys | 200 Maple Lane | Detroit | MI | 44444 | USA | John Smith | mailto:sales@villagetoys.com |
| 2 | 1000000002 | Kids Place | 333 South Lake Drive | Columbus | OH | 43333 | USA | Michelle Green | kztoys.@kidsplace.com |
| 3 | 1000000003 | Fun4All | 1 Sunny Place | Muncie | IN | 42222 | USA | Jim Jones | <mailto:jjones@fun4all.com |
| 4 | 1000000004 | Fun4All | 829 Riverside Drive | Phoenix | AZ | 88888 | USA | Denise L. Stephens | <mailto:dstephens@fun4all.com |
| 5 | 1000000005 | The Toy Store | 4545 53rd Street | Chicago | IL | 54545 | USA | Kim Howard | kztoys.@thetoystore.com |
| 6 | 1000000006 | Some Name | Tole bi 50 | Almaty | NULL | 050000 | Kazakhstan | Alua Smagulova | NULL |

**7.      Your trigger**