MySQL User-defined Functions (LAB Lecture)

Department of Information Technology

Database Systems II (IT226)

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Syntax of Creating Function in MySQL

```
DELIMITER //

CREATE FUNCTION function_name (input_parameter1 datatype1,
                               input_parameter2 datatype2,
                               … )
RETURNS return_datatype

BEGIN
        <Declaration Part of Function>
        <Execution Part of Function>
        RETURN return_value;
END//

DELIMITER ;
```

Let's Create the Database and Tables

- Create a database named **StockItems** and activate it.
- Create the following table and enter the data inside the table.

Item

ItemID	ItemName	Price	StockQuantity
1	Calculator	20	31
2	Punching Machine	15	25
3	Scissors	5	100

Let's Create the Database and Tables

```
create database StockItems;
use StockItems;

create table Item
(ItemID int auto_increment,
ItemName varchar(100),
Price int,
StockQuantity int,
primary key (ItemID));

insert into Item(ItemName,Price,StockQuantity)
values ('Calculator',20,31),('Punching Machine',15,25),('Scissors',5,100);
```

Let's Create Some Functions!

- Create a function named **averagePrice** to calculate and return the average price of all items in the **item** table.

Without Using Local Variable

```
DELIMITER %%
CREATE FUNCTION averagePrice ( )
RETURNS DECIMAL(5,2) DETERMINISTIC
BEGIN
        RETURN (SELECT avg(price) from Item);
END %%
DELIMITER ;
```

Using Local Variable

```
DELIMITER %%
CREATE FUNCTION averagePrice ( )
RETURNS DECIMAL(5,2) DETERMINISTIC
BEGIN
        DECLARE avgprice DECIMAL(5,2);
        SELECT avg(price) INTO avgprice FROM Item;
        RETURN avgprice;
END %%
DELIMITER ;
```

Lab Work!

- Create a function named **TotalQuantity** to calculate and return the total quantity of all items in the **item** table.
    - Use a **local variable** in the function.

```
DELIMITER $$
CREATE FUNCTION TotalQuantity ( )
RETURNS INT DETERMINISTIC
BEGIN
        DECLARE total INT;
        SELECT sum(StockQuantity) INTO total FROM Item;
        RETURN total;
END $$
DELIMITER ;
```

Item

ItemID	ItemName	Price	StockQuantity
1	Calculator	20	31
2	Punching Machine	15	25
3	Scissors	5	100

Lab Work!

- Create a function named **getPrice** to take **ID** an item and return its price.

```
DELIMITER $$
CREATE FUNCTION getPrice ( ID int)
RETURNS INT DETERMINISTIC
BEGIN
        DECLARE PriceVar INT;
        SELECT price INTO PriceVar FROM Item WHERE ItemID = ID;
        RETURN priceVar;
END $$
DELIMITER ;
```

Item

ItemID	ItemName	Price	StockQuantity
1	Calculator	20	31
2	Punching Machine	15	25
3	Scissors	5	100