

Functions

```
3 ADD DOB DATE;
4
5 ## Write a user-defined function to calculate age using Dob
6
7 DELIMITER //
8
9 CREATE FUNCTION CalculateAge(dob DATE)
10 RETURNS INT
11 DETERMINISTIC
12 BEGIN
13     DECLARE age INT;
14     SET age = YEAR(CURDATE()) - YEAR(dob);
15     IF (MONTH(CURDATE()) < MONTH(dob)) OR (MONTH(CURDATE()) = MONTH(dob) AND DAY(CURDATE()) < DAY(dob)) THEN
16         SET age = age - 1;
17     END IF;
18     RETURN age;
19 END; //
20
21 DELIMITER ;
22
```

Output

#	Time	Action	Message	Duration / Fetc
1	22:23:24	ALTER TABLE Persons ADD DOB DATE	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.016 sec
2	22:24:09	END	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL server ...	0.016 sec
3	22:26:36	CREATE FUNCTION CalculateAge(dob DATE) RETURNS INT BEGIN DECLARE age INT; SET age = YEAR...	Error Code: 1418. This function has none of DETERMINISTIC, NO SQL, or READS SQL DATA in its declaration an...	0.000 sec
4	22:28:01	CREATE FUNCTION CalculateAge(dob DATE) RETURNS INT DETERMINISTIC BEGIN DECLARE age INT; ...	0 row(s) affected	0.000 sec

2.

```
19 END; //
20
21 DELIMITER ;
22
23 ##Write a select query to fetch the Age of all persons using the function
24 SELECT Id, Fname, Lname, CalculateAge(DOB) AS Age
25 FROM Persons;
```

Result Grid

Id	Fname	Lname	Age
1	John	Doe	38
2	Jane	Smith	37
3	Mike	Johnson	36
4	Emily	Davis	35
5	Chris	Brown	34
6	Pat	Miller	33
7	Alex	Taylor	32
8	Jordan	White	31
9	Taylor	Wilson	30
10	Sam	Anderson	29

Output

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3	22:26:36	CREATE FUNCTION CalculateAge(dob DATE) RETURNS INT BEGIN DECLARE age INT; SET age = YEA...	Error Code: 1418. This function has none of DETERMINISTIC, NO SQL, or READS SQL DATA in its declaration a...	0.000 sec
4	22:28:01	CREATE FUNCTION CalculateAge(dob DATE) RETURNS INT DETERMINISTIC BEGIN DECLARE age INT; ...	0 row(s) affected	0.000 sec
5	22:29:17	SELECT Id, Fname, Lname, CalculateAge(DOB) AS Age FROM Persons	10 row(s) returned	0.000 sec

3.

23 • ##Write a select query to fetch the Age of all persons using the function
 24 SELECT Id, Fname, Lname, CalculateAge(DOB) AS Age
 25 FROM Persons;
 26
 27 ## Find the length of each country name in the Country table
 28 • SELECT Country_name, LENGTH(Country_name) AS Country_Name_Length
 29 FROM Country;

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

Country_name	Country_Name_Length
USA	3
India	5
China	5
Brazil	6
Nigeria	7
Russia	6
Mexico	6
Japan	5
Germany	7
UK	2

Result 2 x

Output

Action Output

#	Time	Action	Message
1	22:23:24	ALTER TABLE Persons ADD DOB DATE	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0
2	22:24:09	END	Error Code: 1064. You have an error in your SQL syntax; check the manual that con
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5	22:29:17	SELECT Id, Fname, Lname, CalculateAge(DOB) AS Age FROM Persons	10 row(s) returned
6	22:30:05	SELECT Country_name, LENGTH(Country_name) AS Country_Name_Length FROM Country	10 row(s) returned

4.

27 ## Find the length of each country name in the Country table
 28 • SELECT Country_name, LENGTH(Country_name) AS Country_Name_Length
 29 FROM Country;
 30
 31 ##Extract the first three characters of each country's name in the Country table
 32 • SELECT Country_name, LEFT(Country_name, 3) AS Short_Name
 33 FROM Country;

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

Country_name	Short_Name
USA	USA
India	Ind
China	Chi
Brazil	Bra
Nigeria	Nig
Russia	Rus
Mexico	Mex
Japan	Jap
Germany	Ger
UK	UK

Result 3 x

Output

Action Output

#	Time	Action	Message
2	22:24:09	END	Error Code: 1064. You have an error in your SQL syntax; check the manual that com
3	22:26:36	CREATE FUNCTION CalculateAge(dob DATE) RETURNS INT BEGIN DECLARE age INT; SET age = YE...	Error Code: 1418. This function has none of DETERMINISTIC, NO SQL, or READS
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5	22:29:17	SELECT Id, Fname, Lname, CalculateAge(DOB) AS Age FROM Persons	10 row(s) returned
6	22:30:05	SELECT Country_name, LENGTH(Country_name) AS Country_Name_Length FROM Country	10 row(s) returned
7	22:31:51	SELECT Country_name, LEFT(Country_name, 3) AS Short_Name FROM Country	10 row(s) returned

5.

The screenshot shows a SQL IDE interface. The top pane contains a SQL query:

```
34
35  ##Convert all country names to uppercase and lowercase in the Country table
36
37  • SELECT Country_name,
38        UPPER(Country_name) AS Uppercase_Name,
39        LOWER(Country_name) AS Lowercase_Name
40  FROM Country;
```

The bottom pane shows the 'Result Grid' with the following data:

Country_name	Uppercase_Name	Lowercase_Name
USA	USA	usa
India	INDIA	india
China	CHINA	china
Brazil	BRAZIL	brazil
Nigeria	NIGERIA	nigeria
Russia	RUSSIA	russia
Mexico	MEXICO	mexico
Japan	JAPAN	japan
Germany	GERMANY	germany
UK	UK	uk

Below the result grid, the 'Output' pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
3	22:26:36	CREATE FUNCTION CalculateAge(dob DATE) RETURNS INT BEGIN DECLARE age INT; SET age = YE...	Error Code: 1418. This function has none of DETERMINISTIC, NO SQL, or READS SQL DATA in its declaration...	0.000 sec
4	22:28:01	CREATE FUNCTION CalculateAge(dob DATE) RETURNS INT DETERMINISTIC BEGIN DECLARE age INT...	0 row(s) affected	0.000 sec
5	22:29:17	SELECT Id, Fname, Lname, CalculateAge(DOB) AS Age FROM Persons	10 row(s) returned	0.000 sec / 0.000 sec
6	22:30:05	SELECT Country_name, LENGTH(Country_name) AS Country_Name_Length FROM Country	10 row(s) returned	0.000 sec / 0.000 sec
7	22:31:51	SELECT Country_name, LEFT(Country_name, 3) AS Short_Name FROM Country	10 row(s) returned	0.000 sec / 0.000 sec
8	22:33:00	SELECT Country_name, UPPER(Country_name) AS Uppercase_Name, LOWER(Country_name) AS L...	10 row(s) returned	0.000 sec / 0.000 sec

SUMMARY

Purpose:

The CalculateAge function computes the age of an individual based on their date of birth (DOB).

Structure:

- **Function Name:** CalculateAge
- **Parameters:**
 - **dob DATE:** The date of birth of the person.
- **Returns:**
 - **INT:** The calculated age in years.

Explanation:

1. Determine Initial Age:

- The function starts by calculating the age based on the current year minus the year of birth.

2. Adjust for Current Date:

- It checks if the current month and day are before the birth month and day. If so, it subtracts one from the age to account for not having reached the birthday yet this year.

3. Return Value:

- Finally, the function returns the calculated age.

Usage:

After defining the function, you can use it in SQL queries to fetch the age of individuals from the Persons table.

Key Considerations:

- Ensure that the function is created in an environment where binary logging is enabled and that the function is marked as DETERMINISTIC to avoid errors related to logging settings.
- The function can be called wherever needed in your SQL queries, making it reusable for calculating age based on different DOB values.