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-- ================================EXCERCISE 2================================
/*1. Select from any table a number and determine whether it is within a given range (for
example, between 1 and 10).*/

create table num
(
num float
);
insert into num values
(1),
(55),
(14),
(8);

create table final(
num float,
result varchar(20)
);
delimiter //
create function num(x float)
returns  varchar(20)
deterministic
begin
if x > 1 and x<=10 then
return "WITHIN THE RANGE";
ELSE
RETURN "NOT IN RANGE";
end if ;
end ; //
delimiter ;
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delimiter //
create procedure num()
begin
declare a int ;
declare b varchar(30);
declare finished int default 0;
declare c1 cursor for select num from num ;
declare continue handler for not found set finished=1;
open c1 ;
cursor_c1:loop
fetch c1 into a;
if finished=1 then
leave cursor_c1;
end if ;
set b =num(a);
insert into final values(a,b);
end loop cursor_c1;
close c1 ;
end ; //
delimiter ;

call num();
select * from final;

/* q2 *-- Select from any table three positive integers representing the sides of a triangle, and determine whether they form a valid triangle.
-- Hint: In a triangle, the sum of any two sides must always be greater than the third side.*/
create table op1(
x float,
y float,
z float,
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TriangleType varchar(20)
);

delimiter //
create function cal(x float, y float, z float)
returns float
deterministic
begin
if x + y = z then
        return true;
else
        return false;
end if;
end; //
delimiter ;

delimiter //
create procedure tri(x float, y float, z float)
begin
if cal(x, y, z) then
        insert into op1 values(x, y, z, 'Valid triangle');
else
        insert into op1 values(x, y, z, 'Invalid triangle');
end if;
select x as 'Side 1', y as 'Side 2', z as 'Side 3', TriangleType from op1;
end; //
delimiter ;

call tri(2, 2, 5);

/* q3  Check if a given a year is a leap year. The condition is:- year should be (divisible by 4
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and not divisible by 100) or (divisible by 4 and divisible by 400.). The year should be

Selected from some table. */

```
create table y
(
y year
);
insert into y values
(1992),(1930),(2000),(2016),(1978);
create table result
(
y year,
result varchar(20)
);
delimiter //
create function leap(x year)
returns varchar(20)
deterministic
begin
if mod(x,4)=0 and mod(x,100)!=0 then
return 'leap year';
elseif mod(x,4)=0 and mod(x,400)=0 then
return 'lEAP YEAR';
ELSE
RETURN 'NOT LEAP';
end if ;
end ; //
delimiter ;

delimiter //
create procedure leap()
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```
begin
declare s varchar(20);
declare a year;
declare x varchar(20);
declare finished int default 0;
declare c1 cursor for  select * from y;
declare continue handler for not found set finished=1;
open c1;
cursor_c1:loop
fetch c1 into a ;
if finished=1 then
leave cursor_c1;
end if;
set x=leap(a);
insert into  result values(a,x);
end loop cursor_c1;
close c1;
end ; //
delimiter ;

call  leap();
select * from result;

/*q4  Write a program that Selects from any table two character strings. Your program should
then determine if one character string exists inside another character string */

create table chara
(
str1 varchar(20),
str2 varchar(20)
);
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insert into chara values
('him','hiamsnhu'),
('jantre','shrutika'),
('jay','jayant');

create table result
(
str1 varchar(20),
str2 varchar(20),
result varchar(20)
);

delimiter //
create function result(x varchar(10),y varchar(20))
returns varchar(20)
deterministic
begin
declare c int ;
set c=instr(x,y);
if c > 0 then
 return 'PRESENT';
 ELSE
 RETURN 'ABSENT';
 end if;
 end ; //
 delimiter ;

 delimiter //
 create procedure result()
 begin
 declare s varchar(10);
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```
declare y varchar(20);
declare q varchar(20);
declare finished int default 0;
declare c1 cursor for select str2,str1 from chara;
declare continue handler for not found set finished=1;
open c1;
cursor_c1:loop
fetch c1 into s,y;
if finished=1 then
leave cursor_c1;
end if;
set q=result(s,y);
insert into result values (s,y,q);
end loop cursor_c1;
close c1;
end ; //
delimiter ;

call result();
select * from result;
```