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transakce:

```
1  -- Vytvářím tabulku s čísly účtů knihovny a jejich zůstatkem. Funkce pay bere jako parametr identifikátor
2  -- čtenáře a číslo účtu knihovny. Zkontroluji, zda existuje čtenář s tímto identifikátorem a zkontroluji,
3  -- zda existuje číslo účtu knihovny, pokud existují obě, provádím platbu. Funkce vrátí true, pokud vše
4  -- proběhlo v pořádku, jinak vrátí false.
5
6  create function pay(ReaderID int, AccountLib int ) returns boolean as
7  $$
8      Declare
9          p1 int;
10         b2 int;
11         b1 int;
12     begin
13         p1 := (select penalize from penalty where (readerpenalty = ReaderID));
14         b1 := (select balance from "accountlibraryandUser" where (owner = ReaderID));
15         b2 := (select balance from "accountlibraryandUser" where (accountnumber = AccountLib));
16         if( (p1 is null) or (b2 is null) or (b1 is null) or (p1 < 1)) then return false; end if;
17         update penalty set penalize = penalize - 1 where (readerpenalty = ReaderID);
18         update "accountlibraryandUser" set balance = balance - 100 where (owner = ReaderID);
19         update "accountlibraryandUser" set balance = balance + 100 where (accountnumber = AccountLib);
20         return true;
21     end;
22 $$
23 language plpgsql;
24
25
26 begin transaction isolation level serializable;
27 select pay(5533, 123456789);
28 commit transaction;
29
30
```

Query History Messages Data Output

COMMIT

Query returned successfully in 82 msec.

view:

```

1  -- vyhledáváme všechny knihy, které si čtenář vzal, a vybíráme knihy z kategorie klasika nebo knihy s názvem cultish
2  create view BookOnHand as
3  select readerid, namereader, category, title from reader join reserve on (readerid = readerforreserve)
4  left outer join book on (bookreserve = numberbook)
5
6  select * from bookonhand
7  where (category = 'Classic' or title = 'Cultish')

```

Data Output Explain Messages Notifications

	readerid integer	namereader character varying (180)	category character varying (80)	title character varying (180)
1	5786	Fredi Decort	Classic	Cultish
2	5656	Berty Hantusch	Crime	Cultish
3	5847	Torey Woodbridge	Drama	Cultish
4	5705	Melina Paschke	Philosopy	Cultish
5	5533	Katharine Harler	Classic	Agency

trigger:

```

1  --Vytvořím trigger pro kontrolu library Code. Pokud je kód knihovny větší než 1000, vypíšu error.
2  CREATE FUNCTION check_code() returns trigger as
3  $$
4  BEGIN
5      if(new.libraryCode > 999) then
6          raise exception 'Error : LIBRARYCODE MUST BE LESS THAN 999! YOUR LIBRARYCODE %',new.libraryCode;
7      END IF;
8      return new;
9  END;
10 $$
11 LANGUAGE plpgsql;
12
13 create trigger libraryCode before insert on library for each row execute procedure check_code();
14
15 insert into library (librarycode, namelibrary, capacity)
16 values (111, 'MyName', 4000);
17
18 insert into library (librarycode, namelibrary, capacity)
19 values (1000, 'AHA', 400000)
20
21

```

Data Output Explain Messages Notifications

ERROR: Error : LIBRARYCODE MUST BE LESS THAN 999! YOUR LIBRARYCODE 1000
SQL state: P0001

explain before index:

```
1
2 create view booksinlibraries as
3 select numberbook, title,category,codelibraryhas from book natural join has where (numberbook = hasnumberbook and category = 'Classic');
4
5 create view booksinaddresslibrary as
6 select numberbook, title,category, codelibraryhas from booksinlibraries natural join library where(codelibraryhas = librarycode);
7
8 explain
9 select numberbook, title,category, codelibraryhas, street from booksinaddresslibrary natural join addresslibrary where (codelibraryhas = codelibraryaddress)
10
```

Query History Messages Data Output

Successfully run. Total query runtime: 94 msec.
14 rows affected.

explain after index:

```
1 --Hledáme všechny knihy kategorie Classic a ve kterých knihovnách jsou. S přidáním indexu se doba běhu dotazu zkrátila o 20 ms.
2
3 create index book_ix_category on book(category);
4
5 create view booksinlibraries as
6 select numberbook, title,category,codelibraryhas from book natural join has where (numberbook = hasnumberbook and category = 'Classic');
7
8 create view booksinaddresslibrary as
9 select numberbook, title,category, codelibraryhas from booksinlibraries natural join library where(codelibraryhas = librarycode);
10
11 explain
12 select numberbook, title,category, codelibraryhas, street from booksinaddresslibrary natural join addresslibrary where (codelibraryhas = codelibraryaddress)
13
```

Query History Messages Data Output

Successfully run. Total query runtime: 66 msec.
16 rows affected.