Работу выполнил Чепоков Елизар в группе с Кролевицкой Ариной и Ануфриевым Павлом

Ниже представлен код программы и вывод для каждой задачи

Задание было выполнено с помощью Oracle Live SQL

Так же задание можно найти на github: <https://gist.github.com/Bloodies/074482e5add7742a1ded28eb6198643c> (на случай если код в документе побился и читается с ошибкой)

DROP TABLE JT$Calendar;

create table JT$Calendar --инициализация

(Cal\_Day date not null);

insert into JT$Calendar(Cal\_Day) values (to\_date('01.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('02.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('03.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('04.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('05.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('06.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('07.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('08.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('09.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('10.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('11.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('12.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('13.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('14.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('15.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('16.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('17.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('18.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('19.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('20.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('21.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('22.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('23.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('24.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('25.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('26.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('27.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('28.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('29.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('30.01.2009', 'dd.mm.yyyy'));

insert into JT$Calendar(Cal\_Day) values (to\_date('31.01.2009', 'dd.mm.yyyy'));

select \* from JT$Calendar;

DROP TABLE JT$Emp;

create table JT$Emp --инициализация таблицы

( Empno number not null, -- Таб. номер

EName varchar2 (80) not null, -- Имя

Job varchar2 (30) not null, -- Должность

Mgr number, -- Начальник

Hiredate date not null, -- Дата приема

Sal number (10, 2) not null, -- Оклад

Comm number (10, 2), -- Бонус

Deptno number not null -- Отдел

);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7369, 'SMITH', 'CLERK', 7902, to\_date('17.12.2007', 'dd.mm.yyyy'), 800, null, 20);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7499, 'ALLEN', 'SALESMAN', 7698, to\_date('20.02.2005', 'dd.mm.yyyy'), 1600, 300, 30);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7521, 'WARD', 'SALESMAN', 7698, to\_date('22.01.2009', 'dd.mm.yyyy'), 1250, 500, 30);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7566, 'JONES', 'MANAGER', 7839, to\_date('02.04.2006', 'dd.mm.yyyy'), 2975, null, 20);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7654, 'MARTIN', 'SALESMAN', 7698, to\_date('28.09.2008', 'dd.mm.yyyy'), 1250, 1400, 30);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7698, 'BLAKE', 'MANAGER', 7839, to\_date('15.01.2009', 'dd.mm.yyyy'), 2850, null, 30);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7782, 'CLARK', 'MANAGER', 7839, to\_date('09.06.2000', 'dd.mm.yyyy'), 2450, null, 10);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7839, 'KING', 'PRESIDENT', null, to\_date('17.11.2005', 'dd.mm.yyyy'), 5000, null, 10);

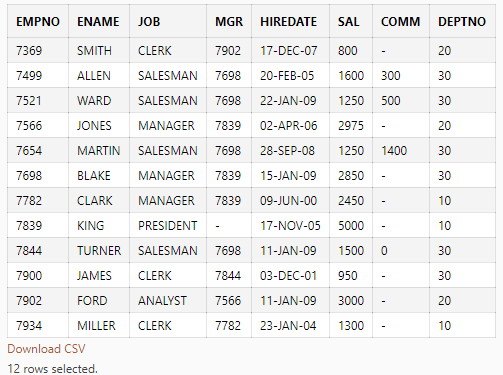
insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7844, 'TURNER', 'SALESMAN', 7698, to\_date('11.01.2009', 'dd.mm.yyyy'), 1500, 0, 30);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7900, 'JAMES', 'CLERK', 7844, to\_date('03.12.2001', 'dd.mm.yyyy'), 950, null, 30);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7902, 'FORD', 'ANALYST', 7566, to\_date('11.01.2009', 'dd.mm.yyyy'), 3000, null, 20);

insert into JT$Emp(Empno, EName, Job, Mgr, Hiredate, Sal, Comm, Deptno) values (7934, 'MILLER', 'CLERK', 7782, to\_date('23.01.2004', 'dd.mm.yyyy'), 1300, null, 10);

select \* from JT$Emp;



DROP TABLE JT$Operations;

create table JT$Operations --инициализация таблицы с шефами

( Operation\_Id number not null, -- Id операции

Account\_Id number not null, -- Id счета

Operation\_Type varchar2 (2) not null /\*CHECK (Operation\_Type in ('D', 'C'))\*/, -- Тип операции

Operation\_Date date not null, -- Дата операции

Agreement\_Num varchar2 (20), -- Номер договора

Amount number (20, 2) not null -- Сумма операции

);

insert into JT$Operations(Operation\_Id, Account\_Id, Operation\_Type, Operation\_Date, Agreement\_Num, Amount) values (1, 1, 'С', to\_date('01.01.2009', 'dd.mm.yyyy'), null, 100);

insert into JT$Operations(Operation\_Id, Account\_Id, Operation\_Type, Operation\_Date, Agreement\_Num, Amount) values (2, 1, 'С', to\_date('01.01.2009', 'dd.mm.yyyy'), '01-11A', 230);

insert into JT$Operations(Operation\_Id, Account\_Id, Operation\_Type, Operation\_Date, Agreement\_Num, Amount) values (3, 1, 'С', to\_date('01.01.2009', 'dd.mm.yyyy'), '01-11B', 350);

insert into JT$Operations(Operation\_Id, Account\_Id, Operation\_Type, Operation\_Date, Agreement\_Num, Amount) values (4, 1, 'D', to\_date('01.01.2009', 'dd.mm.yyyy'), null, 100);

insert into JT$Operations(Operation\_Id, Account\_Id, Operation\_Type, Operation\_Date, Agreement\_Num, Amount) values (5, 1, 'D', to\_date('01.01.2009', 'dd.mm.yyyy'), null, 100);

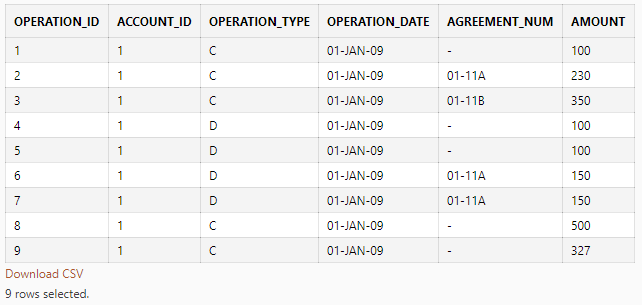
insert into JT$Operations(Operation\_Id, Account\_Id, Operation\_Type, Operation\_Date, Agreement\_Num, Amount) values (6, 1, 'D', to\_date('01.01.2009', 'dd.mm.yyyy'), '01-11A', 150);

insert into JT$Operations(Operation\_Id, Account\_Id, Operation\_Type, Operation\_Date, Agreement\_Num, Amount) values (7, 1, 'D', to\_date('01.01.2009', 'dd.mm.yyyy'), '01-11A', 150);

insert into JT$Operations(Operation\_Id, Account\_Id, Operation\_Type, Operation\_Date, Agreement\_Num, Amount) values (8, 1, 'С', to\_date('01.01.2009', 'dd.mm.yyyy'), null, 500);

insert into JT$Operations(Operation\_Id, Account\_Id, Operation\_Type, Operation\_Date, Agreement\_Num, Amount) values (9, 1, 'С', to\_date('01.01.2009', 'dd.mm.yyyy'), null, 327);

select \* from JT$Operations;



DROP TABLE JT$Saldo;

create table JT$Saldo --инициализация таблицы

( Customer\_Id number not null, -- Id клиента

Account\_Id number not null, -- Id счета

Beg\_Date date not null, -- Дата начала действия

End\_Date date not null, -- Дата конца действия

Out\_Saldo number (20, 2) not null -- Исходящий остаток

);

insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 1, to\_date('01.12.2008', 'dd.mm.yyyy'), to\_date('19.12.2008', 'dd.mm.yyyy'), 100);

insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 1, to\_date('20.12.2008', 'dd.mm.yyyy'), to\_date('21.12.2008', 'dd.mm.yyyy'), 180);

insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 1, to\_date('22.12.2008', 'dd.mm.yyyy'), to\_date('31.12.2008', 'dd.mm.yyyy'), 83.50);

insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 1, to\_date('01.01.2009', 'dd.mm.yyyy'), to\_date('09.01.2009', 'dd.mm.yyyy'), -923.70);

insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 1, to\_date('10.01.2009', 'dd.mm.yyyy'), to\_date('31.12.9999', 'dd.mm.yyyy'), 0.32);

insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 2, to\_date('08.12.2008', 'dd.mm.yyyy'), to\_date('19.12.2008', 'dd.mm.yyyy'), 10);

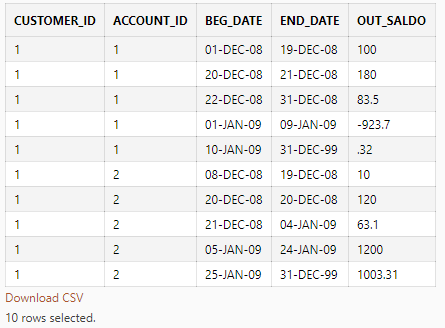
insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 2, to\_date('20.12.2008', 'dd.mm.yyyy'), to\_date('20.12.2008', 'dd.mm.yyyy'), 120);

insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 2, to\_date('21.12.2008', 'dd.mm.yyyy'), to\_date('04.01.2009', 'dd.mm.yyyy'), 63.10);

insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 2, to\_date('05.01.2009', 'dd.mm.yyyy'), to\_date('24.01.2009', 'dd.mm.yyyy'), 1200);

insert into JT$Saldo(Customer\_Id, Account\_Id, Beg\_Date, End\_Date, Out\_Saldo) values (1, 2, to\_date('25.01.2009', 'dd.mm.yyyy'), to\_date('31.12.9999', 'dd.mm.yyyy'), 1003.31);

select \* from JT$Saldo;



--1(1)-Задание---------------------------------------------------------------------------------------------------------------

/\*Написать SQL-запрос, выбирающий из таблицы JT$Emp следующие данные для отчета по подразделениям (ниже перечислены столбцы):

· Номер подразделения (Deptno).

· Общее число сотрудников подразделения.

· Число сотрудников подразделения, принятых на работу (Hiredate) в январе 2009 г.

· Суммарный оклад (Sal) всех сотрудников подразделения.

· Процентная доля оклада сотрудников подразделения, принятых на работу (Hiredate) в январе 2009 г., в суммарном окладе сотрудников подразделения.\*/

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select distinct Deptno "Номер подразделения",

count(1) "Количество сотрудников",

sum(case when 1=1 and Hiredate >= to\_date('01.01.2009', 'dd.mm.yyyy') and Hiredate <= to\_date('31.01.2009', 'dd.mm.yyyy') then 1 else 0 end) "поступило в январе 2009",

sum(Sal) "Суммарный оклад сотрудников",

nvl(trunc((select sum(sal) from jt$emp jan where 1=1 and jan.hiredate >= to\_date('01.01.2009', 'dd.mm.yyyy') and jan.hiredate <= to\_date('31.01.2009', 'dd.mm.yyyy') and jan.deptno=emp.deptno)/ sum(emp.sal) \* 100, 2), 0) "Процентная доля оклада работников, принятых в январе"

from jt$emp emp where 1=1 group by Deptno order by Deptno;



--1(2)-Задание---------------------------------------------------------------------------------------------------------------

/\*Выбрать аналогичные данные по сотрудникам,

подчиненным (как непосредственно, так и опосредованно, по иерархии подчинения)

заданному сотруднику (использовать номер сотрудника 7698).

Идентификатор (Empno) непосредственного руководителя сотрудника содержится в поле Mgr.\*/

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select distinct Deptno "номер подразделения",

count(1) "количество сотрудников",

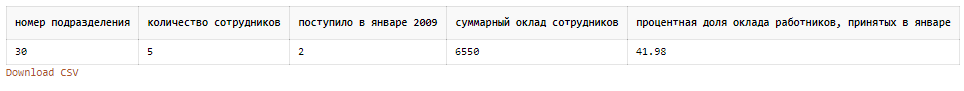
sum(case when 1=1 and Hiredate >= to\_date('01.01.2009', 'dd.mm.yyyy') and Hiredate <= to\_date('31.01.2009', 'dd.mm.yyyy') then 1 else 0 end) "поступило в январе 2009",

sum(Sal) "суммарный оклад сотрудников",

nvl(trunc((select sum(sal) from jt$emp jan where 1=1 and jan.hiredate >= to\_date('01.01.2009', 'dd.mm.yyyy') and jan.hiredate <= to\_date('31.01.2009', 'dd.mm.yyyy') and jan.deptno=emp.deptno and jan.mgr IN (select mgrs.empno from jt$emp mgrs where 1=1 and (mgrs.empno = 7698 or mgrs.mgr = 7698)))/ sum(Sal) \* 100,2),0) "процентная доля оклада работников, принятых в январе"

from jt$emp emp where 1=1 and Mgr IN (select mgrs.empno from jt$emp mgrs where 1=1 and (mgrs.empno = 7698 or mgrs.mgr = 7698 ))

group by Deptno order by Deptno;



--2-Задание-----------------------------------------------------------------------------------------------------------------

/\*Написать SQL – запрос, выбирающий из таблицы JT$Operations данные для отчета\*/

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create or replace function PromTable

(

p\_account\_id int,

p\_dateFrom date,

p\_dateTo date

)

RETURN TABLE is

Account\_Id int;

Operation\_Date date;

Agreement\_Num varchar(20);

Operation\_Id\_db int;

Amount\_db numeric(20, 2);

Operation\_Id\_cr int;

Amount\_cr numeric(20, 2);

new\_Operation\_Date date;

new\_Agreement\_Num varchar(50);

CURSOR c\_cursor

is SELECT distinct Operation\_Date, isnull(Agreement\_Num, '') as Agreement\_Num

FROM JT$Operations

WHERE Account\_Id = p\_account\_id and Operation\_Date >= p\_dateFrom and Operation\_Date <= p\_dateTo;

OPEN c\_cursor;

BEGIN

loop

FETCH c\_cursor INTO new\_Operation\_Date, new\_Agreement\_Num;

exit when c\_cursor%NOTFOUND;

end loop;

loop

--INSERT INTO Finance

select isnull(db.Account\_Id, cr.Account\_Id) Account\_Id,

isnull(db.Operation\_Date, cr.Operation\_Date) Operation\_Date,

isnull(db.Agreement\_Num, cr.Agreement\_Num) Agreement\_Num,

db.Operation\_Id,

db.Amount,

cr.Operation\_Id,

cr.Amount

from

( SELECT ROW\_NUMBER() OVER (Order by Operation\_Id) AS RowNumber, Operation\_Date, isnull(Agreement\_Num, '') as Agreement\_Num, Operation\_Id, Amount, Account\_Id

FROM JT$Operations

WHERE Operation\_Type = 'D' and isnull(Agreement\_Num, '') = new\_Agreement\_Num and Operation\_Date = new\_Operation\_Date

) db

full JOIN

( SELECT ROW\_NUMBER() OVER (Order by Operation\_Id) AS RowNumber, Operation\_Date, isnull(Agreement\_Num, '') as Agreement\_Num, Operation\_Id, Amount, Account\_Id

FROM JT$Operations

WHERE Operation\_Type = 'C' and isnull(Agreement\_Num, '') = new\_Agreement\_Num and Operation\_Date = new\_Operation\_Date

) cr

ON db.RowNumber = cr.RowNumber;

FETCH c\_cursor INTO new\_Operation\_Date, new\_Agreement\_Num;

end loop;

CLOSE c\_cursor;

return;

end PromTable;

declare new\_Account\_Id int;

declare new\_p\_dateFrom date;

declare new\_p\_dateTo date;

set new\_Account\_Id = 1;

set new\_p\_dateFrom = CAST(to\_date('01.01.2009', 'dd.mm.yyyy'));

set new\_p\_dateTo = CAST(to\_date('02.01.2009', 'dd.mm.yyyy'));

select \* from GetFinanceTable(new\_Account\_Id, new\_p\_dateFrom, new\_p\_dateTo)

order by Operation\_date, Agreement\_num