Assignment 4

DBMS LAB

IT552

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Fifth Semester

Information Technology (HY)

Q1. Write PL/SQL code to check if given year is a leap year or not

```
declare
        year number := 2020;
begin
        if      mod(year, 4) = 0
                and mod(year, 100) != 0
                or mod(year, 400) = 0 then
                dbms_output.put_line(year || ' is a leap year ');
        else
                dbms_output.put_line(year || ' is not a leap year.');
        end if;
end;
```

```
Statement processed.
2020 is a leap year
```

Q2. Write a PL/SQL program to find out whether the given number is a palindrome or not

```
declare
        numorg      integer := 31213;
        numrev      integer := 0;
        temp  integer;
begin
        temp := numorg;

        while temp > 0 loop
                numrev := numrev * 10 + mod(temp, 10);
                temp := floor(temp / 10);
        end loop;

        if      numorg = numrev then
                dbms_output.put_line(numorg || ' is a palindrome');
        else
                dbms_output.put_line(numorg || ' is not a palindrome');
        end if;
end;
```

```
Statement processed.
31213 is a palindrome
```

Q3. Write a PL/SQL program to find whether a given number is a Armstrong number or not

```
declare
   numorg integer := 153;
   numnew integer :=0;
   temp integer;
begin
   temp := numorg;
   while temp>0 loop
    numnew := numnew + power(mod(temp,10),3);
    temp := floor(temp/10);
    end loop;

   if numorg = numnew then
      dbms_output.put_line(numnew ||' is an armstrong number');
   else
      dbms_output.put_line(numorg || ' is not an armstrong number');
   end if;
end;
```

```
Statement processed.
153 is an armstrong number
```

Q4. Write a PL/SQL program to find out the GCD of three numbers

```
declare
   num1 integer := 12;
   num2 integer := 60;
   num3 integer := 144;
   a1 integer;
```

```
   a2 integer;
   a3 integer;
   aa integer;
begin
   a1:= num1;
   a2:= num2;
   a3:= num3;
   while mod(a2,a1)!=0 loop
      aa:=mod(a2,a2);
      a2:= a1;
      a1:= aa;
   end loop;
   while mod(a3,a1)!=0 loop
      aa:=mod(a3,a1);
      a3:=a1;
      a1:=aa;
   end loop;
   dbms_output.put_line('The GCD of ' ||num1||' , ' || num2 || ' and '||num3
|| ' is = ' || a1);
end;
```

```
Statement processed.
The GCD of 12 , 60 and 144 is = 12
```

Q5. Write a PL/SQL program to find out LCM of three numbers

```
declare
   num1 integer := 12;
   num2 integer := 60;
   num3 integer := 120;
   a1 integer;
   a2 integer;
   a3 integer;
   aa integer;
   lcm1 integer;
begin
   a1:= num1;
   a2:= num2;
```

```
   a3:= num3;
   while mod(a2,a1)!=0 loop
      aa:=mod(a2,a2);
      a2:= a1;
      a1:= aa;
   end loop;
   lcm1 := (num1*num2)/a1;
   a1:=num2;
   while mod(a3,a1)!=0 loop
      aa:=mod(a3,a1);
      a3:=a1;
      a1:=aa;
   end loop;
   a1:= (lcm1*num3)/a1;
   dbms_output.put_line('The GCD of ' ||num1||' , ' || num2 || ' and '||num3
|| ' is = ' || a1);
end;
```

```
Statement processed.
The GCD of 12 , 60 and 120 is = 120
```

Q6. Write a PL/SQL program to find whether a given number is a perfect number or not. A perfect number is a number which is equal to the sum of its divisors

```
declare
        num integer := 10;
        sumd integer := 1;
        i integer;
begin
        for i in 2 .. (num-1) loop
                if mod(num,i)=0 then
                        sumd := sumd + i;
                end if;
        end loop;
        if sumd = num and num != 1 then
                dbms_output.put_line('The given number '||num||' is a Perfect
Number');
        else
```

```
        dbms_output.put_line('The given number '||num||' is not a
Perfect Number');
    end if;
end;
```

```
Statement processed.
The given number 10 is not a Perfect Number
```

Q7. Write a PL/SQL program to count the number of vowels and consonants in a given word

```
declare
    string varchar2(12) := 'livesql';
    countV integer := 0;
    countC integer := 0;
    i integer;
    c character;
begin
    for i in 1 .. length(string) loop
        c := substr(string, i , 1);
        if c='a' or c='e' or c='i' or c='o' or c='u' then
            countV := countV + 1;
        else
            countC := countC + 1;
        end if;
    end loop;
    dbms_output.put_line('The number of Vowels are '||countV);
    dbms_output.put_line('The number of Consonants are '||countC);
end;
```

```
Statement processed.
The number of Vowels are 2
The number of Consonants are 5
```

Q8. Write a PL/SQL program that accepts the account number from terminal and update the amount by adding RS 2000 if the amount is less than RS 5000. The update is reflected in the deposit table

```
declare
        actNum varchar2(6);
        actAmt integer;
begin
        actNum := '&actNum';

        select amount
        into actAmt
        from deposit
        where Act_no = actNum;

        if actAmt >= 5000 then
                dbms_output.Put_line('Amount is ' || actAmt);
        else
                actAmt := actAmt + 2000;
                dbms_output.Put_line('New amount is ' || actAmt);
        end if;

        update deposit
        set amount = actAmt
        where Act_no = actNum;
end;
```

input = ‘RM7200’

```
Statement processed.
New amount is 4000
```

Before

ACT_NO	C_NAME	B_NAME	AMOUNT
BA1572	CLINT	Jadavpur	10000
RO2222	STEVE	Chembur	15000
ST4675	TONY	Hauz Khas	6500
RM7200	NATASHA	Jadavpur	2000

After

ACT_NO	C_NAME	B_NAME	AMOUNT
BA1572	CLINT	Jadavpur	10000
RO2222	STEVE	Chembur	15000
ST4675	TONY	Hauz Khas	6500
RM7200	NATASHA	Jadavpur	4000

Q9. Create an employee table(emp). Write a PL/SQL code for the following accept an employee code from the user and find the employee. Add row in emp. If employee code is duplicate then display a message

```
create table emp (
e_id varchar2(4),
e_name varchar2(10)
);
insert into emp values ('E01','Ava');
insert into emp values ('E02','Anna');
insert into emp values ('E03','Elsa');
insert into emp values ('E04','Luna');
```

E_ID	E_NAME
E01	Ava
E02	Anna
E03	Elsa
E04	Luna

Find employee with given e_id

```
declare
        eno varchar2(4);
        name varchar2(10);
begin
        eno := '&eno';

        select e_name
        into name
        from emp
        where e_id = eno;

        dbms_output.put_line('Employee Found '||'Name: '||name);
```

```
        exception
        when NO_DATA_FOUND then
                dbms_output.put_line('No Employee record with ID '||eno);
end;
```

input case:
eno = ‘E01’

```
Statement processed.
Employee Found Name: Ava
```

Input case:
eno = ‘E07’

```
Statement processed.
No Employee record with ID E07
```

Insert into table or check for duplicates

```
declare
        eno varchar2(4);
        name varchar2(10);
        count1 number := 0;
begin
        eno := '&eno';

        select count(*)
        into count1
        from emp
        where e_id = eno;

        if count1 = 0 then
                name := '&name';
                insert into emp values(eno,name);
                dbms_output.put_line('('||eno ||', '||name||') inserted');
        else
                dbms_output.put_line(eno||' alredy exists');
        end if;
```

end;

input case:
eno = ‘E01’
name = ‘Tammy’

```
Statement processed.
E01 alredy exists
```

Input case:
eno = ‘E05’
name = ‘Tammy’

```
Statement processed.
(E05, Tammy) inserted
```

E_ID	E_NAME
E05	Tammy

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Q10. Write a PL/SQL program for the following. Accept a branch name from the user. Delete all the borrow rows with that branch name. Show how many rows have been deleted

```
declare
        bname varchar2(10);
        count1 number;
begin
        bname := '&bname';

        select count(bname)
        into count1
        from borrow
        where B_name = bname;

        if count1 > 0 then
                delete from borrow
                where B_name = bname;

                dbms_output.put_line(count1 ||' rows deleted');
        else
                dbms_output.put_line('No entries for given branch');
        end if;
end;
```

LOAN_NO	C_NAME	B_NAME	AMOUNT
SNS11	STEVE	R K Puram	5000
AFB26	NATASHA	R K Puram	2000
AFB28	CLINT	Jadavpur	4500
TRR65	TONY	Hauz Khas	6550

bname = ‘abc’

```
Statement processed.
No entries for given branch
```

bname = ‘R K Puram’

```
Statement processed.
2 rows deleted
```

LOAN_NO	C_NAME	B_NAME	AMOUNT
AFB28	CLINT	Jadavpur	4500
TRR65	TONY	Hauz Khas	6550

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