Course: CSE464

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Fall 2024

Lab-2

1. WAP to accept the monthly salary of any employee and find the bonus of 12% on annual salary if experience is more than 3 years and otherwise the bonus is Rs. 1000. After all calculate the total salary received by the employee on that month along with the bonus amount.

```
Declare
Msal number(7,2):=&msal;
Annsal number(9,2);
Bonus number(7,2);
doj date:=’&date_of_join’;
Exp number(3);
Totsal number(9,2);
Begin
Exp:=months_between(sysdate,doj)/12;
Annsal:=msal*12;
If exp>3 then
Bonus:=annsal*12/100;
Else
Bonus:=1000;
End if;
Totsal:=msal+bonus;
Dbms_output.put_line(‘Annual salary=Rs. ‘||annsal);
Dbms_output.put_line(‘Experience=’||exp||’ years’);
Dbms_output.put_line(‘Bonus amount=Rs. ‘||bonus);
Dbms_output.put_line(‘Total salary drawn=Rs. ‘||totsal);
```

```
End;
```

N/B: **months_between(sysdate, doj):** A built-in Oracle function that computes the difference in months between two dates.

2. WAP to accept any number and check whether that is a multiple of only 3 or only 5 or both 3 and 5 or none of them.

```
Declare
No number(4):=&no;
Begin
If mod(no,3)=0 then
 If mod(no,5)=0 then
Dbms_output.put_line(no||’ is multiple of both 3 and 5’);
Else
Dbms_output.put_line(no||’ is multiple of only 3’);
End if;
Else
If mod(no,5)=0 then
Dbms_output.put_line(no||’ is multiple of only 5’);
Else
Dbms_output.put_line(no||’ is multiple of none of 3 and 5);
End if;
End if;
End;
```

Example outputs:

□ **Input:** no = 15

- 15 mod 3 = 0 → True
- 15 mod 5 = 0 → True
- **Output:** 15 is multiple of both 3 and 5

□ **Input:** no = 9

- 9 mod 3 = 0 → True

- 9 mod 5 = 4 → False
- **Output:** 9 is multiple of only 3

□ **Input:** no = 10

- 10 mod 3 = 1 → False
- 10 mod 5 = 0 → True
- **Output:** 10 is multiple of only 5

3. Create a stud table. The structure of the stud table must include columns for storing the student's roll number (sno), marks for three subjects (sub1, sub2, sub3), total marks (tot), average marks (avr), result (res), and division (div).

```
CREATE TABLE stud (
   sno NUMBER(3) PRIMARY KEY,
   sub1 NUMBER(3) NOT NULL,
   sub2 NUMBER(3) NOT NULL,
   sub3 NUMBER(3) NOT NULL,
   tot NUMBER(3),
   avr NUMBER(5,2),
   res VARCHAR2(6),
   div VARCHAR2(8)
);
INSERT INTO stud (sno, sub1, sub2, sub3) VALUES (101, 45, 50, 60);


INSERT INTO stud (sno, sub1, sub2, sub3) VALUES (102, 30, 40, 35);
```

4.On the created table write application program to determine the total marks, average marks, result (pass/fail), and division (first, second, or third) for a student identified by their roll number (sno) from a database table named stud. It then updates the stud table with these calculated values.

```
Declare
r number(3);
s1 number(2);
s2 number(2);
s3 number(2);
```

```
t number(3);
a number(5,2);
re varchar2(6);
d varchar2(8);
begin
r:=&no;
select sub1,sub2,sub3 into s1,s2,s3 from stud where sno=r;
t:=s1+s2+s3;
a:=t/3;
if s1>=35 and s2>=35 and s3>=35 then
re:=’pass’;
else
re:=’fail’;
end if;
if re=’pass’ and a>=60 then
d:=’first’;
else if re=’pass’ and a>=50 and a<60 then
d:=’second’;
else if re:=’pass’ and a>=35 and a<50 then
d:=’third’;
else
d:=’nill’;
end if;
update stud set tot=t,avr=a,res=re,div=d where sno=r;
end;
```

5. WAP to input any number and check whether it’s even or odd.

```
set serveroutput on
declare
num number(4);
begin
```

```
num:=&number;
if mod(num,2)=0 then
dbms_output.put_line(num||’ is even’);
else
dbms_output.put_line(num||’ is odd);
end if;
end;
```

6. WAP to find out the greatest of any three numbers.

```
set serveroutput on
declare
no1 number(4);
no2 number(4);
no3 number(4);
begin
no1:=&number1;
no2:=&number2;
no3:=&number3;
if no1>no2 and no1>no3 then
dbms_output.put_line(no1||’ is the greatest’);
elsif no>no3 and no2>no1 then
dbms_output.put_line(no2||’ is the greatest’);
else
dbms_output.put_line(no3||’ is the greatest’);
end if;
end;
```

7. WAP to enter any alphabet and check it whether it’s a consonant or a vowel.

```
Declare
Ch varchar2(1);
```

```
Begin
Ch:=’&char’;
If ch=’a’ or ch=’e’ or ch=’I’ or ch=’o’ or ch=’u’ or ch=’A’ or ch=’E’ or ch=’I’ or ch=’O’ or ch=’U’ then
dbms_output.put_line(num|| ‘ is a vowel);
else
dbms_output.put_line(num|| ‘ is a consonant);
end if;
end;
```

8. WAP to findout the factorial of any number.

```
declare
n number(3);
x number(2):=1;
f number(5):=1;
begin
n:=&number;
loop
f:=f*x;
x:=x+1;
exit when x>n;
end loop;
dbms_output.put_line(‘Factorial of’ ||n||’ ‘ is=’||f);
end;
```

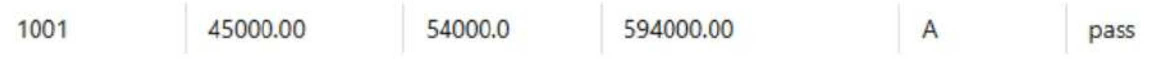
Exercise:

1. WAP to enter any number and check whether it’s a multiple of 3 or 7 or both 3 and 7 or not of 3 or 7.
2. Create an **employee** table. The structure of the table must include columns for storing the employee's ID (`emp_id`), monthly salary (`salary`), bonus (`bonus`), total annual salary (`annual_salary`), grade (`grade`), and performance result (`result`).

emp_id	salary	bonus	annual_salary	grade	result
1001	45000.00	NULL	NULL	NULL	NULL
1002	32000.00	NULL	NULL	NULL	NULL

3. Write an application program to calculate the total annual salary (including bonus), assign a performance grade based on the annual salary, and determine whether the employee has achieved the expected performance (`pass/fail`). The program should then update the employee table with these calculated values based on the employee ID (`emp_id`) provided by the user.

- Output:



1001	45000.00	54000.0	594000.00	A	pass

Execution (Input: emp_id = 1001):

1. Monthly Salary: 45000.00
2. Annual Salary: 45000 × 12 = 540000
3. Bonus: 540000 × 10% = 54000
4. Total Annual Salary: 540000 + 54000 = 594000
5. Grade: A (as salary ≥ 500000)
6. Result: pass

4. Write a PL/SQL program to accept a string of characters (up to 100 characters) and determine the number of vowels and consonants in the string. Additionally, check if the string contains any digits, and if so, count the number of digits. Finally, display the counts for vowels, consonants, and digits.

Input: PL/SQL123
Output:

```
Number of vowels: 1
Number of consonants: 5
Number of digits: 3
```

Submission: Take screenshots of the execution and result of your queries in SQLPlus Tool and insert the captured image in a doc file for each and every question. Submit both doc and sql file in the given submission link in the Classroom. Submit files separately. Name the file as per the following format: 2022-1-60-001_LAB02.docx and 2022-1-60-001.sql_LAB02.