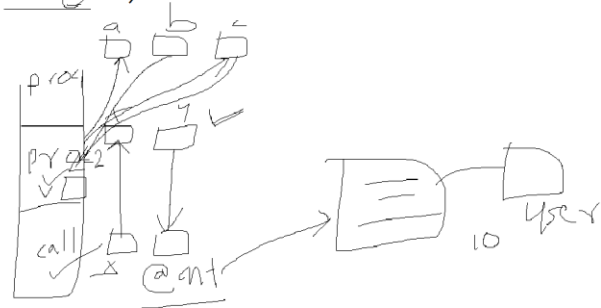```
delimiter //
create procedure proc1(in a int,out b varchar(10),inout c int)
begin
declare var1 int
set c = c+20
end//

create procedure proc2(in x int, out y int)
begin
declare v int
  select cnt(*) into f
  call proc1 (x,@d,@f)
end//

delimiter ;

set x=12
  call proc2 (x ,@cnt)   session variable

set x=12
  call proc2 (x ,@cnt)   session variable
```
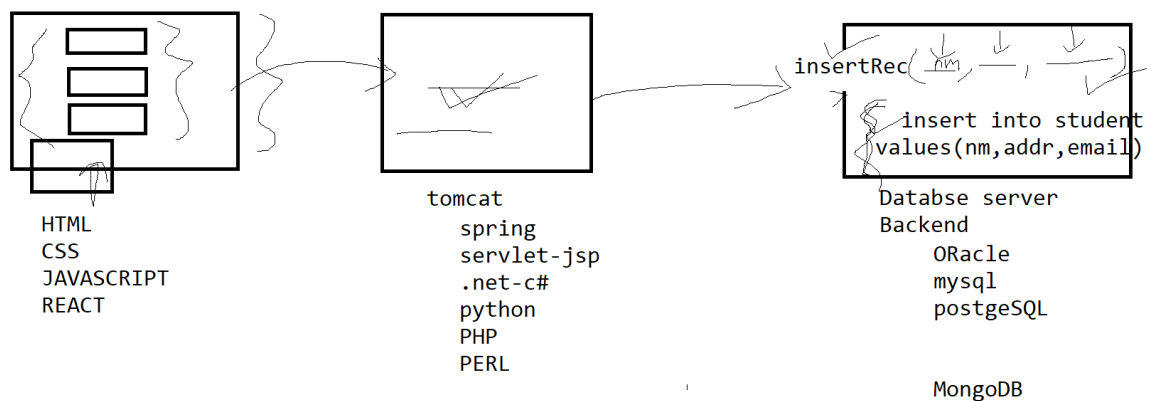
Execution flow in 3 tier application



```
                    tomcat                    insertRec( nm , — , → )
HTML                  spring                    insert into student
CSS                   servlet-jsp              values(nm,addr,email)
JAVASCRIPT            .net-c#                  Databse server
REACT                 python                   Backend
                      PHP                        ORacle
                      PERL                       mysql
                                                 postgeSQL

                                                 MongoDB
```

parameters

In—used to take input

Out – used to send output

Inout ---used to get i/p and send o/p

Write a procedure getdiscount to find discount% and discounted amount from product table for a particular product

If price <20   3%

Else   >=20 <40   7%

Else discount   10%

```
Delimiter //

Create procedure getdiscount(in ppid int,out discount float(5,2),out dis_amt double(9,2))

Begin

Declare vprice double(9,2);

select price into vprice

from product where pid=ppid;

if vprice <20 then

set discount = 0.03;

elseif vprice <40 then

set discount=0.07;

else

set discount=0.1;

end if;

set dis_amt= vprice - vprice*discount;


select discount,dis_amt;

end //

delimiter ;

call getdiscount(10,@discount,@amount)
```

In PLSQL there are 3 loops

While expression do
  Statements
End while;
	This is top tested loop, will repeat statements till the condition is true

REPEAT
    statements;
  UNTIL expression
END REPEAT
	This is bottom tested loop, will repeat statements until the given condition is false

Label1:Loop
  If condition then
    Leave Label1
  End if
endloop
	This is infinite loop , will continue execution till leave statement gets executed, leave statement is same as break statement, it forcefully stops the loop.
	
	In this loop you may use iterate statement, it is similar to continue statement in java,
	It will transfer the control to the beginning of the loop.

1. Write a procedure which accepts start and stop values and display all numbers between start and stop

2. Example   displaydata(10,20)   o/p 10,11,12,13,14,15……20

Delimiter //

Delimiter //

Create procedure displaydata(in start int,stop int)

Begin

Declare cnt int;

Declare str varchar(100) default '';

Set cnt=start;

While cnt<=stop do

   set str=concat(str,cnt,',');

   Set cnt=cnt+1;

End while;

set str=substr(str,1,length(str)-1);

Select str;

End//

Delimiter ;Delimiter ;

3. Write a procedure to accept a number from user and display its factorial
```
Delimiter //
Create procedure displayfactorial(in num int,out fact int)
Begin
  Declare start int default 1;
 Set fact=1;
  While start<=num do
      Set fact=fact*start;
      Set start=start+1;
  End while;
End//
```

<mark>Using repeat until loop</mark>
1. Write a procedure which accepts start and stop values and display all numbers between start and stop(use repeat …until loop)

Delimiter //

Create procedure displaydatarepeat(in start int, in stop int)

Begin

   Declare cnt int default start;

   Declare str varchar(100) default '';

   Repeat

    Set str=concat(str,cnt,',');

```
    Set cnt=cnt+1;

     Until  cnt > stop

   End repeat;

Set str=substr(str,1,length(str)-1);

Select str;

End//

Delimiter ;
```

2. Write a procedure to find factorial of a number(repeat until)
   ```
   Delimiter //
   Create procedure displayfactorialrepeat(in num int, out fact int)
   Begin
   Declare start int default 1;
   Set fact=1;
   Repeat
      Set fact=fact*start;
      Set start=start+1;
      Until start>num
   End repeat;
   Select fact;
   End//
   ```

```
Delimiter ;
```

3. Write a procedure which accepts start and stop values and display all numbers between start and stop(use loop …end loop)
   ```
   Delimiter //
   Create procedure displaydataloop(in start int,in stop int)
   Begin
   Declare str varchar(100) default '';
   Declare cnt int default start;

   L1:Loop

      Set str=concat (str,cnt,',');

      Set cnt=cnt+1;

      If cnt>stop then

         Leave l1;

      End if;

   End loop;

   Set str=substr(str,1,length(str)-1)

    Select str;
   ```

End//
Delimiter ;

4. Write a procedure to find factorial of a number using loop …end loop;
   Delimiter //
   Create procedure displayfactorialloop(in num int,out fact int)
   Begin
      Declare start int default 1;
      Set fact=1;
      L1:loop
         Set fact=fact*start;
         Set start=start+1;
         If start >num then
             Leave l1;
          End if;
      End loop
      Select fact;
   End//

Cursors

Cursors are used to read the data from the table row by row, and process it

Step by step procedure to use cursor

1. Declare cursor.
2. declare continue handler to stop the loop
3. open the cursor.
4. fetch the row from the cursor.
5. check whether reached to last row leave the loop
6. process the row.
7. goto step 4
8. once come out of the loop then close the cursor.