**LOW COHESION**

<?php

session\_start();

error\_reporting(0);

$dbServername = "ApnaBazaar.com:3306";

$dbUsername = "SupMarket123";

$dbPassword = "pass@123";

$dbName = "SupMarket";

$conn = mysqli\_connect($dbServername, $dbUsername, $dbPassword, $dbName);

if (!$conn) {

die('Could not connect: ' . mysql\_error());

}

function add\_to\_Inventory($conn) {

$slot\_id = mysqli\_real\_escape\_string($conn, $\_POST['slot\_id']);

$uid = mysqli\_real\_escape\_string($conn,$\_POST['user\_id']);

$quantity = mysqli\_real\_escape\_string($conn,$\_POST['qty']);

$size = mysqli\_real\_escape\_string($conn,$\_POST['size']);

if($size!='NA') {

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid' AND supMarket.slot\_id='$slot\_id' AND inventory.size='$size'";

}

else {

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid' AND inventory.slot\_id='$slot\_id'";

}

$result=mysqli\_query($conn, $sql);

$item\_count = mysqli\_num\_rows($result);

if($item\_count==1)

{

if($quantity==-1)

{

$row = mysqli\_fetch\_assoc($result);

$qty=$row['qty']+1;

$sql="UPDATE inventory SET qty='$qty' WHERE user\_id='$uid' AND slot\_id='$slot\_id'";

$result=mysqli\_query($conn, $sql);

}

else

{

$qty=$quantity;

$sql="UPDATE inventory SET qty='$qty' WHERE user\_id='$uid' AND slot\_id='$slot\_id'";

$result=mysqli\_query($conn, $sql);

}

}

else {

$qty="1";

if($size=='NA') {

$sql="INSERT INTO inventory (user\_id, slot\_id ,qty) VALUES ('$uid','$slot\_id','$qty')";

}

else {

$sql="INSERT INTO inventory (user\_id, slot\_id ,qty, size) VALUES ('$uid','$slot\_id','$qty','$size')";

}

$result=mysqli\_query($conn, $sql);

echo mysqli\_error($conn);

}

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid';";

$result=mysqli\_query($conn, $sql);

$item\_count = mysqli\_num\_rows($result);

return $item\_count;

}

function remove\_from\_inventory($conn) {

$slot\_id = mysqli\_real\_escape\_string($conn, $\_POST['slot\_id']);

$uid = mysqli\_real\_escape\_string($conn,$\_POST['user\_id']);

$sql = "DELETE FROM inventory WHERE inventory.user\_id='$uid' AND inventory.slot\_id='$slot\_id';";

$result=mysqli\_query($conn, $sql);

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid';";

$result=mysqli\_query($conn, $sql);

$item\_count = mysqli\_num\_rows($result);

return $item\_count;

}

function get\_user\_details\_for\_checkout($conn) {

$uid=$\_SESSION['user\_id'];

$sql\_user = "SELECT \* FROM users WHERE users.user\_id='$uid'";

$sql\_result = mysqli\_query($conn, $sql\_user);

$user\_row = mysqli\_fetch\_assoc($sql\_result);

return $user\_row

}

function get\_inventory\_slot\_for\_checkout($conn) {

if(isset($\_SESSION['user\_id'])) {

$uid=$\_SESSION['user\_id'];

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid'";

$result=mysqli\_query($conn, $sql);

$item\_count = mysqli\_num\_rows($result);

if ($item\_count==0) {

echo "<p style='text-align: center;'><b>No slots in inventory!</b></p>";

}

else {

while (($row = mysqli\_fetch\_assoc($result))){

$fid = $row['slot\_id'];

$imagesql = "SELECT \* FROM images WHERE images.slot\_id='$fid' AND images.image\_location LIKE '%primary%'";

$imageresult = mysqli\_query($conn, $imagesql);

$imagerow = mysqli\_fetch\_assoc($imageresult);

$sql\_slot = "SELECT \* FROM slot WHERE slot\_id='$fid'";

$slotresult = mysqli\_query($conn, $sql\_slot);

$slotrow = mysqli\_fetch\_assoc($slotresult);

$sql\_inventory\_slot="SELECT \* FROM inventory WHERE inventory.user\_id='$uid' AND inventory.slot\_id='$fid'";

$sql\_inventory\_slot\_result=mysqli\_query($conn, $sql\_inventory\_slot);

$sql\_inventory\_slot\_result\_row = mysqli\_fetch\_assoc($sql\_inventory\_slot\_result);

$total = $slotrow['price'] - $slotrow['price']\*$slotrow['discount'];

}

return $slot\_row;

}

function checkpayment(){

document.getElementById('total\_amt').value = <?php echo $total\_discounts; ?>;

if(document.getElementById('cod').checked) {

document.getElementById('pmt\_method').value='cod';

document.getElementById('Pay\_payment\_id').value='NA';

this.form.submit();

}

else if(document.getElementById('card').checked) {

rzp1.open();

event.preventDefault();

}

else if(document.getElementById('netbanking').checked) {

rzp2.open();

event.preventDefault();

}

else if(document.getElementById('wallet').checked) {

rzp3.open();

event.preventDefault();

}

else if(document.getElementById('upi').checked) {

rzp4.open();

event.preventDefault();

}

}

?>

Here, we can see that in low cohesion only one module is responsible to execute lots of jobs which are not relevant to a particular activity i.e. they do not have much in common. Thus low cohesion results in monolithic modules that are difficult to maintain, understand and reduces reusability.

**HIGH COHESION**

File 1: inventory\_in\_pocket.php

<?php

session\_start();

error\_reporting(0);

$dbServername = "inventory\_in\_pocket.com:3306";

$dbUsername = "inventoryAutomated";

$dbPassword = "pass@123";

$dbName = "inventoryAutomated";

$conn = mysqli\_connect($dbServername, $dbUsername, $dbPassword, $dbName);

if (!$conn) {

die('Could not connect: ' . mysql\_error());

}

function add\_to\_inventory($conn) {

$slot\_id = mysqli\_real\_escape\_string($conn, $\_POST['slot\_id']);

$uid = mysqli\_real\_escape\_string($conn,$\_POST['user\_id']);

$quantity = mysqli\_real\_escape\_string($conn,$\_POST['qty']);

$size = mysqli\_real\_escape\_string($conn,$\_POST['size']);

if($size!='NA') {

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid' AND inventory.slot\_id='$slot\_id' AND inventory.size='$size'";

}

else {

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid' AND inventory.slot\_id='$slot\_id'";

}

$result=mysqli\_query($conn, $sql);

$item\_count = mysqli\_num\_rows($result);

if($item\_count==1)

{

if($quantity==-1)

{

$row = mysqli\_fetch\_assoc($result);

$qty=$row['qty']+1;

$sql="UPDATE inventory SET qty='$qty' WHERE user\_id='$uid' AND slot\_id='$slot\_id'";

$result=mysqli\_query($conn, $sql);

}

else

{

$qty=$quantity;

$sql="UPDATE inventory SET qty='$qty' WHERE user\_id='$uid' AND slot\_id='$slot\_id'";

$result=mysqli\_query($conn, $sql);

}

}

else {

$qty="1";

if($size=='NA') {

$sql="INSERT INTO inventory (user\_id, slot\_id ,qty) VALUES ('$uid','$slot\_id','$qty')";

}

else {

$sql="INSERT INTO inventory (user\_id, slot\_id ,qty, size) VALUES ('$uid','$slot\_id','$qty','$size')";

}

$result=mysqli\_query($conn, $sql);

echo mysqli\_error($conn);

}

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid';";

$result=mysqli\_query($conn, $sql);

$item\_count = mysqli\_num\_rows($result);

return $item\_count;

}

function remove\_from\_inventory($conn) {

$slot\_id = mysqli\_real\_escape\_string($conn, $\_POST['slot\_id']);

$uid = mysqli\_real\_escape\_string($conn,$\_POST['user\_id']);

$sql = "DELETE FROM inventory WHERE inventory.user\_id='$uid' AND inventory.slot\_id='$slot\_id';";

$result=mysqli\_query($conn, $sql);

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid';";

$result=mysqli\_query($conn, $sql);

$item\_count = mysqli\_num\_rows($result);

return $item\_count;

}

?>

File 2: Checkout.php

<?php

session\_start();

error\_reporting(0);

$dbServername = "inventory\_in\_pocket.com:3306";

$dbUsername = "inventoryAutomated";

$dbPassword = "pass@123";

$dbName = "inventoryAutomated";

$conn = mysqli\_connect($dbServername, $dbUsername, $dbPassword, $dbName);

if (!$conn) {

die('Could not connect: ' . mysql\_error());

}

function get\_user\_details\_for\_checkout($conn) {

$uid=$\_SESSION['user\_id'];

$sql\_user = "SELECT \* FROM users WHERE users.user\_id='$uid'";

$sql\_result = mysqli\_query($conn, $sql\_user);

$user\_row = mysqli\_fetch\_assoc($sql\_result);

return $user\_row

}

function get\_inventory\_slot\_for\_checkout($conn) {

if(isset($\_SESSION['user\_id'])) {

$uid=$\_SESSION['user\_id'];

$sql = "SELECT \* FROM inventory WHERE inventory.user\_id='$uid'";

$result=mysqli\_query($conn, $sql);

$item\_count = mysqli\_num\_rows($result);

if ($item\_count==0) {

echo "<p style='text-align: center;'><b>No slots in inventory!</b></p>";

}

else {

while (($row = mysqli\_fetch\_assoc($result))){

$fid = $row['slot\_id'];

$imagesql = "SELECT \* FROM images WHERE images.slot\_id='$fid' AND images.image\_location LIKE '%primary%'";

$imageresult = mysqli\_query($conn, $imagesql);

$imagerow = mysqli\_fetch\_assoc($imageresult);

$sql\_slot = "SELECT \* FROM slot WHERE slot\_id='$fid'";

$slotresult = mysqli\_query($conn, $sql\_slot);

$slotrow = mysqli\_fetch\_assoc($slotresult);

$sql\_inventory\_slot="SELECT \* FROM inventory WHERE inventory.user\_id='$uid' AND inventory.slot\_id='$fid'";

$sql\_inventory\_slot\_result=mysqli\_query($conn, $sql\_inventory\_slot);

$sql\_inventory\_slot\_result\_row = mysqli\_fetch\_assoc($sql\_inventory\_slot\_result);

$total = $slotrow['price'] - $slotrow['price']\*$slotrow['discount'];

}

return $slot\_row;

}

function checkpayment(){

document.getElementById('total\_amt').value = <?php echo $total\_discounts; ?>;

if(document.getElementById('cod').checked) {

document.getElementById('pmt\_method').value='cod';

document.getElementById('Pay\_payment\_id').value='NA';

this.form.submit();

}

else if(document.getElementById('card').checked) {

rzp1.open();

event.preventDefault();

}

else if(document.getElementById('netbanking').checked) {

rzp2.open();

event.preventDefault();

}

else if(document.getElementById('wallet').checked) {

rzp3.open();

event.preventDefault();

}

else if(document.getElementById('upi').checked) {

rzp4.open();

event.preventDefault();

}

}

?>

Here, in high cohesion, we can see that there is a separate module for all the jobs to execute a particular activity or task. Thus, in high cohesion, we have modules performing a well-defined job. This gives is better maintaining facility.

**LOOSE COUPLING**

Payment Authorization

HTML Code

<div class="pull-right">

<button class="btn btn-primary" onclick="checkpayment();" name="placeinventory">

Place inventory

<i class="fa fa-chevron-right"></i>

</button>

</div>

Javascript Handler for calling the Payment API

function checkpayment(){

document.getElementById('total\_amt').value = <?php echo $total\_discounts; ?>;

if(document.getElementById('cod').checked) {

document.getElementById('pmt\_method').value='cod';

document.getElementById('Pay\_payment\_id').value='NA';

this.form.submit();

}

else if(document.getElementById('card').checked) {

rzp1.open();

event.preventDefault();

}

else if(document.getElementById('netbanking').checked) {

rzp2.open();

event.preventDefault();

}

else if(document.getElementById('wallet').checked) {

rzp3.open();

event.preventDefault();

}

else if(document.getElementById('upi').checked) {

rzp4.open();

event.preventDefault();

}

}

Passing Data Attributes to the API

var options = {

"key": "rzp\_test\_ceTDQ2ptdhHVA2",

"amount": <?php echo $total\_discounts\*100;?>, // 2000 paise = INR 20

"name": "inventoryAutomated",

"description": "Purchase from inventory in pocket",

"image": "/your\_logo.png",

"handler": function (response) {

document.getElementById('Pay\_payment\_id').value = response.Pay\_payment\_id;

document.getElementById('pmt\_method').value = 'card';

document.getElementById('checkout\_form').submit();

},

"prefill.method": "card",

"prefill.name": <?php echo json\_encode($user\_name);?>,

"prefill.email": <?php echo json\_encode($user\_email);?>,

"prefill.contact": <?php echo json\_encode($user\_mobile);?>,

"modal.escape" : "false",

"notes": {

"address": "Hello World"

},

"theme": {

"color": "#2fdab8"

}

};

var rzp1 = new Pay(options);

Here, the only knowledge that the Javascript Module has about the classes implemented in the Pay Modules, is what the API has exposed through its interface, thus the two modules are said to be loosely coupled