



# Chương 5

## Web API

CT275 – CÔNG NGHỆ WEB

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## *MVC Architecture Introduction*

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*(Oxford English Dictionary)*

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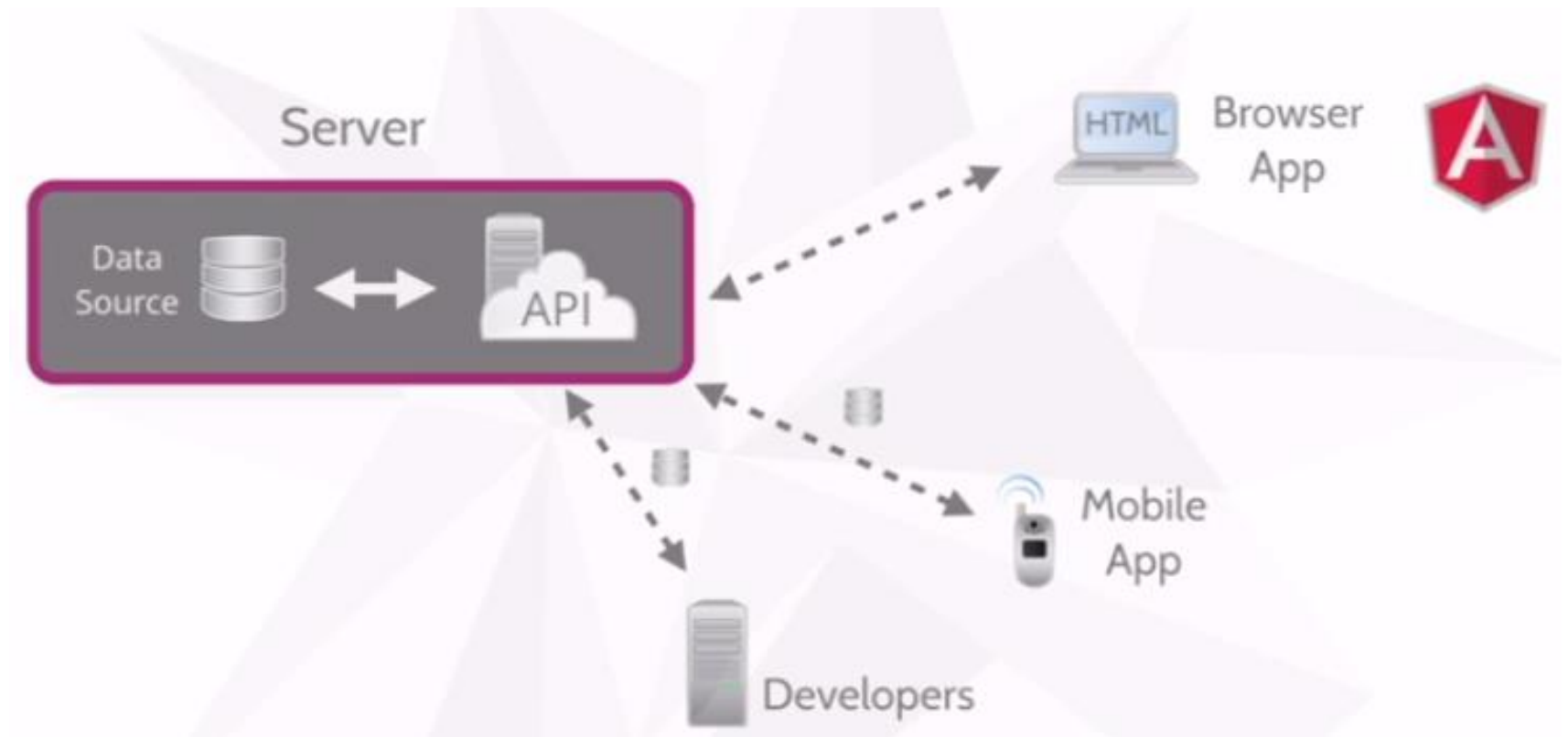
*(Investopedia)*

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  - *(vs. các website: giao tiếp người – máy tính)*
  - *(vs. HTML chỉ dùng để định dạng dữ liệu)*

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## *REST Basics*



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- PUT <new resource URI>  
{  
    . . . //các thuộc tính của tài nguyên mới  
}



- PUT /lectures/clientSpecifiedID  
{  
    //các thuộc tính lecturer mới  
}



- - PUT <existing resource URI>  
{  
    . . . //thuộc tính của tài nguyên hiện có  
}
- - PUT /lecturers/existingID  
{  
    "name": "Bùi Võ Quốc Bảo",  
    "dept": "IT"  
}



- - POST <new resource ID>  
{  
    . . . //các thuộc tính cho tài nguyên mới  
}
- - POST /lecturers  
{  
    "name": "Bùi Võ Quốc Bảo"  
}





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- - POST <existing resource ID>  
{  
    . . . //các thuộc tính cho tài nguyên sẵn có  
}
  - - POST /lecturers/003025  
{  
    "name": "Nguyen Van A"  
}



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Request: GET /api/v1/cars/711

Response:

```
{
  "id": 711,
  "manufacturer": "bmw",
  "model": "X5",
  "seats": 5,
  "drivers": [{
    "id": "23",
    "name": "Stefan Jauker",
    "links": [{"rel": "self",
               "href": "/api/v1/drivers/23"}]
  }]
}
```

## *REST API Authentication*



X-Api-Key: 9944b09199c62bcf9418ad846dd0e4bety89eff





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```
//Client
<?php
$publicHash = '3441df0babcb2a2dda551d7cd39fb235bc4e09cd1e4556bf261bb...';
$privateHash = 'e249c439ed7697df2a4b045d97d4b9b7e1854c3ff8dd668c779...';
$content = json_encode(array('test' => 'content'));

$hash = hash_hmac('sha256', $content, $privateHash);
$headers = array('X-Public: '.$publicHash,
                 'X-Hash: '.$hash);

$ch = curl_init('http://test.localhost:8080/api-test/');
curl_setopt($ch,CURLOPT_HTTPHEADER, $headers);
curl_setopt($ch,CURLOPT_RETURNTRANSFER, true);
curl_setopt($ch,CURLOPT_POSTFIELDS, $content);

$result = curl_exec($ch);
curl_close($ch);
echo "RESULT\n=====\n".print_r($result, true)."\n\n";
?>
```



```
<?php
require_once 'vendor/autoload.php';
$app = new \Slim\App();
$app->post('/', function($request, $response) {
    $publicHash = $request->getHeaderLine('X-Public');
    $contentHash = $request->getHeaderLine('X-Hash');
    $privateHash = 'e249c439ed7697df2a4b045d97d4b9b7e1854c3ff8dd668c779...';

    $content = $request->getBody();
    $hash = hash_hmac('sha256', $content, $privateHash);

    if ($hash == $contentHash){
        echo "match!\n";
    }
});
?>
```

## *Creating and Using a REST API*



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- ```
{
  "status" : "success",
  "data" : {
    "post" : { "id" : 1,
    "title" : "A blog post",
    "body" : "Some useful content" }}
}

{
  "status" : "success",
  "data" : {
}
```



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```
{  
  "status" : "failed",  
  "data" : {"title" : "A title is required"}  
}
```

- 

```
{  
  "status" : "error",  
  "message" : "Unable to communicate with database"  
}
```



- →
  - `var j={"name":"binchen"};`
  - `JSON.stringify(j); // '{"name":"binchen"}'`
- →
  - `var json = '{"result":true,"count":1}';`
  - `var obj = JSON.parse(json);`



```
$.ajax({  
  type: 'GET',  
  url: '/api/contacts',  
  data: {name: 'Bao'},  
  dataType: 'json',  
  success: function (res) {  
  
  }  
});
```





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```
var contact = {name: ' Bao ',phone: '1234567890'};
$.ajax({
  type: 'POST',
  url: '/api/contacts',
  data: JSON.stringify(contact),
  contentType: 'application/json',
  success: function (res) {
    alert(res)
  }
});
```



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