به نام خدا

Full-Stack

and nothing else matters

Bu-Ali Sina University, Summer 2019

Session 1

Greetings

MOHAMMAD R. TAYYEBI

Undergraduate, Computer Engineering

Background:

WorldSkills Competitor,

Khwarizmi Awarded

Contacts:

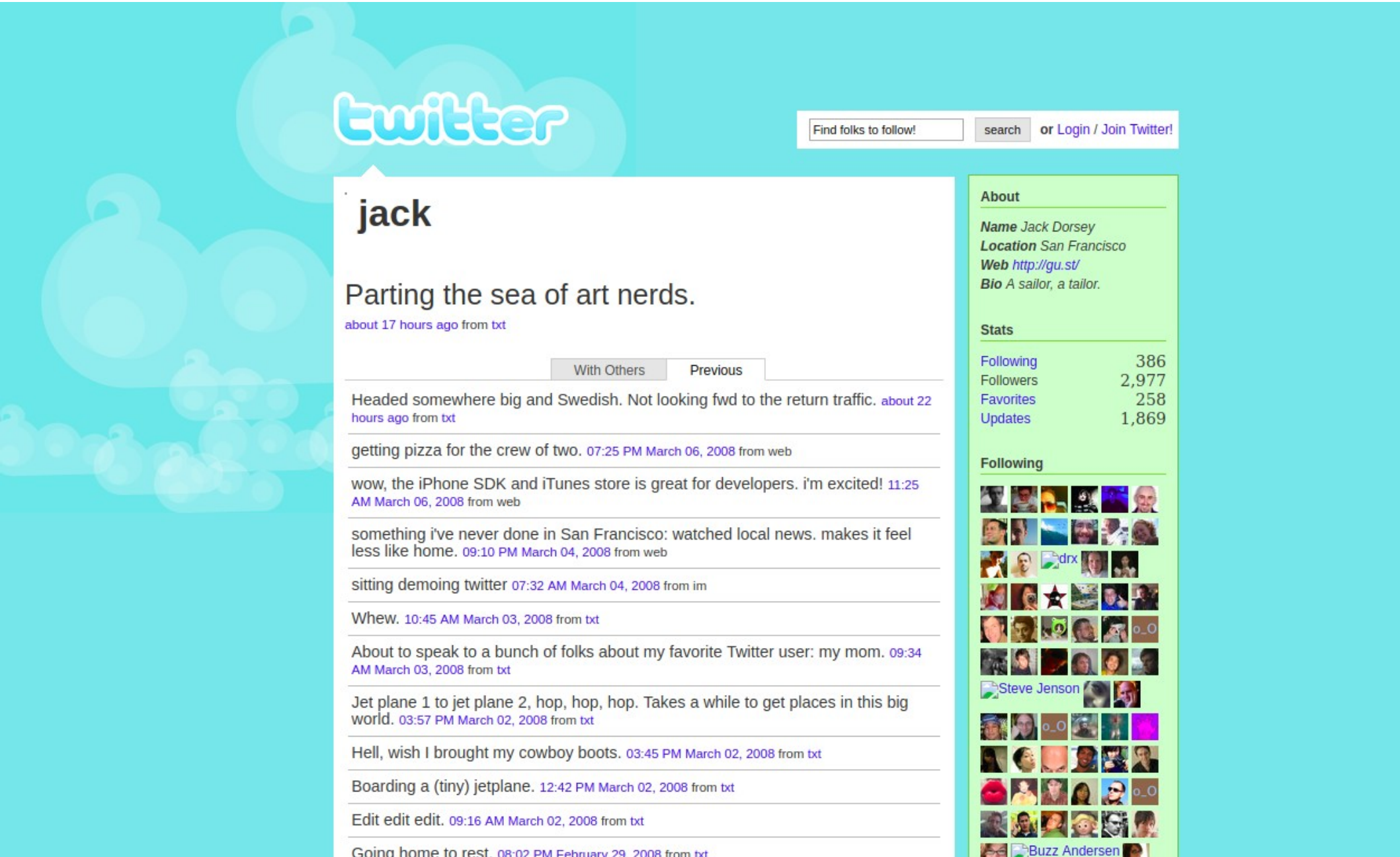
mailto:rexa@gordarg.com

http://kouy.ir/tayyebi

It doesn't matter how many resources you have.

If you don't know how to use them,
it will never be enough.

Project

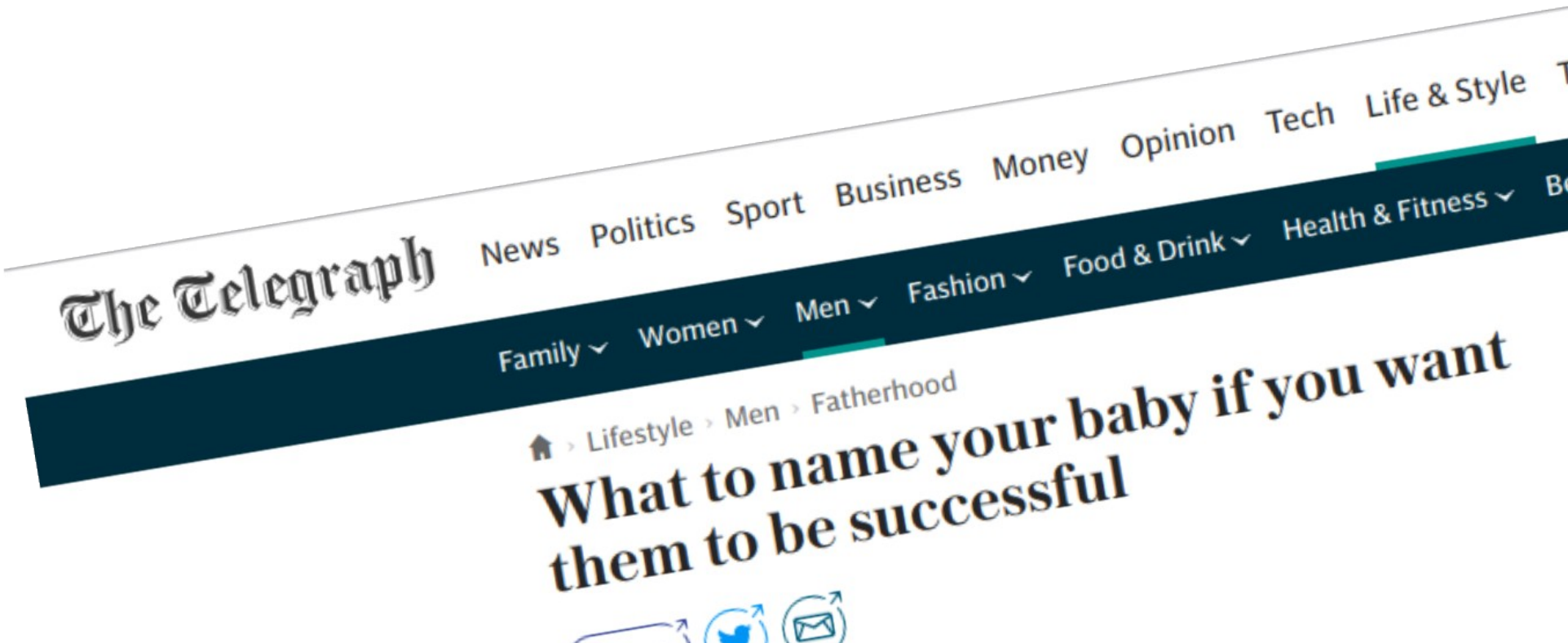

twitter
Find folks to follow!
search
or Login / Join Twitter!
jack
Parting the sea of art nerds.
about 17 hours ago from txt
With Others
Previous
Headed somewhere big and Swedish. Not looking fwd to the return traffic. about 22 hours ago from txt
getting pizza for the crew of two. 07:25 PM March 06, 2008 from web
wow, the iPhone SDK and iTunes store is great for developers. i'm excited! 11:25 AM March 06, 2008 from web
something i've never done in San Francisco: watched local news. makes it feel less like home. 09:10 PM March 04, 2008 from web
sitting demoing twitter 07:32 AM March 04, 2008 from im
Whew. 10:45 AM March 03, 2008 from txt
About to speak to a bunch of folks about my favorite Twitter user: my mom. 09:34 AM March 03, 2008 from txt
Jet plane 1 to jet plane 2, hop, hop, hop. Takes a while to get places in this big world. 03:57 PM March 02, 2008 from txt
Hell, wish I brought my cowboy boots. 03:45 PM March 02, 2008 from txt
Boarding a (tiny) jetplane. 12:42 PM March 02, 2008 from txt
Edit edit edit. 09:16 AM March 02, 2008 from txt
About
Name Jack Dorsey
Location San Francisco
Web http://gu.st/
Bio A sailor, a tailor.
Stats
Following 386
Followers 2,977
Favorites 258
Updates 1,869
Following
drx
Steve Jenson
Buzz Andersen

named.service

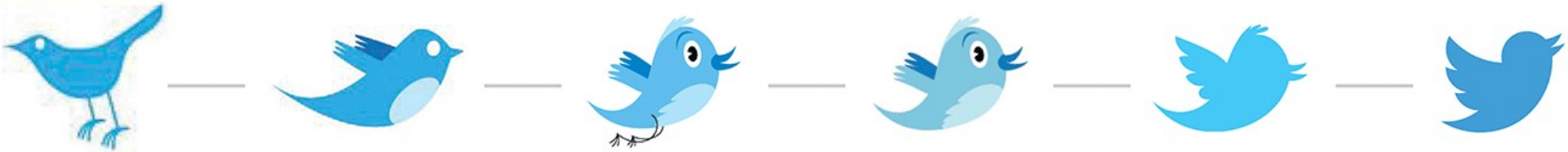
Let’s call it Kuku

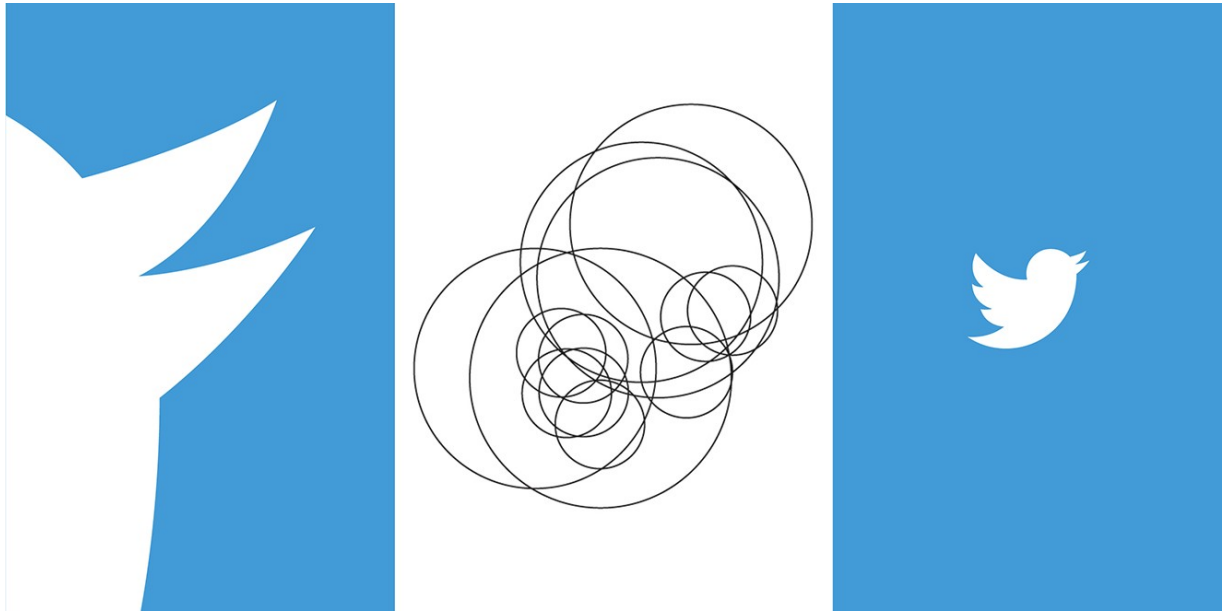
Common Cuckoo

kukuapp.ir



Twitter Logo (Just4Fun)





KUKU LOGO

Limitations

- Are them real?
- “What if not … “

Forum

https://forum.kukuapp.ir/showthread.php?tid=6

من یه سوال دارم

Enci
Junior Member

08-05-2019, 02:11 PM

تست تست تست تست تست تست

IP Address: Logged

Email Find Rate

tayyebi
Administrator

08-05-2019, 07:20 PM

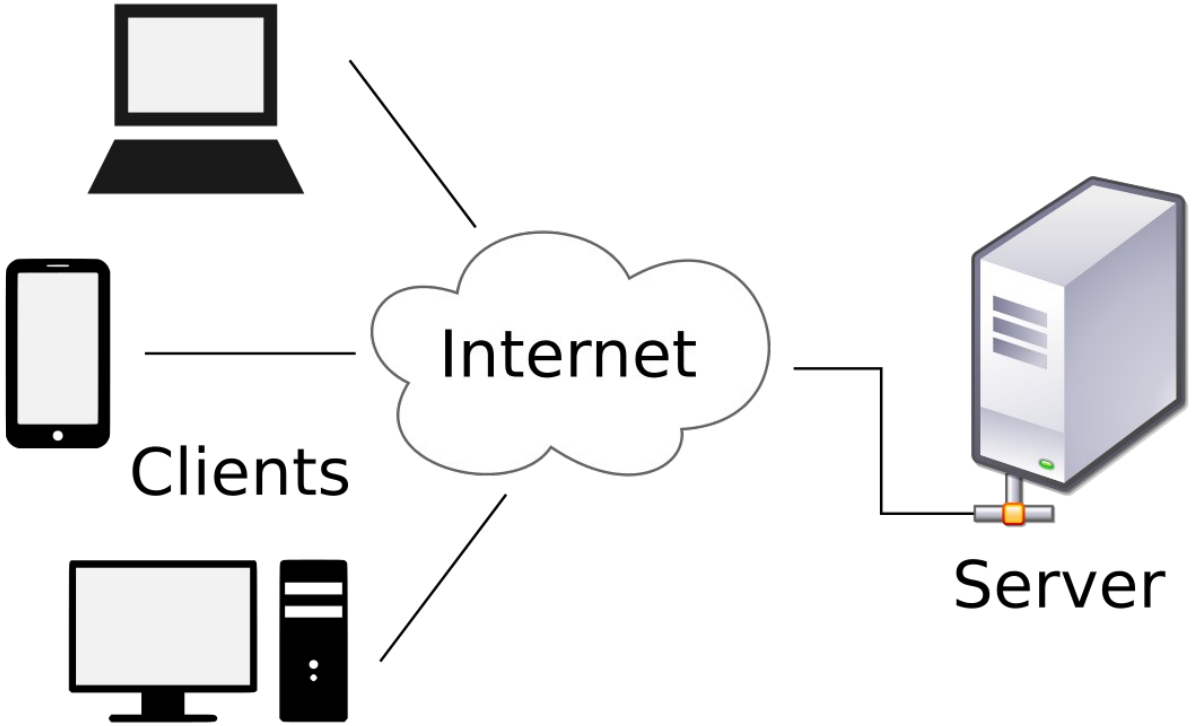
اولین چراغ روشن.

IP Address: Logged

Find

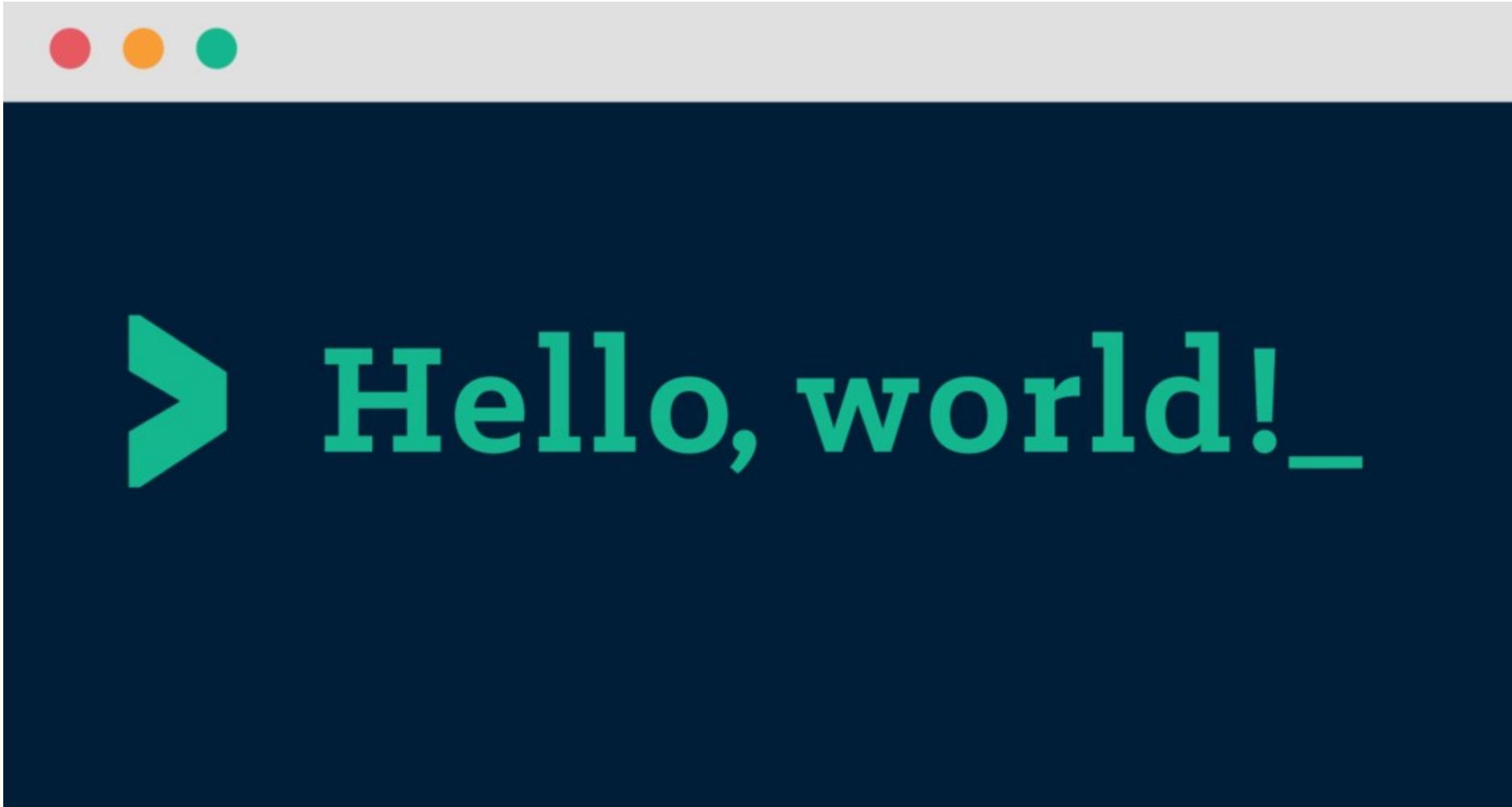
Demo

- http://Skills.Community
- Website
- App (Flutter)



Implementation

- Hands on HTML, CSS, and JS



امین
@seyedaminhabibi

یه دوست دارم با زبون های مختلف hello world مینویسه و
اضافه میکنه به رزومه ش :)))

Translate Tweet

9:38 PM · Sep 24, 2017 · Twitter for Android

10 Likes

We just quote content, and shout their author’s name for rights!
No responsibility about any mentioned person or reference!

Resources and Images

- https://www.chrisblakely.dev/the-10-minute-road-map-to-becoming-a-junior-full-stack-web-developer/
- https://www.reddit.com/r/im14andthisisdeep/comments/7ouel5/it_doesnt_matter_how_many_resources_you_have_if/
- https://www.audubon.org/field-guide/bird/common-cuckoo
- https://web.archive.org/web/20080309215840/http://twitter.com/Jack

Resources and Images

- https://www.adweek.com/brand-marketing/how-twitters-logo-perched-in-our-cultural-consciousness-and-came-to-signify-the-brand-all-by-itself/
- https://hackernoon.com/a-repository-with-the-example-of-printing-hello-world-in-a-lot-of-programming-languages-1f870ad8d167
- https://en.wikipedia.org/wiki/Client%E2%80%93server_model
-

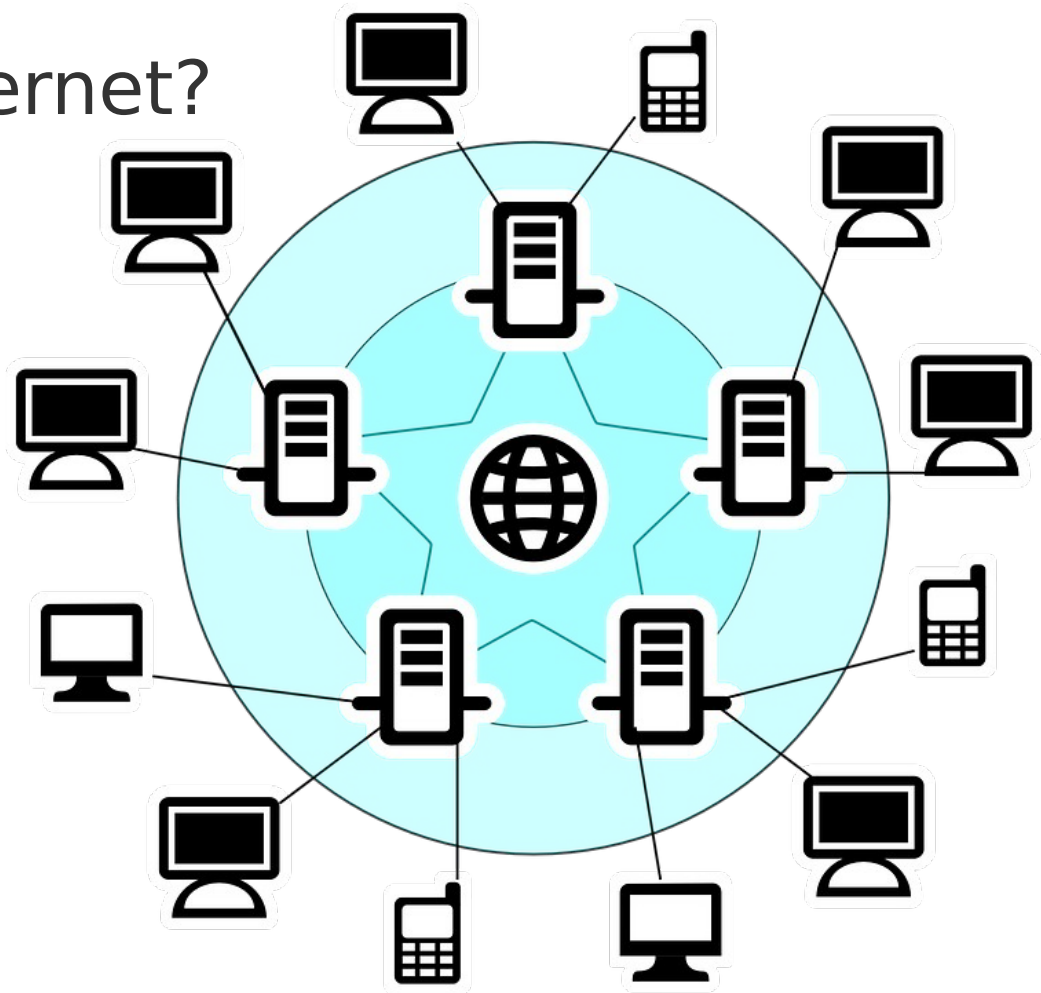
Session 2

به نام خدا

"Elephant in the room" is a metaphorical idiom in English for an obvious problem or risk that no one wants to discuss. Wikipedia

Session 1 - Review

- What is Internet?



Session 1 - Review

- Lower level network. (Router)

Session 1 - Review

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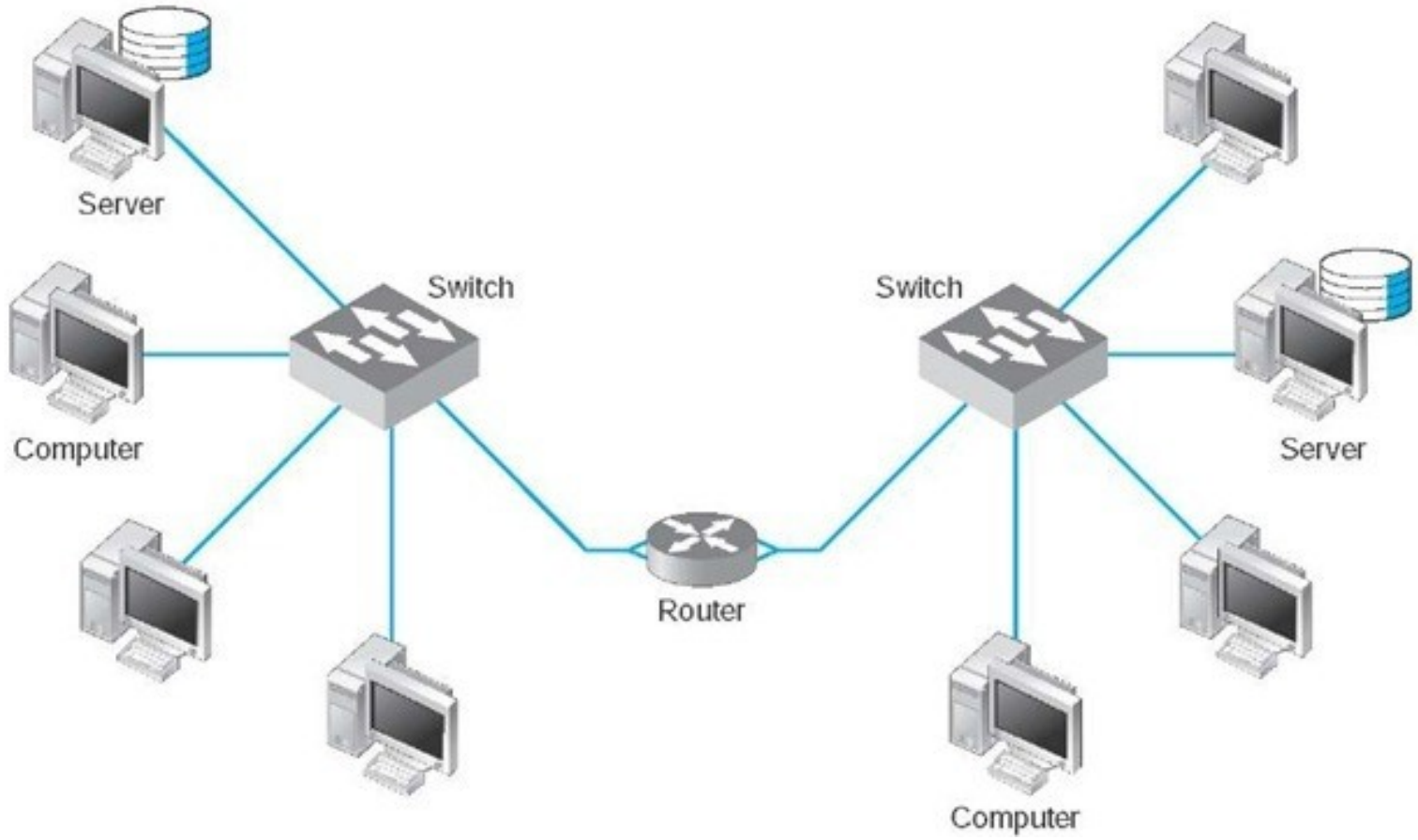
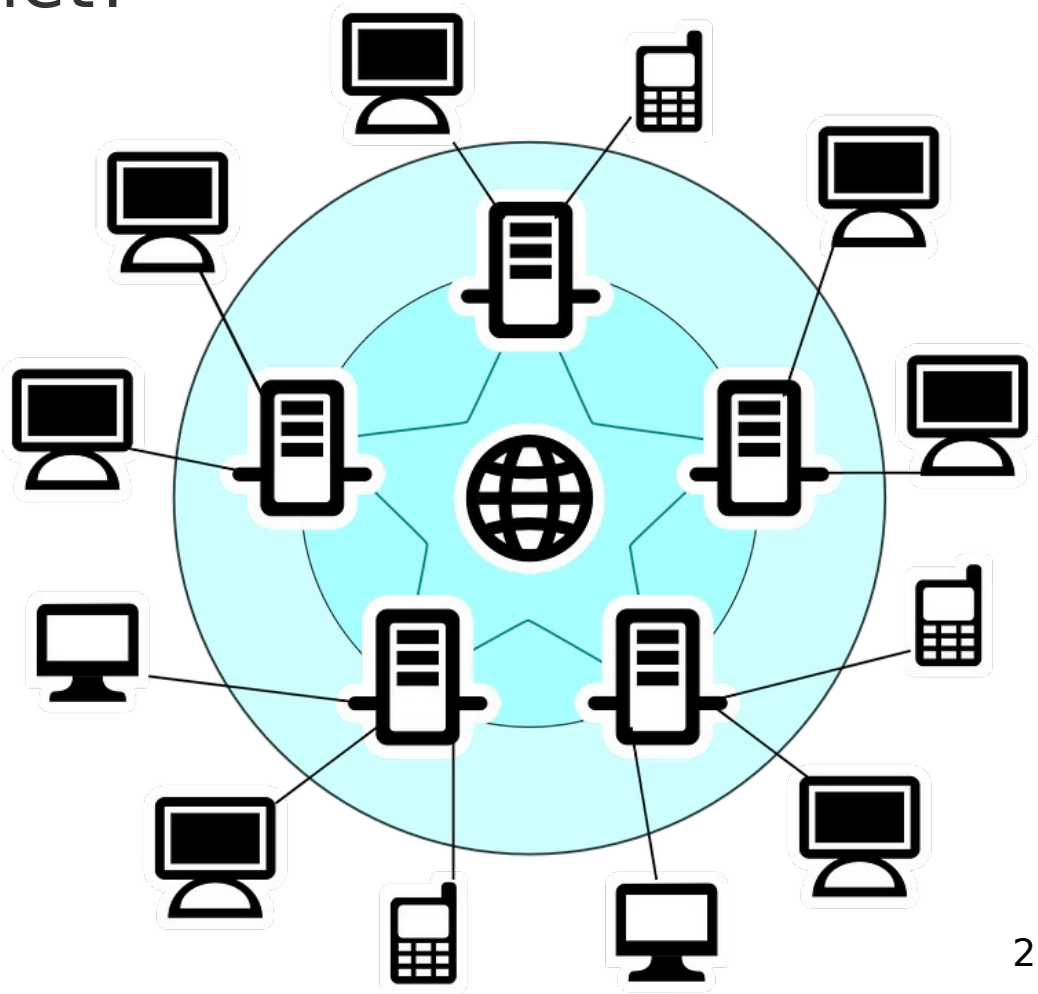


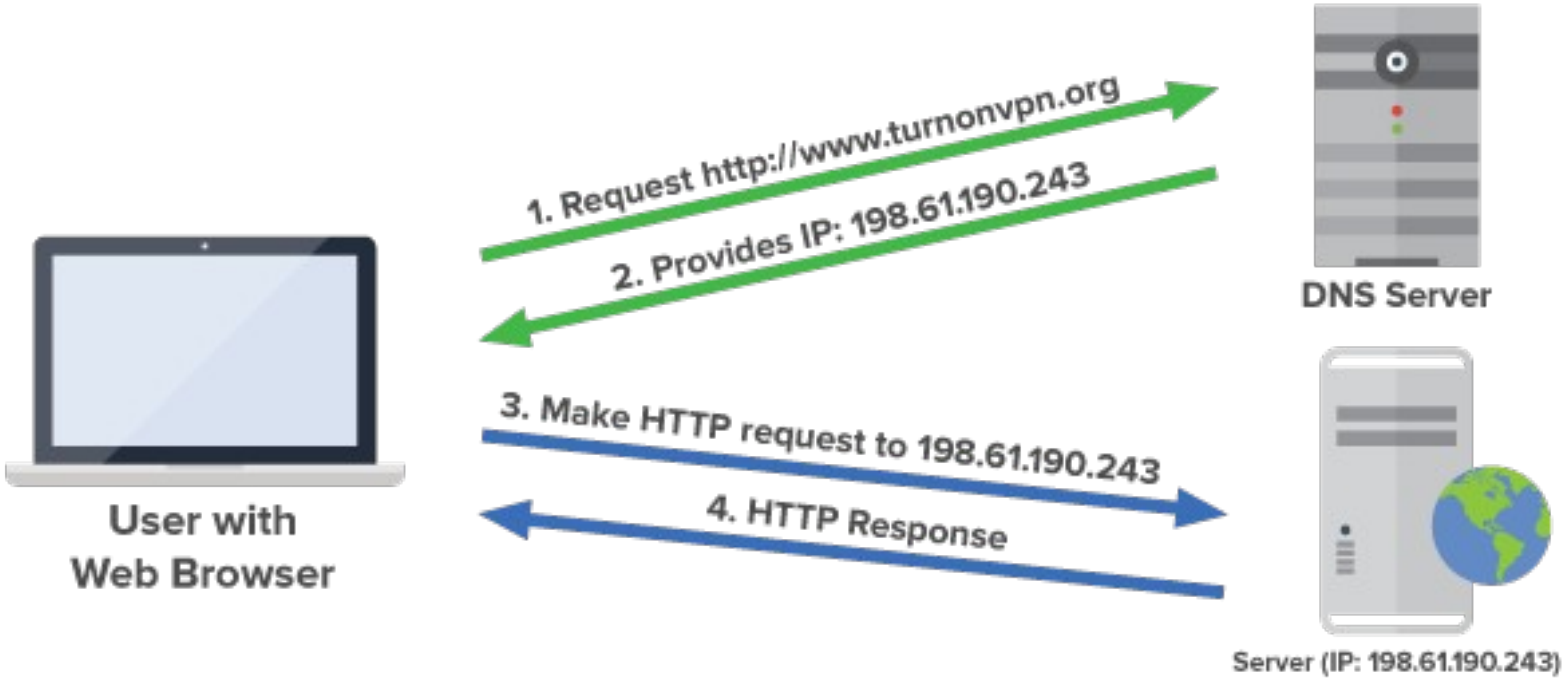
Session 1 - Review

- Routers in Internet?



Session 1 - Review

- Lower level network. (Domain Name Server)



Session 1 - Review

- Best machine for a hosting server

Session 1 - Revi

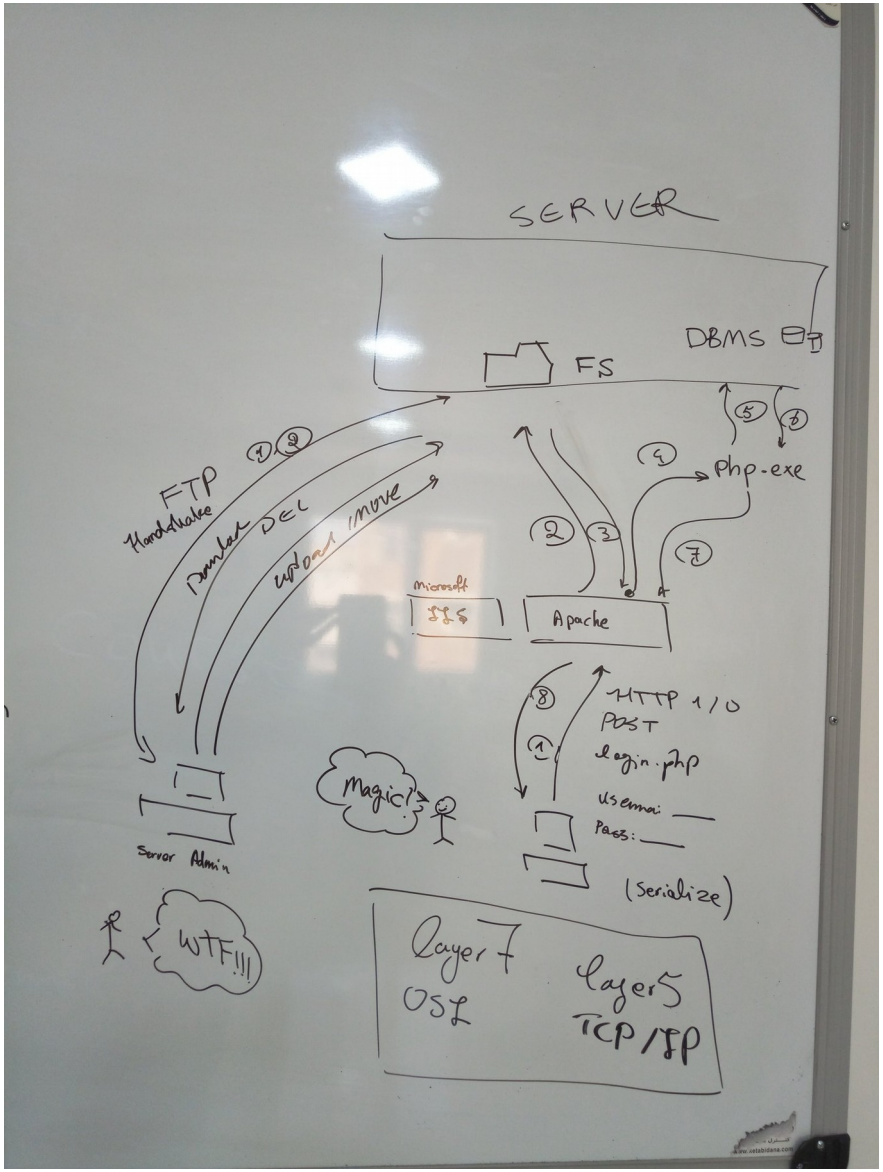
- Be e for a hosting s

Session 1 - Review

- HP ProLiant DL380 G10

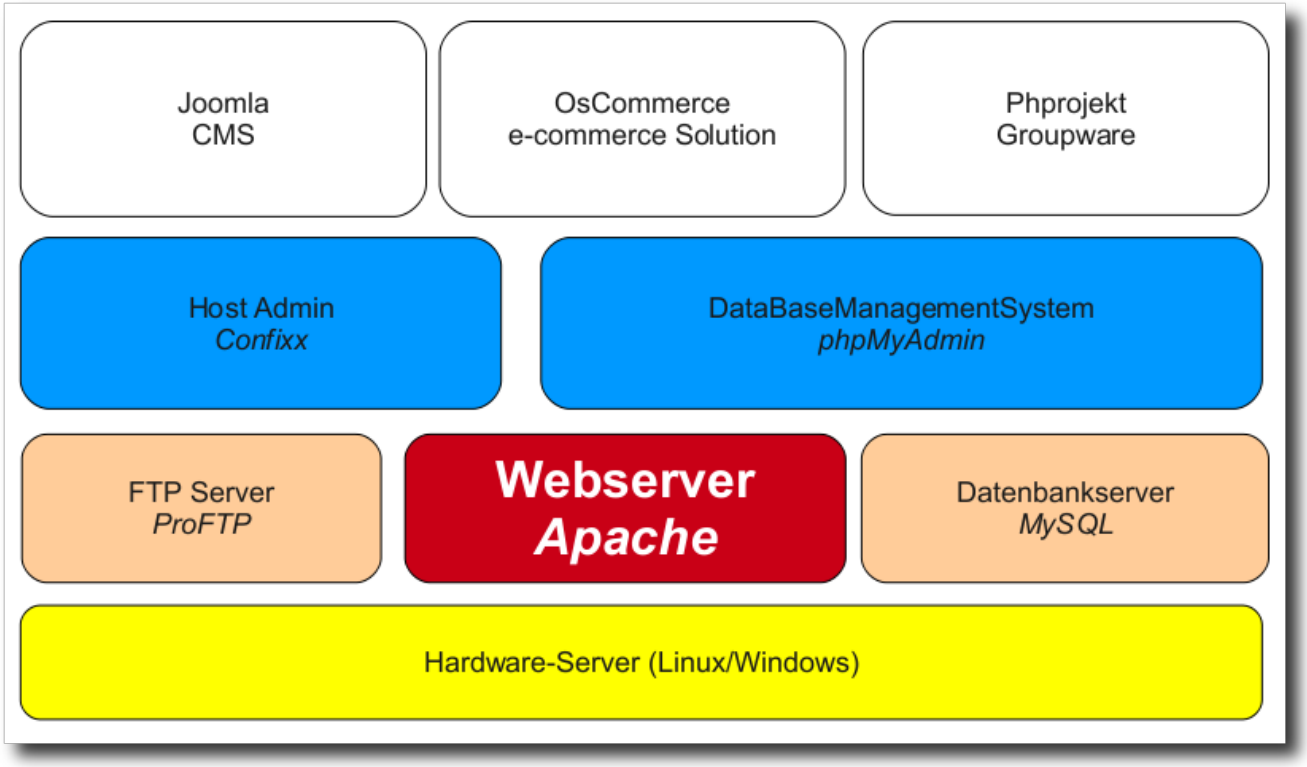
Session 1 - Review

- What is a Web Server?



Session 1 - Review

- What is a Web Server?



Session 1 - Review

- HTTP Header

Test Request - login

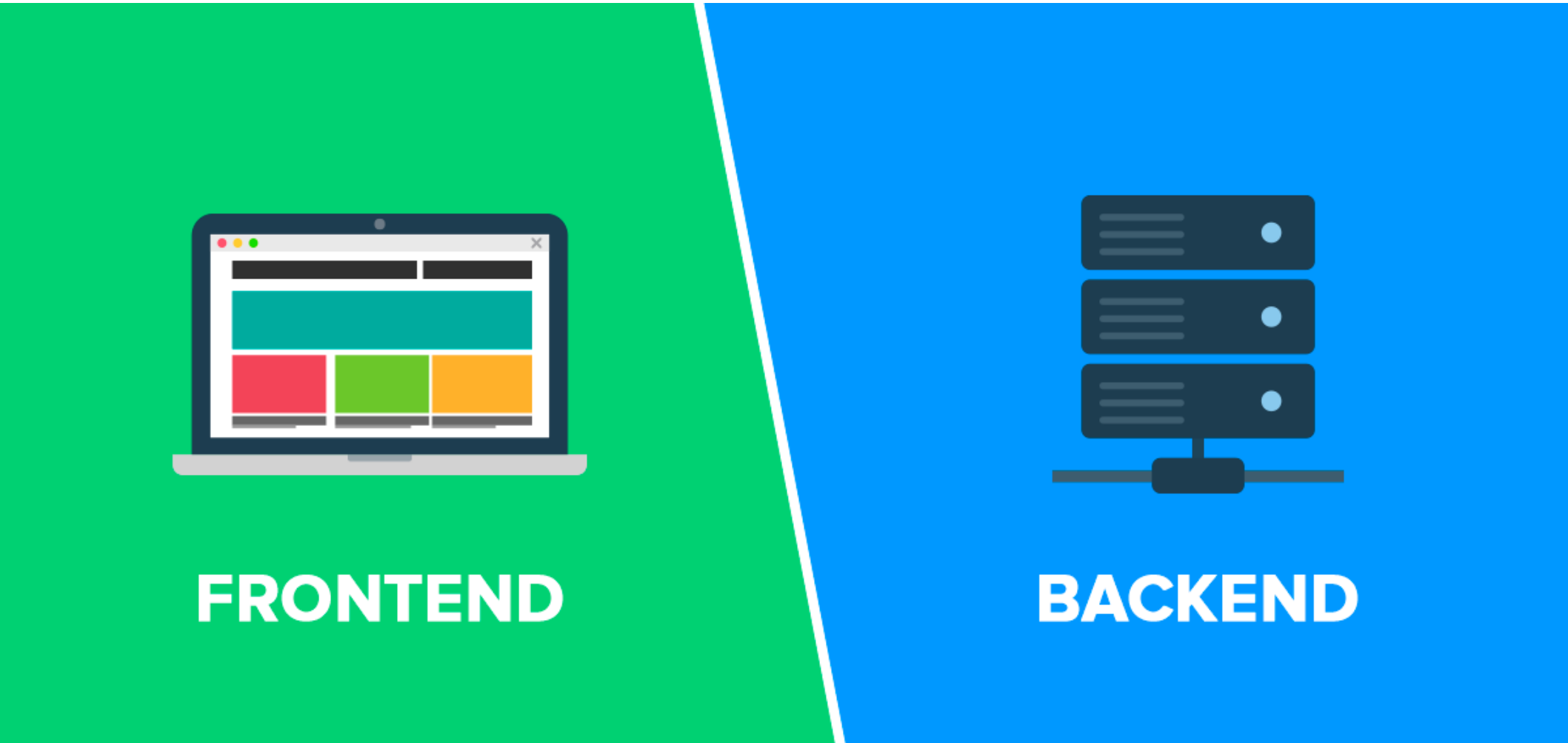
http://127.0.0.1:8088/mockServiceSoapBinding

XML Raw

```
POST http://127.0.0.1:8088/mockServiceSoapBinding HTTP/1.1
Accept-Encoding: gzip,deflate
Content-Type: text/xml;charset=UTF-8
SOAPAction: "http://www.soapui.org/sample/login"
Content-Length: 505
Host: 127.0.0.1:8088
Connection: Keep-Alive
User-Agent: Apache-HttpClient/4.1.1 (java 1.5)

<soapenv:Envelope xmlns:sam="http://www.soapui.org/sample/" xmlns:soap
 <soapenv:Header><wsse:Security xmlns:wsse="http://docs.oasis-open.org/v
 <soapenv:Body>
 <sam:login>
 <username>Loginn0.196</username>
 <password>Loginn123</password>
 </sam:login>
 </soapenv:Body>
</soapenv:Envelope>
```

Session 1 - Review

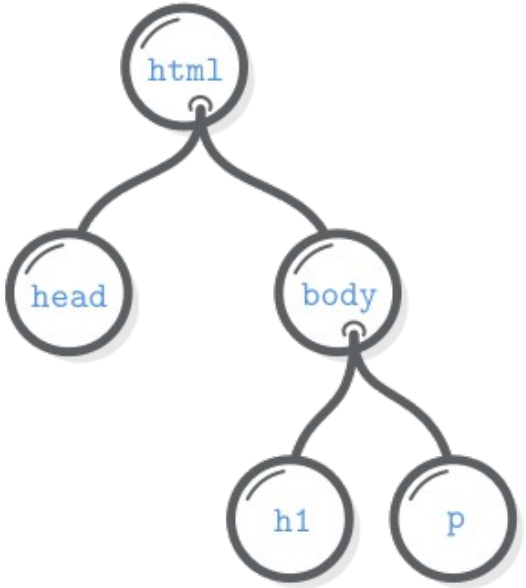
- What is a client-side program?



Session 1 - Review

HTML CSS JS

Session 1 - Review



HTML

CSS

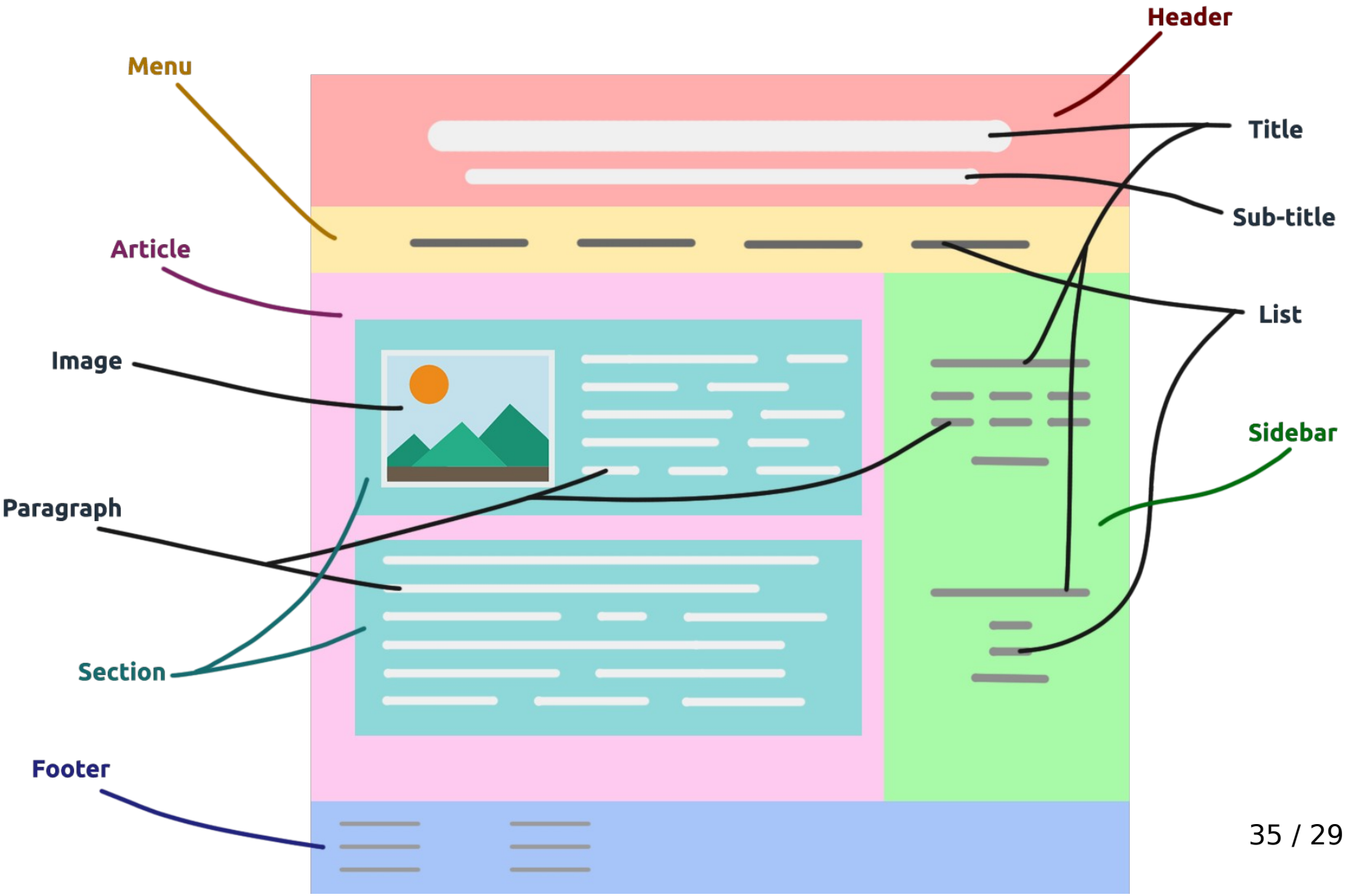
JAVASCRIPT

HTML

Session 1 - Review

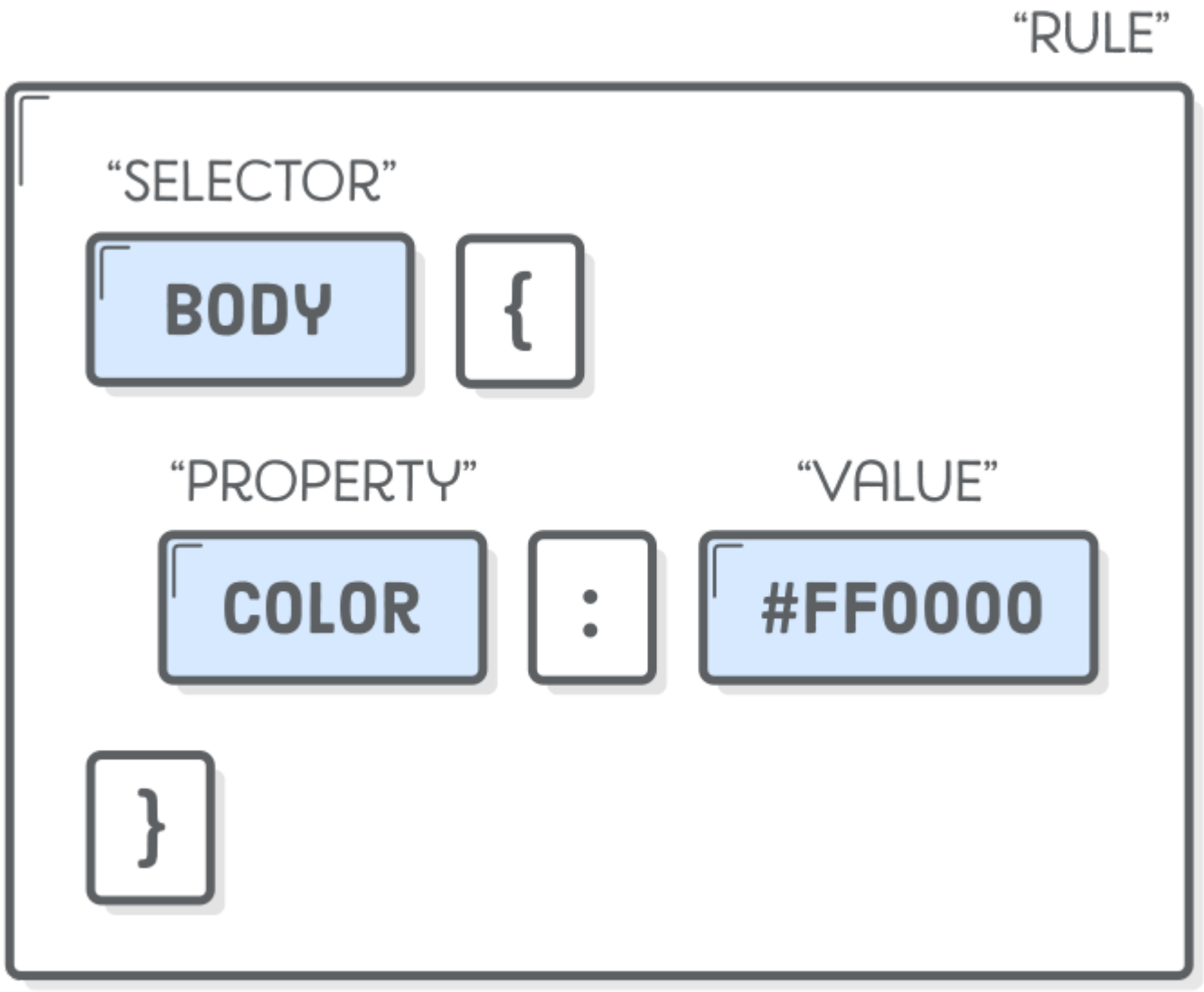
```
1  <!DOCTYPE html>

2  <html>

3      <head>
4      <meta charset="utf-8">
5      <title>Title here</title>
       </head>

6      <body>
       Page content goes here.
       </body>

       </html>
```

Session 1 - Review

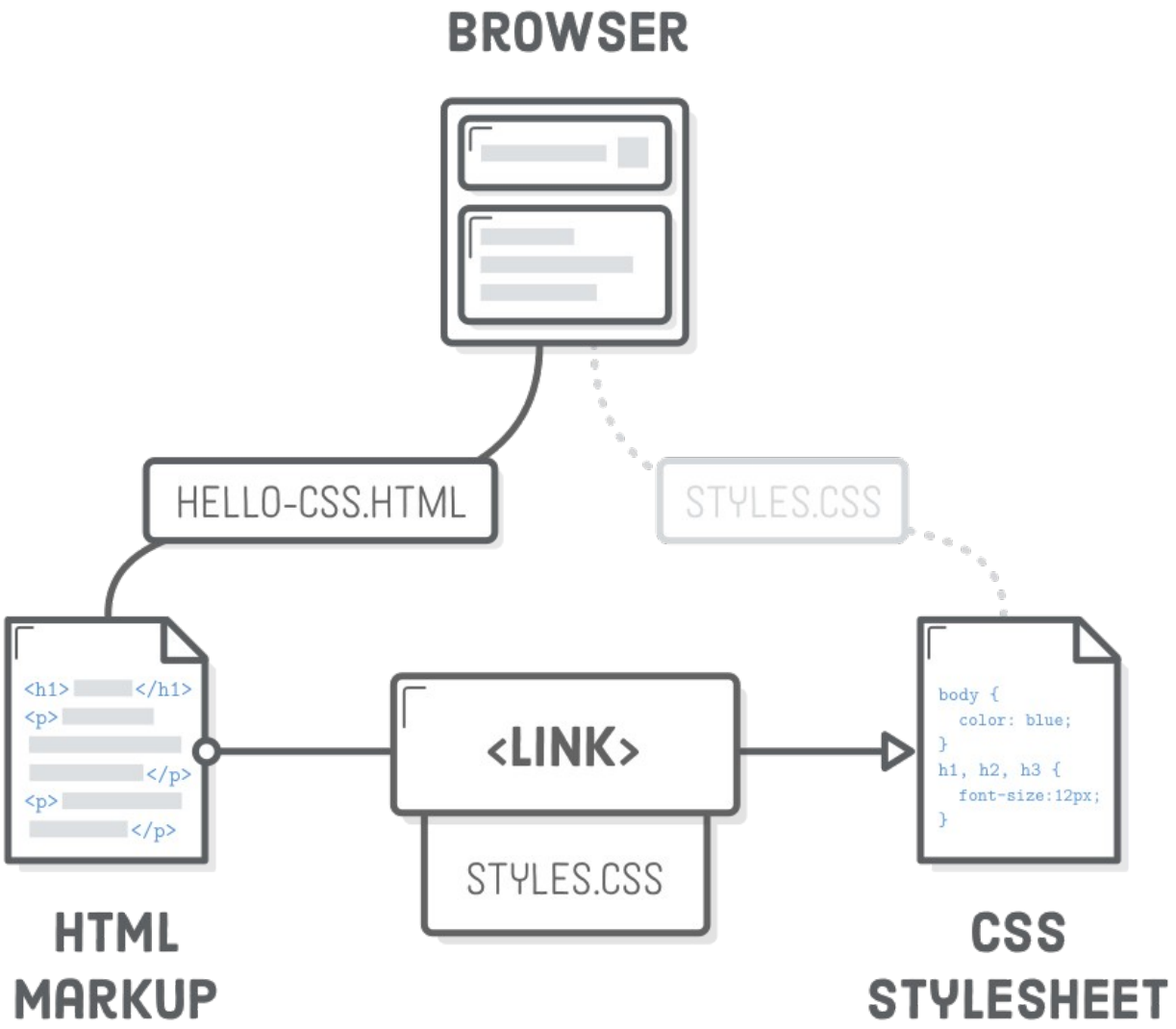


CSS

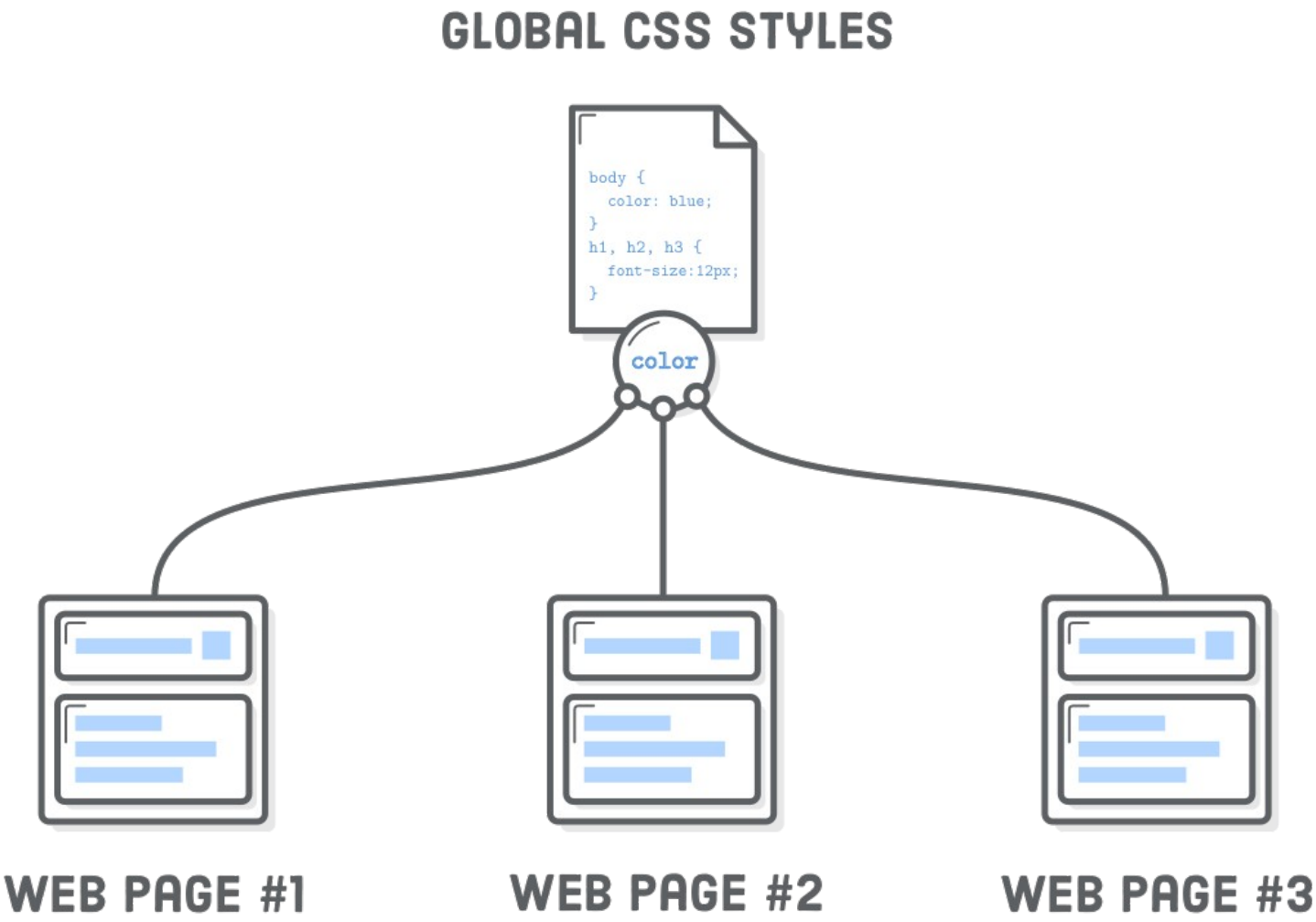
Session 1 - Review



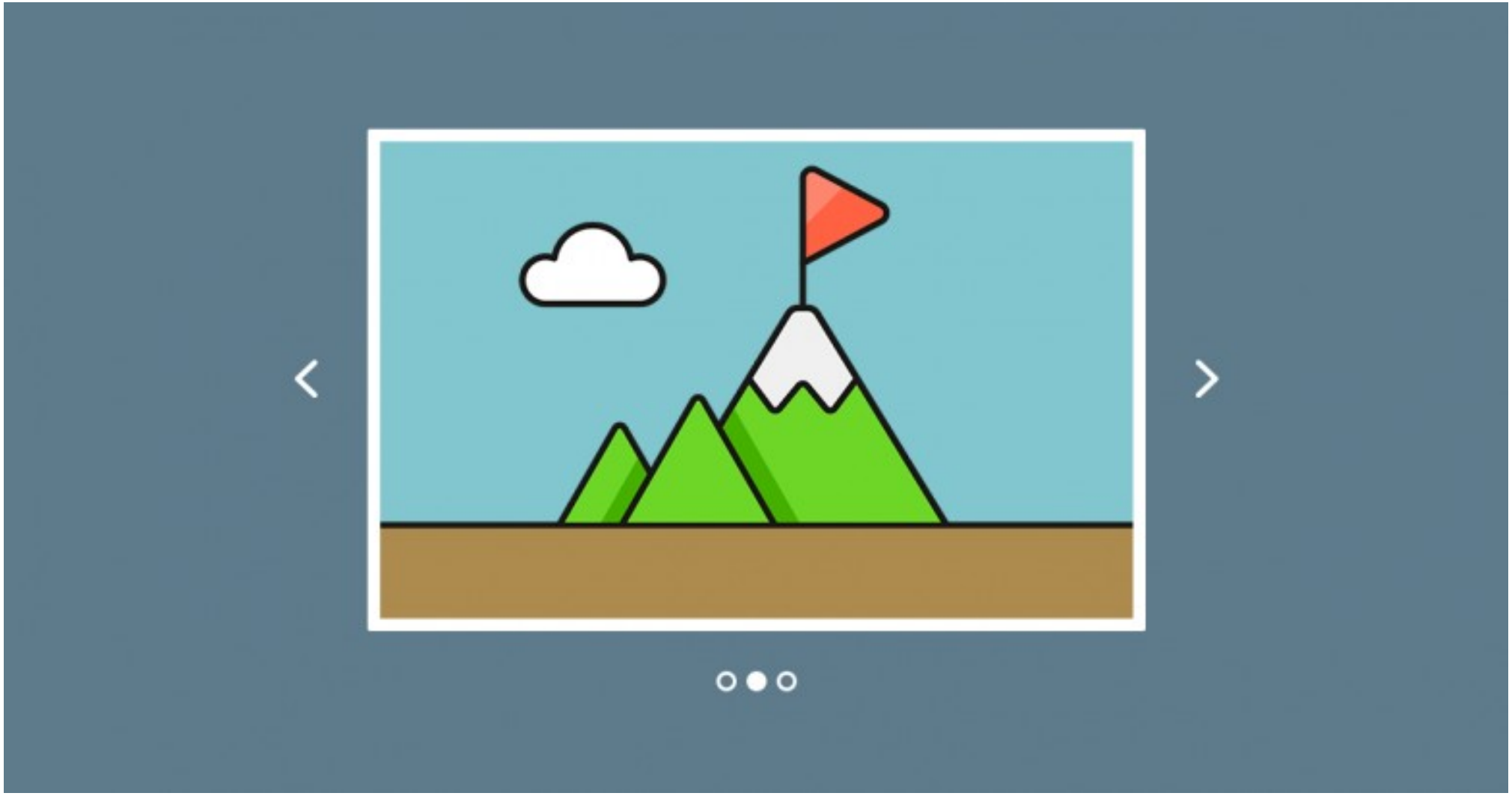
Session 1 - Review



Session 1 - Review



Session 1 - Review

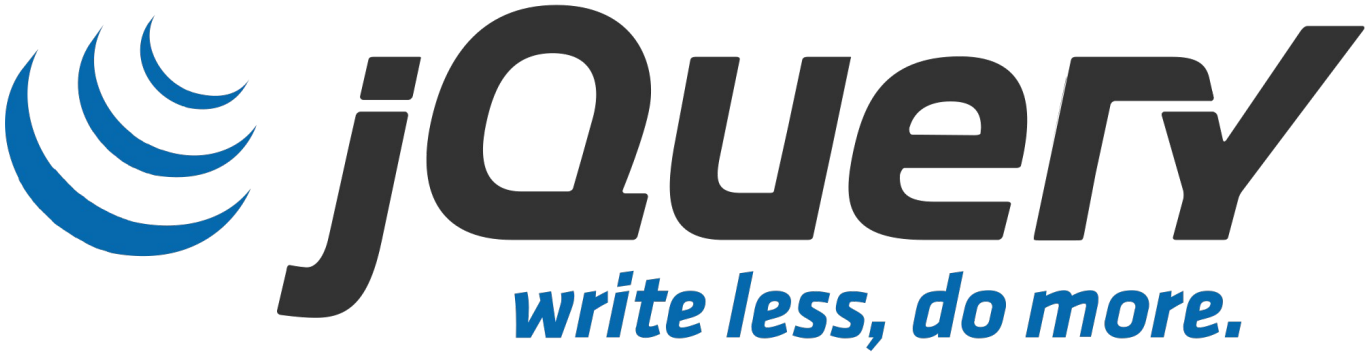


Session 1 - Review

Codes, Codes, Codes everywhere!

Session 1 - Review

Solution,



Session 1 – Review

```
var d = document.getElementsByClassName("goodbye");
var i;
for (i = 0; i < d.length; i++) {
   d[i].className = d[i].className + " selected";
}
```

```
$(".goodbye").addClass("selected");
```

Session 1 - KWRDs

(Thanx to wordclouds.com)

Very first days

Last days :))))))

(10:10)
Every night
to check the Forum

Forum Top Members (S1)

- From community for the community
- We are proud of you! <3

Member List A B C D E F G H I J K L M N O P Q R S T U

Avatar	Username	Joined	Last Visit [asc]	Post Count	Thread Count
	tayyebi Administrator	07-26-2019, 01:31 PM	Less than 1 minute ago	11	7
	3amp Newbie	08-05-2019, 11:34 AM	7 minutes ago	0	0
	Masoumeh Newbie	08-05-2019, 11:34 AM	35 minutes ago	0	0
	AmirHosseinBabaeayan Moderator	07-26-2019, 02:29 PM	1 hour ago	0	0
	missnull Newbie	08-05-2019, 11:34 AM	1 hour ago	0	0
	zaheri Newbie	08-05-2019, 11:35 AM	2 hours ago	0	0
	Honey Newbie	08-05-2019, 11:36 AM	2 hours ago	0	0
	zeysh Junior Member	08-05-2019, 11:32 AM	3 hours ago	1	0
	Enci Junior Member	08-05-2019, 12:39 PM	10 hours ago	1	1

START
HERE

Table

customer_id	first_name	last_name	phone	email	street	city	state	zip_code
1	Debra	Burks	NULL	debra.burks@yahoo.com	9273 Thorne Ave.	Orchard Park	NY	14127
2	Kasha	Todd	NULL	kasha.todd@yahoo.com	910 Vine Street	Campbell	CA	95008
3	Tameka	Fisher	NULL	tameka.fisher@aol.com	769C Honey Creek St.	Redondo Beach	CA	90278
4	Daryl	Spence	NULL	daryl.spence@aol.com	988 Pearl Lane	Uniondale	NY	11553
5	Charolette	Rice	(916) 381-6003	charolette.rice@msn.com	107 River Dr.	Sacramento	CA	95820
6	Lyndsey	Bean	NULL	lyndsey.bean@hotmail.com	769 West Road	Fairport	NY	14450
7	Latasha	Hays	(716) 986-3359	latasha.hays@hotmail.com	7014 Manor Station Rd.	Buffalo	NY	14215
8	Jacquline	Duncan	NULL	jacquline.duncan@yahoo.com	15 Brown St.	Jackson Heights	NY	11372
9	Genoveva	Baldwin	NULL	genoveva.baldwin@msn.com	8550 Spruce Drive	Port Washington	NY	11050
10	Pamelia	Newman	NULL	pamelia.newman@gmail.com	476 Chestnut Ave.	Monroe	NY	10950

XML

```
<empinfo>
    <employees>
        <employee>
            <name>James Kirk</name>
            <age>40></age>
        </employee>
        <employee>
            <name>Jean-Luc Picard</name>
            <age>45</age>
        </employee>
        <employee>
            <name>Wesley Crusher</name>
            <age>27</age>
        </employee>
    </employees>
</empinfo>
```

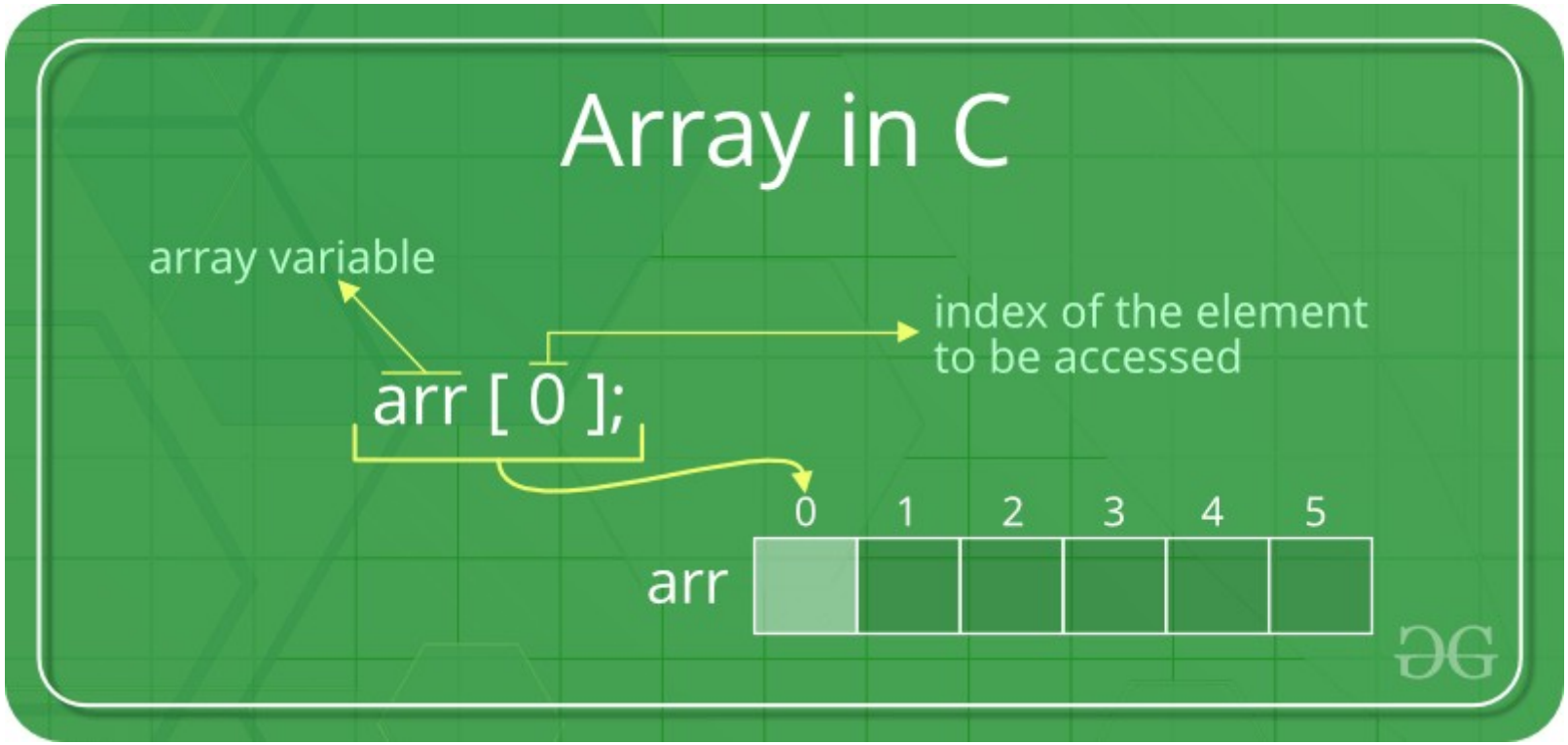
JSON

```
{   "empinfo"  :
        {
                "employees" :   [
                {
                        "name" : "James Kirk",
                        "age" : 40,
                } ,
                {
                        "name" : "Jean-Luc Picard",
                        "age" : 45,
                } ,
                {
                        "name" : "Wesley Crusher",
                        "age" : 27,
                }
                                ]
        }
}
```

JSON

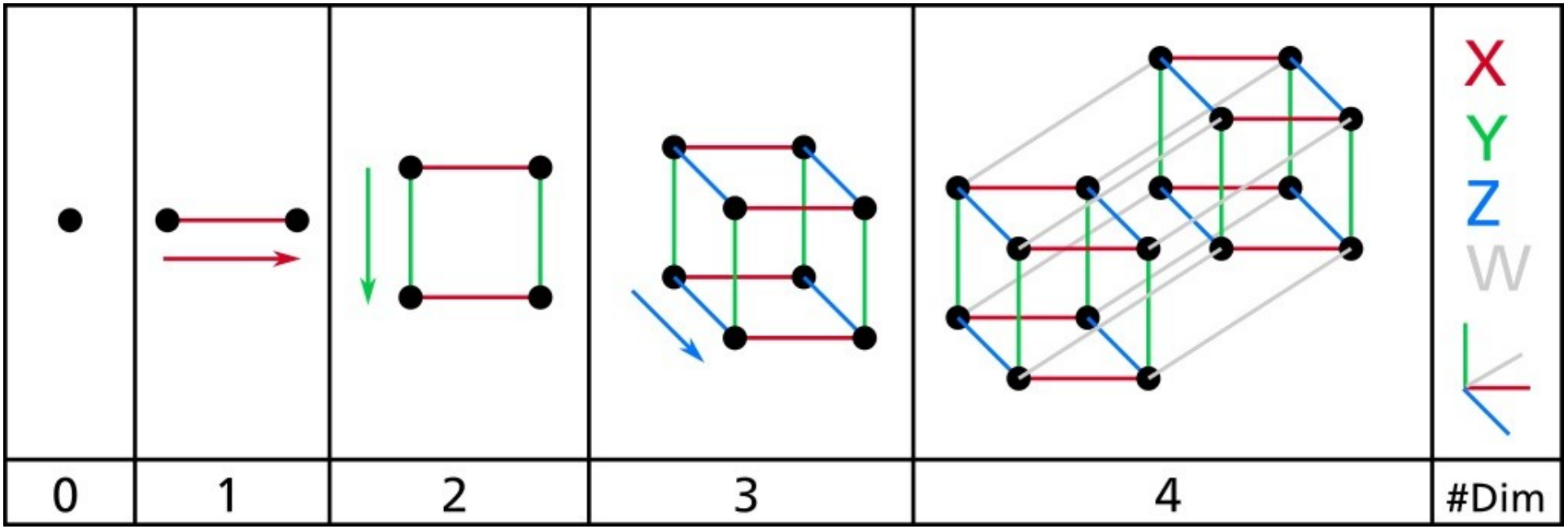
```
{                                                          Object Starts
    "Title": "The Cuckoo's Calling"
    "Author": "Robert Galbraith",
    "Genre": "classic crime novel",
    "Detail": {                                            Object Starts
        "Publisher": "Little Brown"                        Value string
        "Publication_Year": 2013,                          Value number
        "ISBN-13": 9781408704004,
        "Language": "English",
        "Pages": 494
    }                                                      Object ends
    "Price": [                                             Array starts
        {                                                  Object Starts
            "type": "Hardcover",
            "price": 16.65,
        }                                                  Object ends
        {                                                  Object Starts
            "type": "Kindle Edition",
            "price": 7.03,
        }                                                  Object ends
    ]                                                      Array ends
}                                                          Object ends
```

What is an ARRAY?



Simply it’s a table and **nothing else matters**!

Dimensions



Variables in PHP

echo

Arrays in PHP

```
$name_one = array("Reza", "Ali", "Sara");
```

```
$name_two[0] = "Reza";
$name_two[1] = "Ali";
$name_two[2] = "Sara";
```

var_dump()

json_encode()

HTTP GET (jQuery)

```
$.get("index.php" , function(data, status){
    data = jQuery.parseJSON(data);
    data.forEach(obj => {
        // obj is your element
    });
}).always(function(){
    // finally
});
```

jQuery parse focused

```
$.get( "home.php", function( data ) {
    $.each(JSON.parse(JSON.stringify(data)), function(idx, obj) {
        $('#posts').append(` <div><strong>` +
            obj.Username + `</strong> ` + obj.Text + ` </div>`
        );
    });
});
```

Next session

- Software Engineering (Diagrams, ...)
- Project Management (Theory, Tools, ...)
- GIT
- SQL
- And following slides:

Time for KukuApp.ir

- I wish we could upload smth to the net today

$_GET $_POST

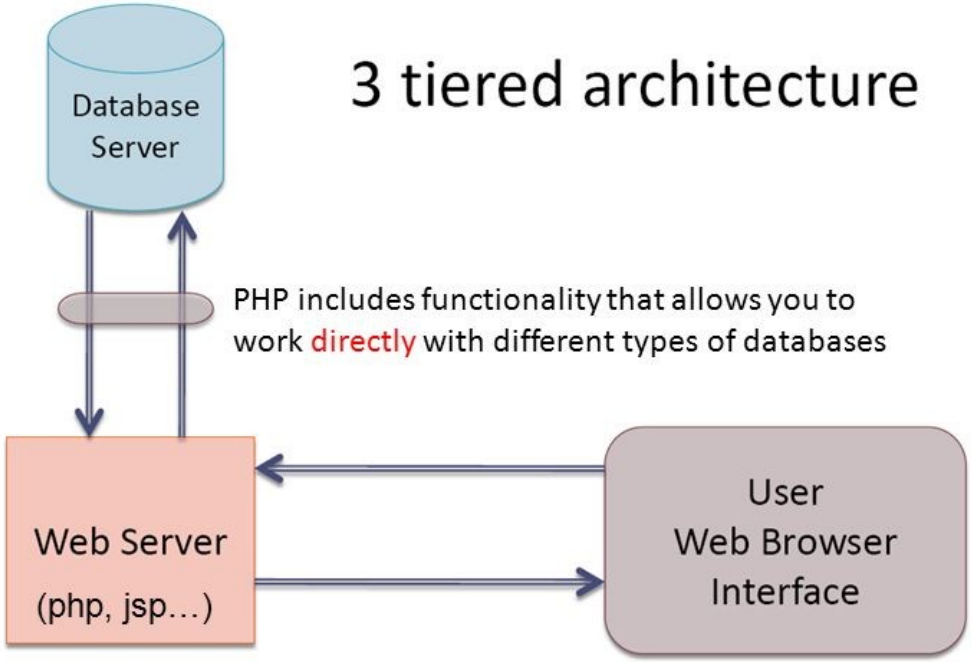
```
<?php

foreach (getallheaders() as $name => $value) {
    echo "$name: $value\n";
}

?>
```

getpostman.com

POSTMAN

DBMS

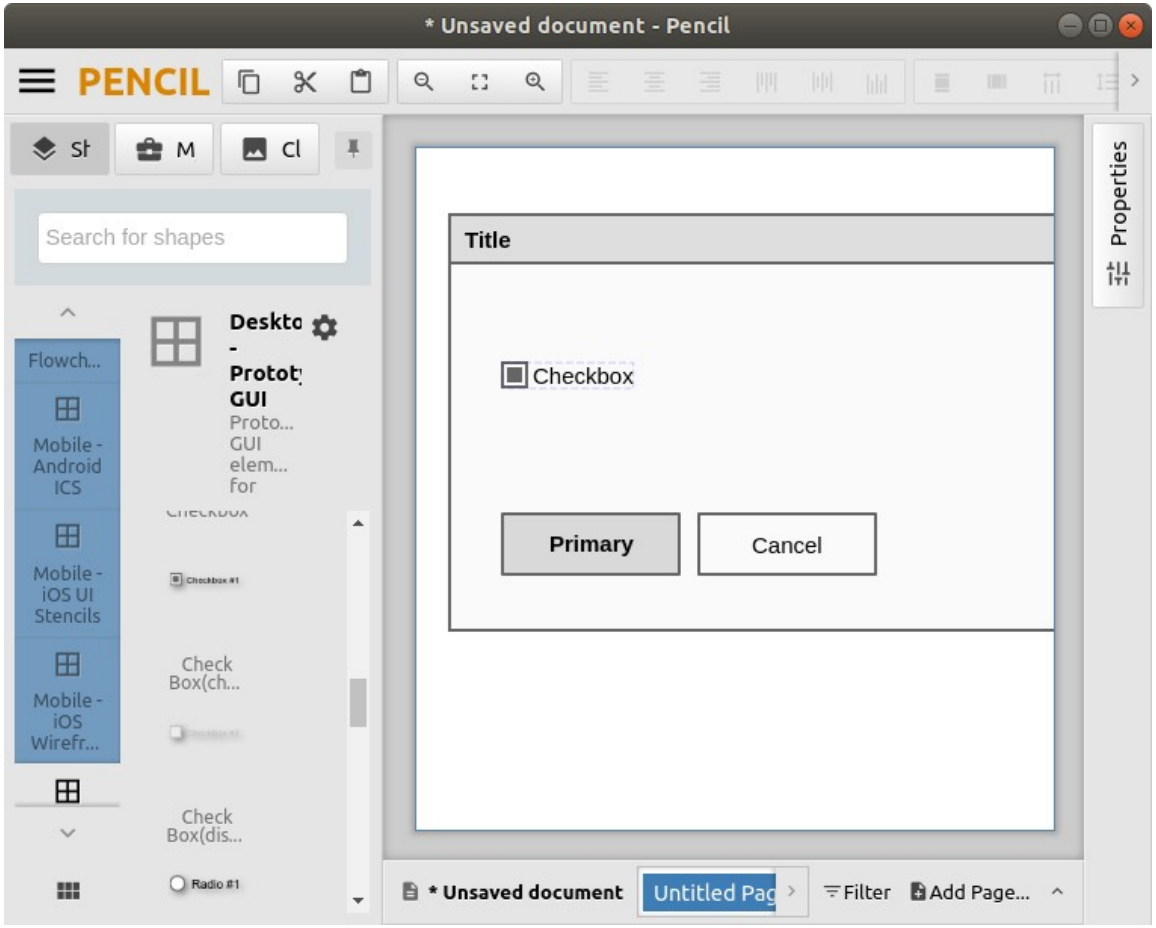
Typical web application interaction



Exercise

- Find friends and join groups (Right now)
- Create a thread for your group on the forum and also chat in there! We wanna learn team work from teach other.
- Notes! Please check forum on 10:10 every night!
- Move the community forward with participating Q&A and debugging.
- Design your own apps using ‘Pencil’
- Follow further exercises on forum

Pencil



https://pencil.evolus.vn/

Sepas =°

Resources and Images

- https://pixabay.com/ro/vectors/internet-re%C5%A3ea-schema-globalizarea-154450/
- https://devopedia.org/domain-name-system
- https://www.network-options.co.ke/product/cisco-2911/
- http://what-when-how.com/data-communications-and-networking/backbone-network-components-data-communications-and-networking/
- https://www.hpe.com/de/de/product-catalog/servers/proliant-servers/pip.hpe-proliant-dl380-gen10-server.1010026818.html

Resources and Images

- https://www.canva.com/icons/multimedia/MAB7k9BEo1A-play-video-icon/
- https://www.html5live.at/2014/01/webserver-work/
- https://www.soapui.org/soap-and-wsdl/working-with-messages.html
- http://www.effortexperts.com/blog/the-importance-of-the-elephant-in-the-room/2017/9/25
- https://metamug.com/article/server-side-rendering-vs-client-side-rendering-ajax.html

Resources and Images

- https://www.oreilly.com/library/view/learning-web-design/9781449337513/ch04.html
- https://www.development-tutorial.com/basic-structure-html-page/
- https://internetingishard.com/html-and-css/hello-css/
- https://ui-ex.com/explore/css-svg-html-javascript/
- https://de.wikipedia.org/wiki/Datei:JQuery-Logo.svg

Resources and Images

- https://koreanhistoricaldramas.com/resources/three-legged-crow-of-goguryeo/jumong-three-legged-crow/
- https://www.thoughtco.com/what-is-javascript-2037921
- https://smartslider3.com/blog/image-slider/
- https://learn.onemonth.com/jquery-vs-javascript/
- https://boards.na.leagueoflegends.com/en/c/skin-champion-concepts/HNlyprZd-the-next-vs-event

Resources and Images

- https://www.geeksforgeeks.org/introduction-to-arrays/
- https://www.godchecker.com/greek-mythology/ECHO/
- https://slideplayer.com/slide/10788082/
- https://giphy.com/stickers/ob-6UUZX9qPA3m7K
- https://www.degreesymbol.net/

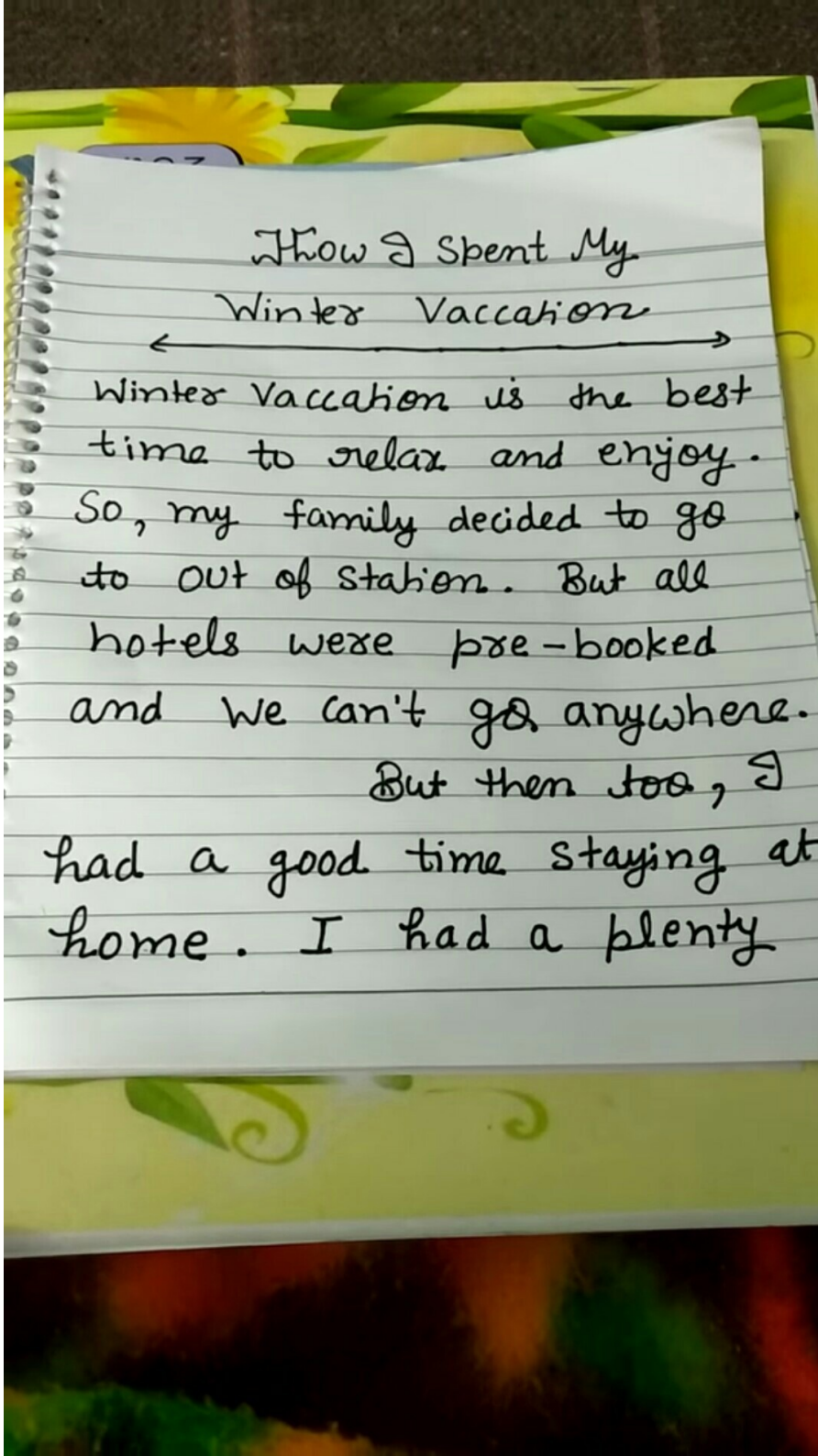
Resources and Images

- https://harrypotter.fandom.com/wiki/Bellatrix_Lestrange%27s_second_wand

Session 3

به نام خدا

How did you spent your SHOLIDAYs?



How I Spent My
Winter Vaccation

Winter Vaccation is the best time to relax and enjoy. So, my family decided to go to out of station. But all hotels were pre-booked and we can't go anywhere. But then too, I had a good time staying at home. I had a plenty

Top Community Members

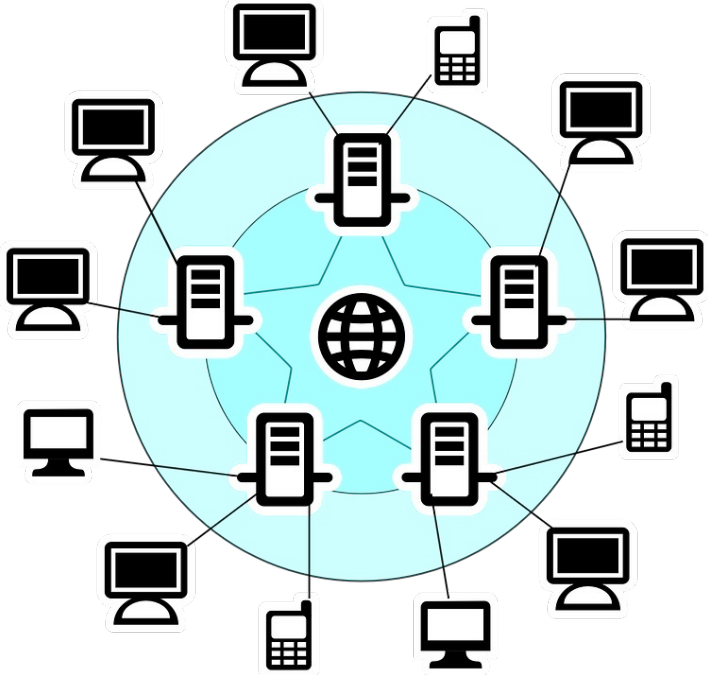
	nimakh11 Junior Member	08-05-2019, 12:35 PM	08-23-2019, 11:45 AM	18	10
	AmirHosseinBabaeayan Moderator	07-26-2019, 02:29 PM	08-24-2019, 04:56 PM	10	2
	zeysh Junior Member	08-05-2019, 11:32 AM	08-24-2019, 01:20 PM	4	0
	Enci Junior Member	08-05-2019, 12:39 PM	11 hours ago	4	1
	Mohammad Junior Member	08-05-2019, 11:33 AM	5 minutes ago	2	0
	Alishahrokhi Junior Member	08-05-2019, 11:34 AM	08-21-2019, 11:39 AM	2	2
	Masoumeh Junior Member	08-05-2019, 11:34 AM	08-12-2019, 05:35 PM	2	0
	I_yasaman_I Junior Member	08-05-2019, 11:36 AM	08-22-2019, 04:36 PM	2	0
	missnull Junior Member	08-05-2019, 11:34 AM	08-24-2019, 10:08 PM	1	1
	zaheri Junior Member	08-05-2019, 11:35 AM	08-15-2019, 05:12 AM	1	1

Session 1 & 2 - Review

Session 1 & 2 - Review

- How internet works

- Network layers,
- Web Servers,
- Routers,
- CDN, DNS, Hosting, ISP,
- ...



Session 1 & 2 - Review

- Front-end

s

Session 1 & 2 - Review

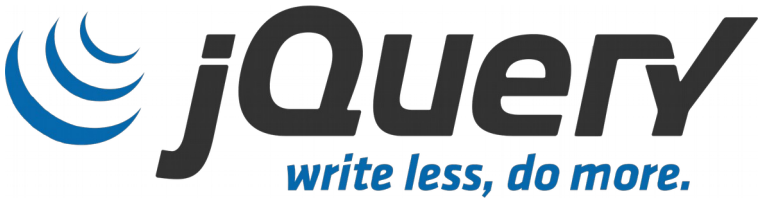
- How to refer to external CSS and JS files?

```
<link rel = "stylesheet"
type = "text/css"
href = "myStyle.css" />
```

```
<script
src="https://code.jquery.com/jquery-3.4.1.min.js">
</script>
```

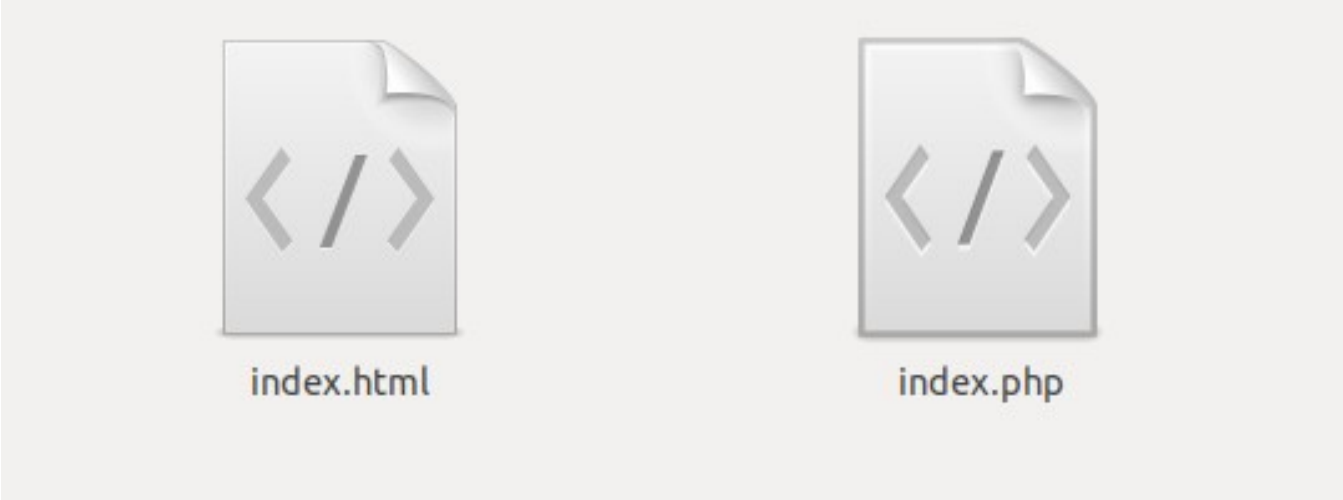
Session 1 & 2 - Review

- “Improved” not “Improvised”!



Session 1 & 2 - Review

- The project



Session 1 & 2 - Review

- The project

index.php

```php
<?php
$birds = array(
    ["Kaftar", "Baq baqu"],
    ["Twitter", "Tweet"],
    ["Simorq", "=o"],
    ["Kuku (Cuckoo)", "kuku"]);

echo json_encode($birds);
```

Session 1 & 2 - Review

- The project

index.html ▸ ...

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta http-equiv="X-UA-Compatible" content="ie=edge">
    <title>Document</title>

    <script src="https://code.jquery.com/jquery-3.4.1.min.js"></script>

</head>

<body>

</body>

<script>…
</script>
</html>
```

Session 1 & 2 - Review

- The project

```
$rows = "";

$.get("index.php" , function(data, status){

    data = jQuery.parseJSON(data);

    data.forEach(obj => {
        $rows = $rows +
        "<tr> <td> " + obj[0] + " </td> <td> "
            + obj[1] + " </td> </tr>";
    });

}).always(function(){

    $('body').html(`
    <table>
        <tr> <th> Name </th> <th> Sound </th> </tr>

    ` + $rows + `</table>`);
});
```

You Retweeted

Angela Bassa
@AngeBassa

Not that you need anyone's permission to choose to be happy... sometimes it's just good to hear it.

You have the universe's permission to choose happiness today! 🌟😘👌

17:38 · 25 Jul 19 · Twitter for iPhone

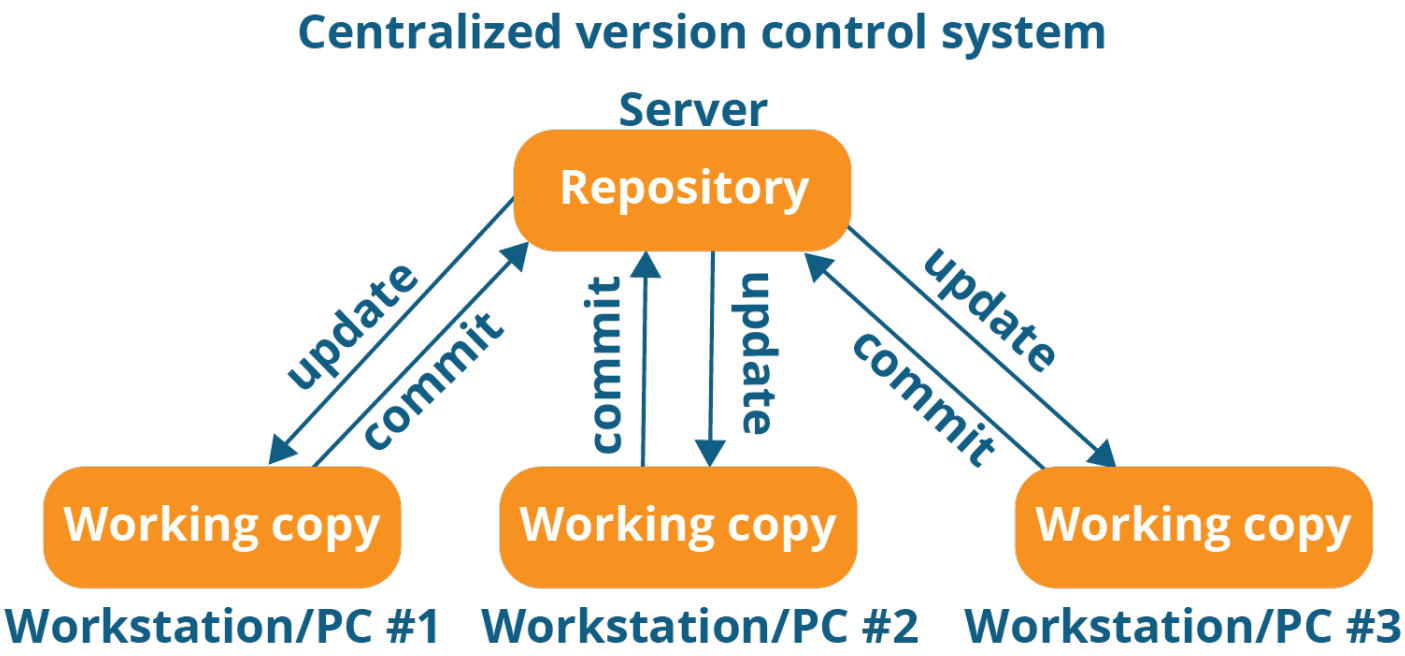
2 Retweets **21** Likes

https://twitter.com/hashtag/inspiranus

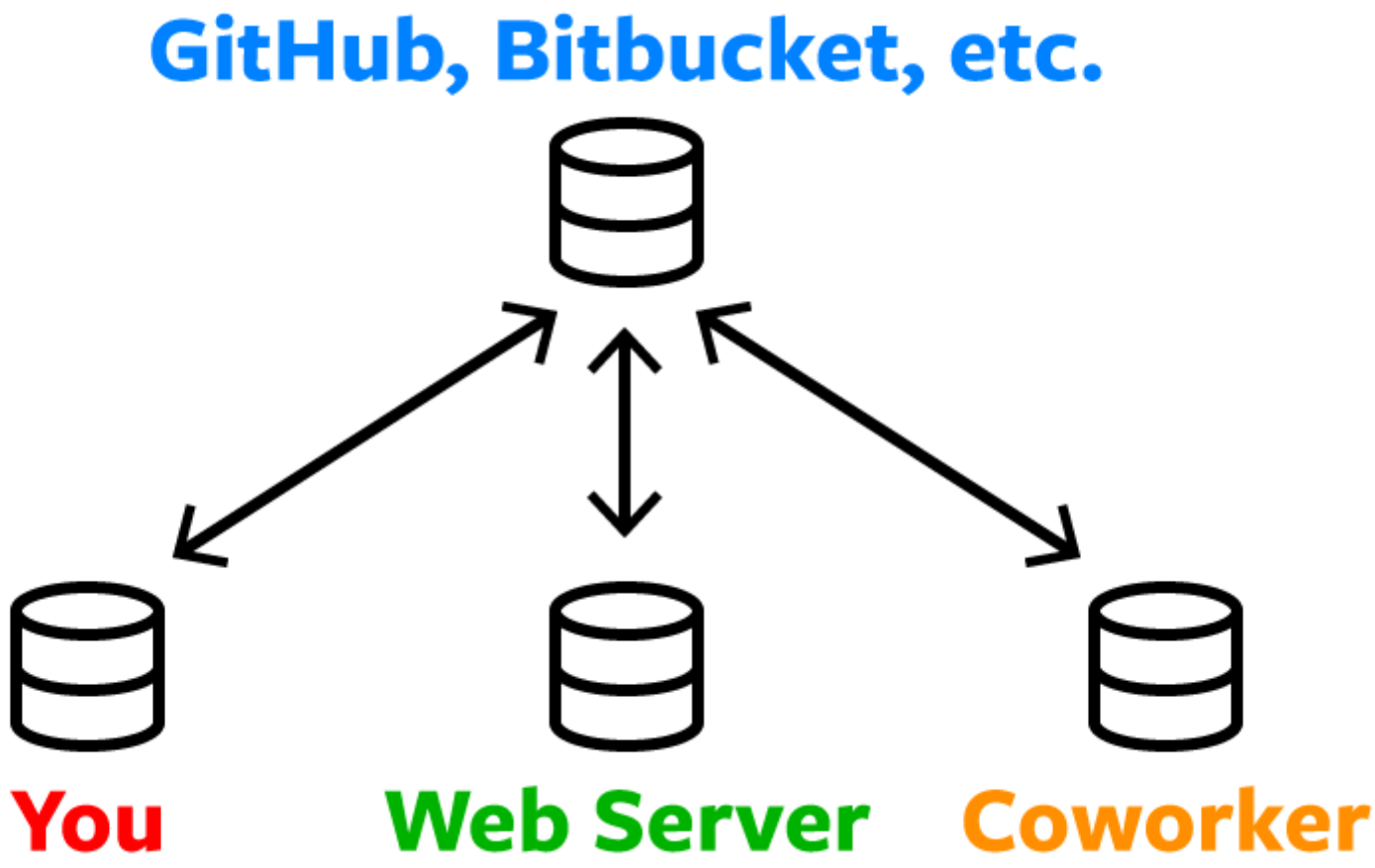
Al-vade vafaa
But in a different order!

- GIT, GitHub, TFS, GitLab,
- $_GET, $_POST, Postman, cURL
- DBMS

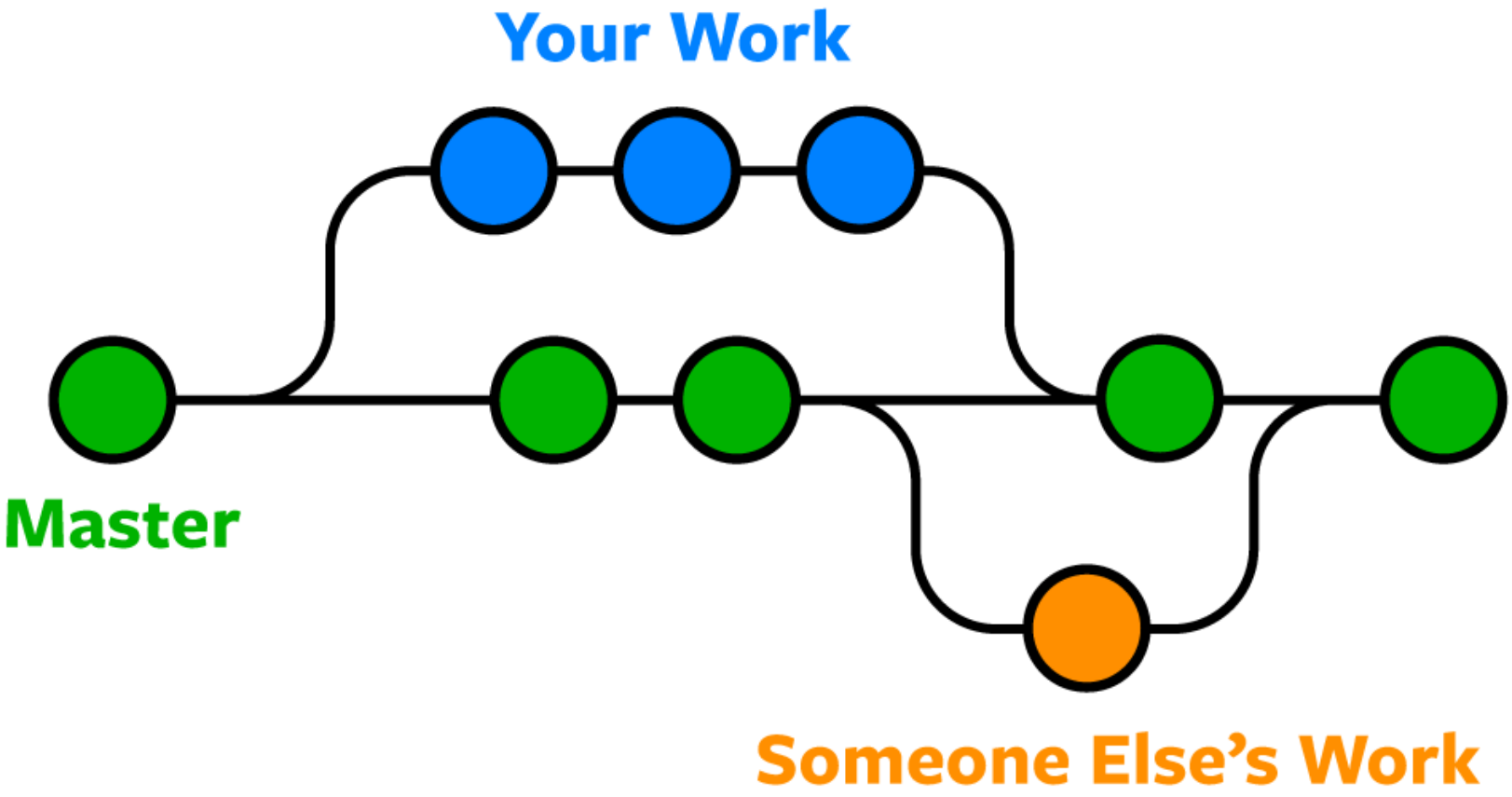
GIT


Centralized version control system
Server
Repository
update
commit
commit
update
commit
update
Working copy
Working copy
Working copy
Workstation/PC #1
Workstation/PC #2
Workstation/PC #3

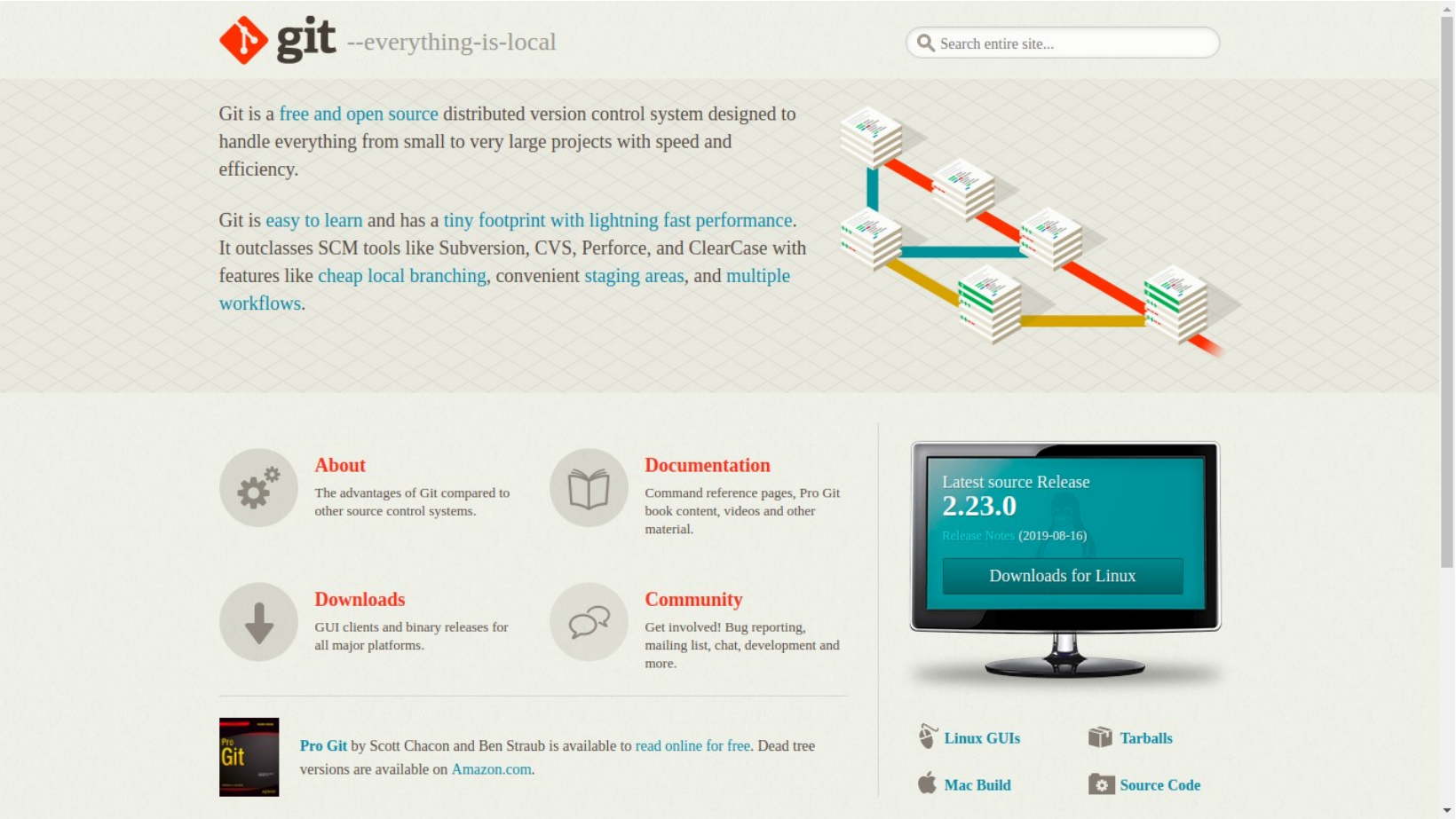
GIT



GIT



git-scm.com
-- Antares (the core I mean btw)



Sorcerer Supreme

GitHub blocked my account and they think I'm developing nuclear weapons

Hamed Follow

Jul 25 · 5 min read

MohammadReza Tayyebi

Jul 25

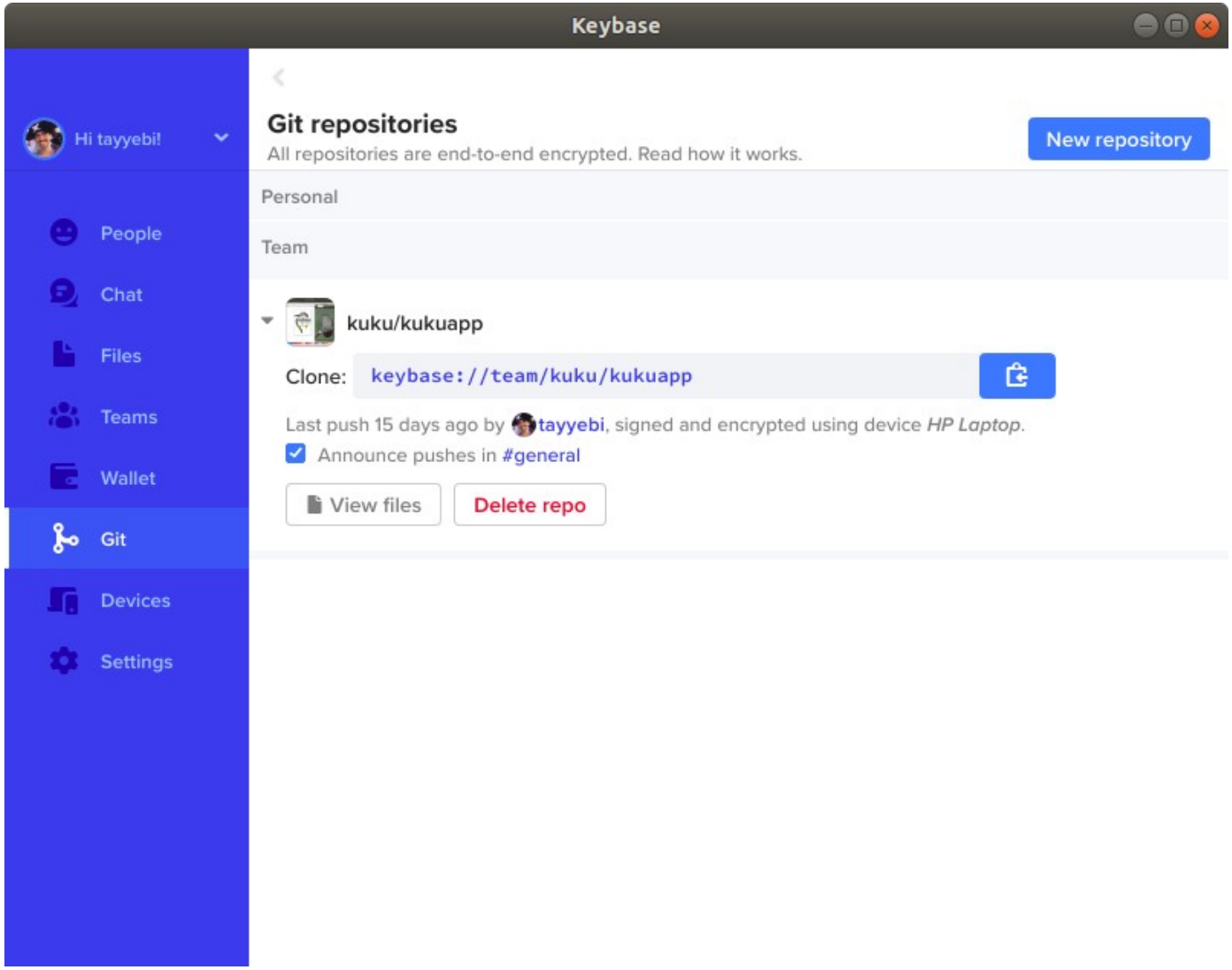
For us it means that we are very close to the time to migrate to a self-hosted Git…

159

KeyBase.io

~Read more around Internet of Trust~ Plz!

Kuku project on KeyBase



Git commands

git init

git clone <url>

git pull

git add <filename>

git add *

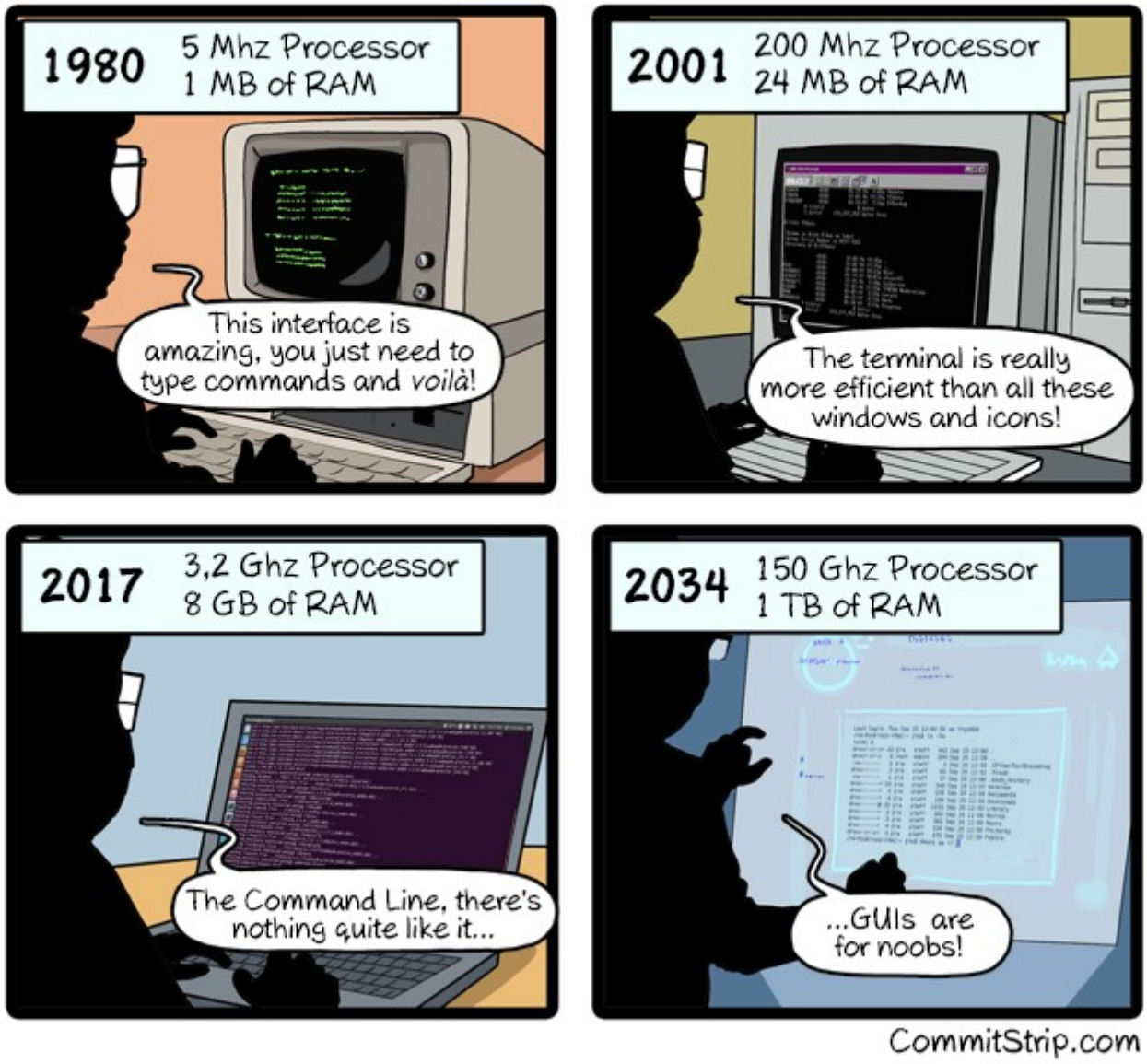
git commit -m “<message>”

git status

git push

git log

Terminals aren’t aliens

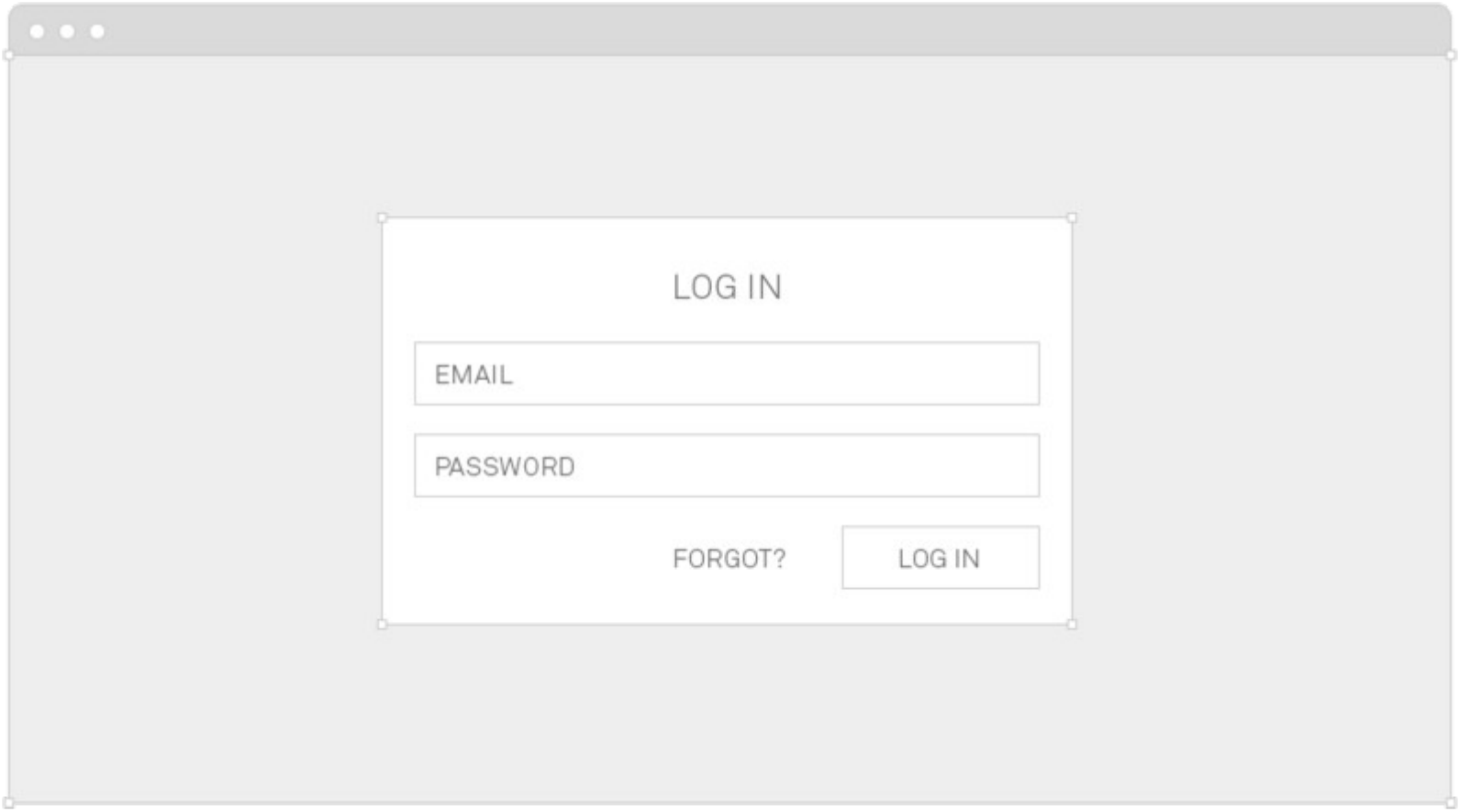


- Free discussion after break

Hosting

- Just upload and hallelujah
- WHM, Cpanel, Plesk, etc...

Login and Register



fopen() fgets()

```
<?php
    $fn = fopen("myfile.txt","r");
    while(! feof($fn))  {
        $result = fgets($fn);
        echo $result;
    }
    fclose($fn);
?>
```

fwrite()

```
<?php
    $fp = fopen('lidn.txt', 'w');
    fwrite($fp, 'Cats chase mice');
    fclose($fp);
?>
```

Exercise

- Install KeyBase and join the team. (done ?)
- **Install MySQL.**
- Complete your project’s prototype, wireframes, business canvas, SWOT, style guide, Gantt chart, and etc.
- **Be ready for presentation.**
- Self-study on UML 2.0: Use Case Diagram, Entity Relationship Diagram, Sequence Diagram.
- CHECK THE FORUM ON 10:10 (PLZ ASK)

Coming up.

- Software Engineering Diagrams
- Project Management Basics
- MySQL
- KukuApp Register, Login and post “Status”
- ~~Android~~ Andervid adapters, Java arrays, JSON parse, and etc… (Simply: a ping-pong app or a simple feed reader).

Sepas =°

Resources and Images

- https://brainly.in/question/7434097
- https://seeklogo.com/vector-logo/138483/the-godfather
- https://keybase.io
- https://www.quora.com/What-is-Git-and-why-should-I-use-it
- https://www.nobledesktop.com/blog/what-is-git-and-why-should-you-use-it
- https://www.businessinsider.com/a-peek-at-linus-torvalds-little-desk-2015-2?IR=T

Resources and Images

- http://www.commitstrip.com/en/2016/12/22/terminal-forever/
- https://en.wikipedia.org/wiki/Delphi
- https://stackoverflow.com/questions/1768894/how-to-write-into-a-file-in-php
- https://tecadmin.net/php-read-file-line-by-line-fgets-function/
- https://commons.wikimedia.org/wiki/File:Open_Access_Reader_Login_Wireframe.png

Resources and Images

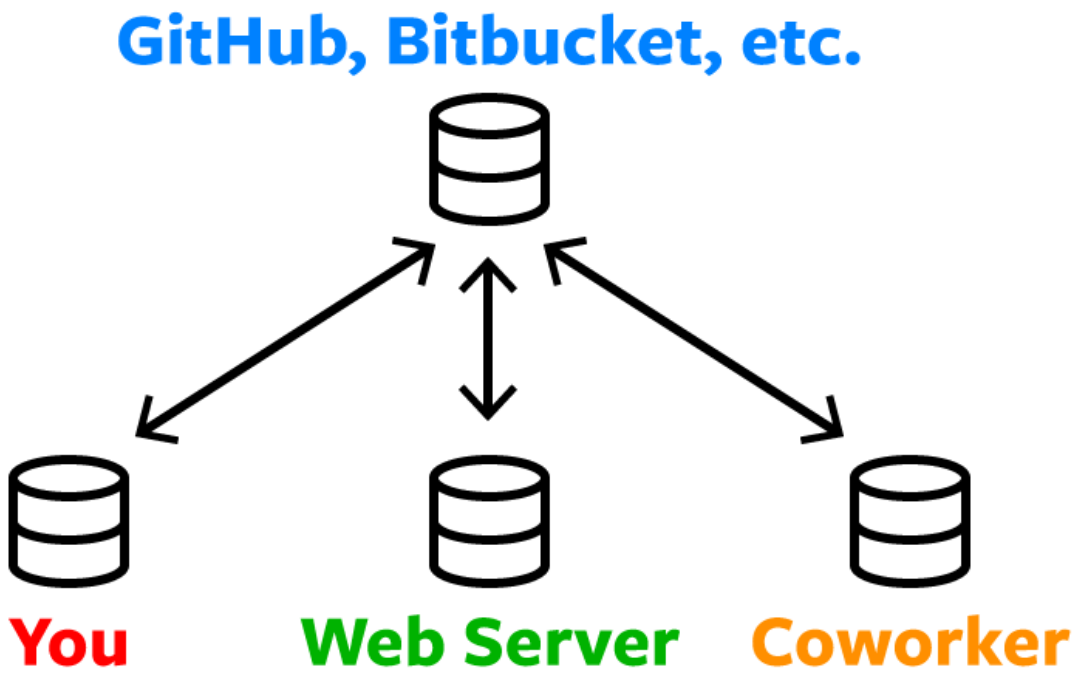
- https://hostingcanada.org/cpanel-vs-plesk-compared/

Session 4

به نام خدا

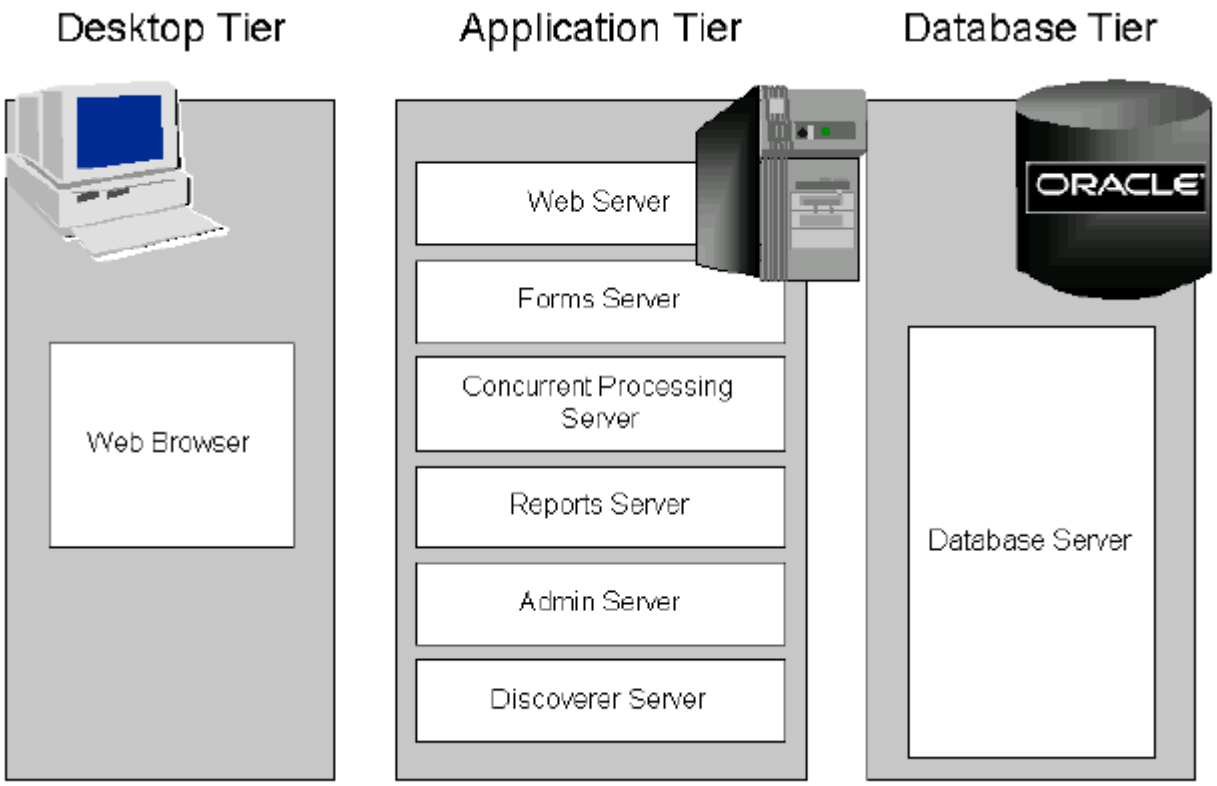
Session 3 - Review

- How to share our code on GIT and tools.



Session 3 - Review

- File Based Data Storage,
- Ready for Three Tier Architecture!

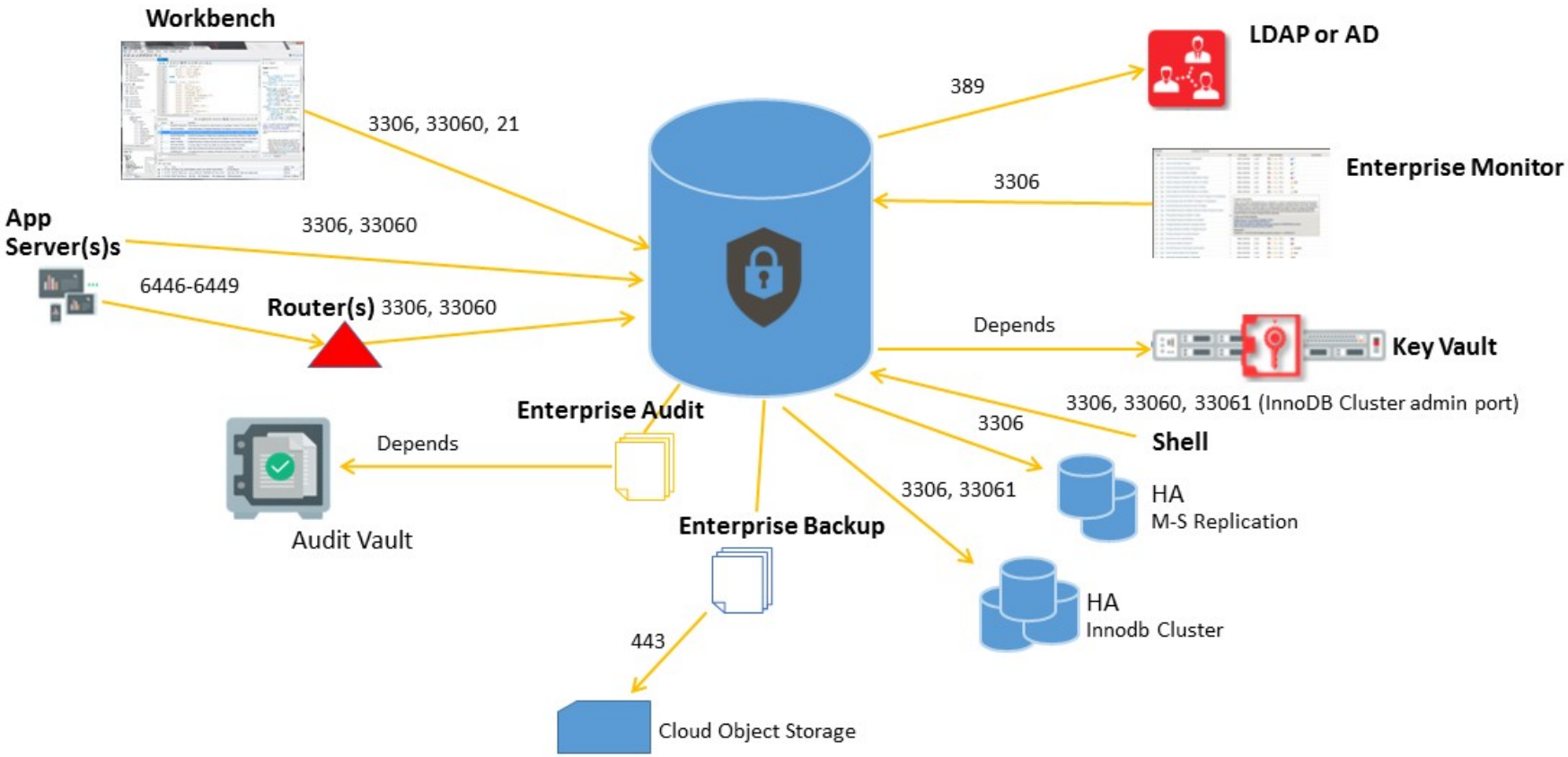


Session 3 - Review

- Hosting,
- Name Servers,
- Domains,
- Web-Based Control Panels

PhpMyAdmin ≠ MySQL

Connections – Default Ports
Arrows Indicate From/To
Note: Doesn't show everything in the lookup table



phpMyAdmin

Web-Based Graphical User Interface (GUI)

WorkBench

Tables | _ | _ | _ | _ |

```
CREATE TABLE [IF NOT EXISTS] table_name (
    column_name data_type(length) [NOT NULL] [DEFAULT value] [AUTO_INCREMENT],
    ...
    PRIMARY KEY (column_id)
) ENGINE=storage_engine
```

(If it work’s, don’t touch it! There isn’t any note for today; so, I suppose to be a good listener)

Your time – Presentation

PHP MySQL Connector

```
<?php
$servername = "localhost";
$username = "username";
$password = "password";
$conn = new mysqli($servername, $username, $password);
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
echo "Connected successfully";
?>
```

Charset

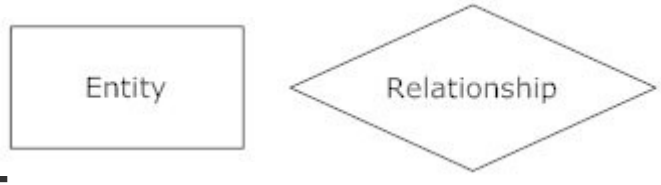
```
mysqli_set_charset($conn,"utf8");
```

PHP MySQL fetch

```
$sql = "SELECT id, firstname, lastname FROM MyGuests";
$result = $conn->query($sql);
if ($result->num_rows > 0) {
    while($row = $result->fetch_assoc()) {
        echo "id: " . $row["id"]. " - Name: " . $row["firstname"]. "
" . $row["lastname"]. "<br>";
    }
} else {
    echo "0 results";
}
```

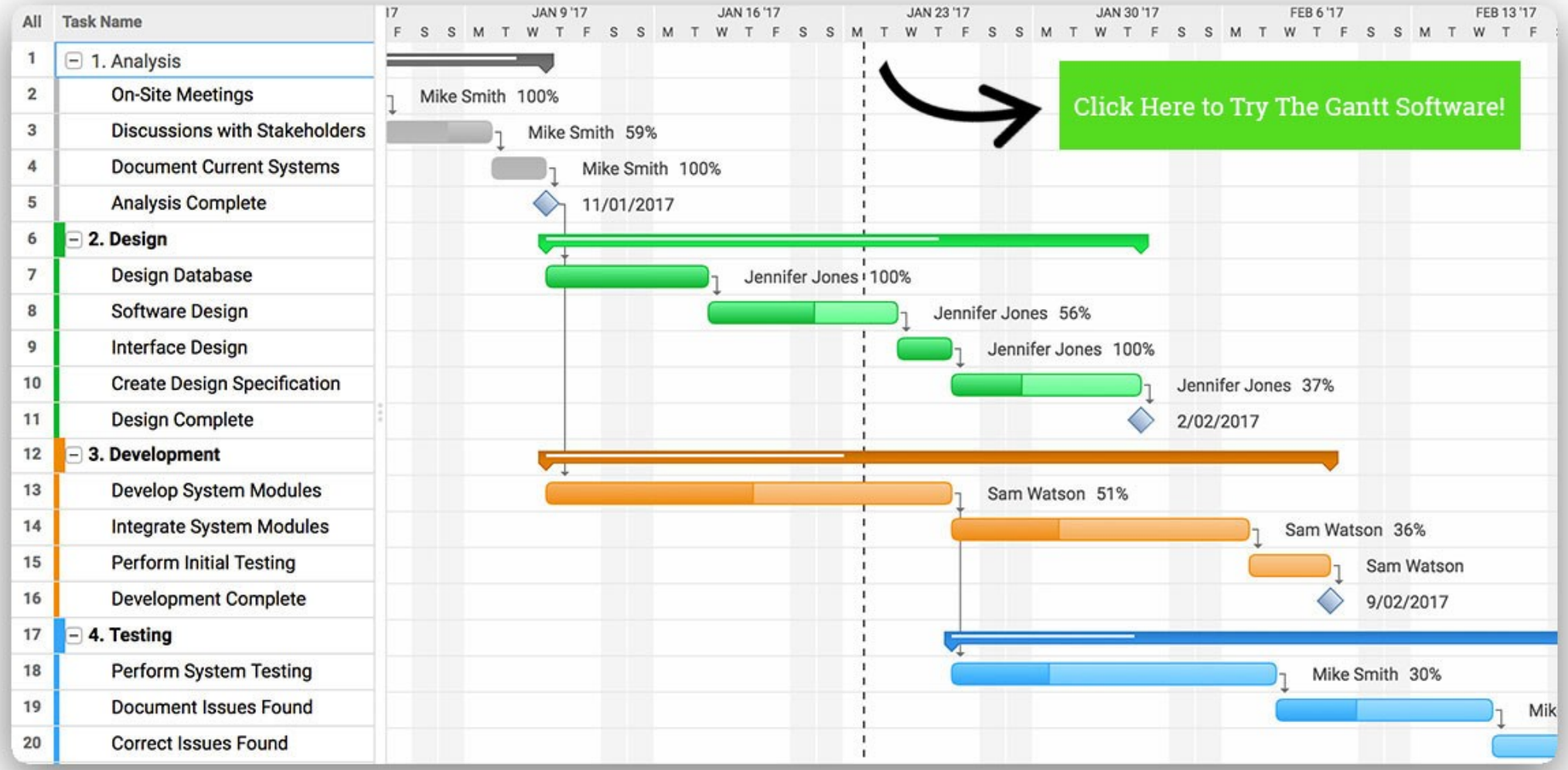
Think twice code once

- Gantt Chart
- 1st ERD

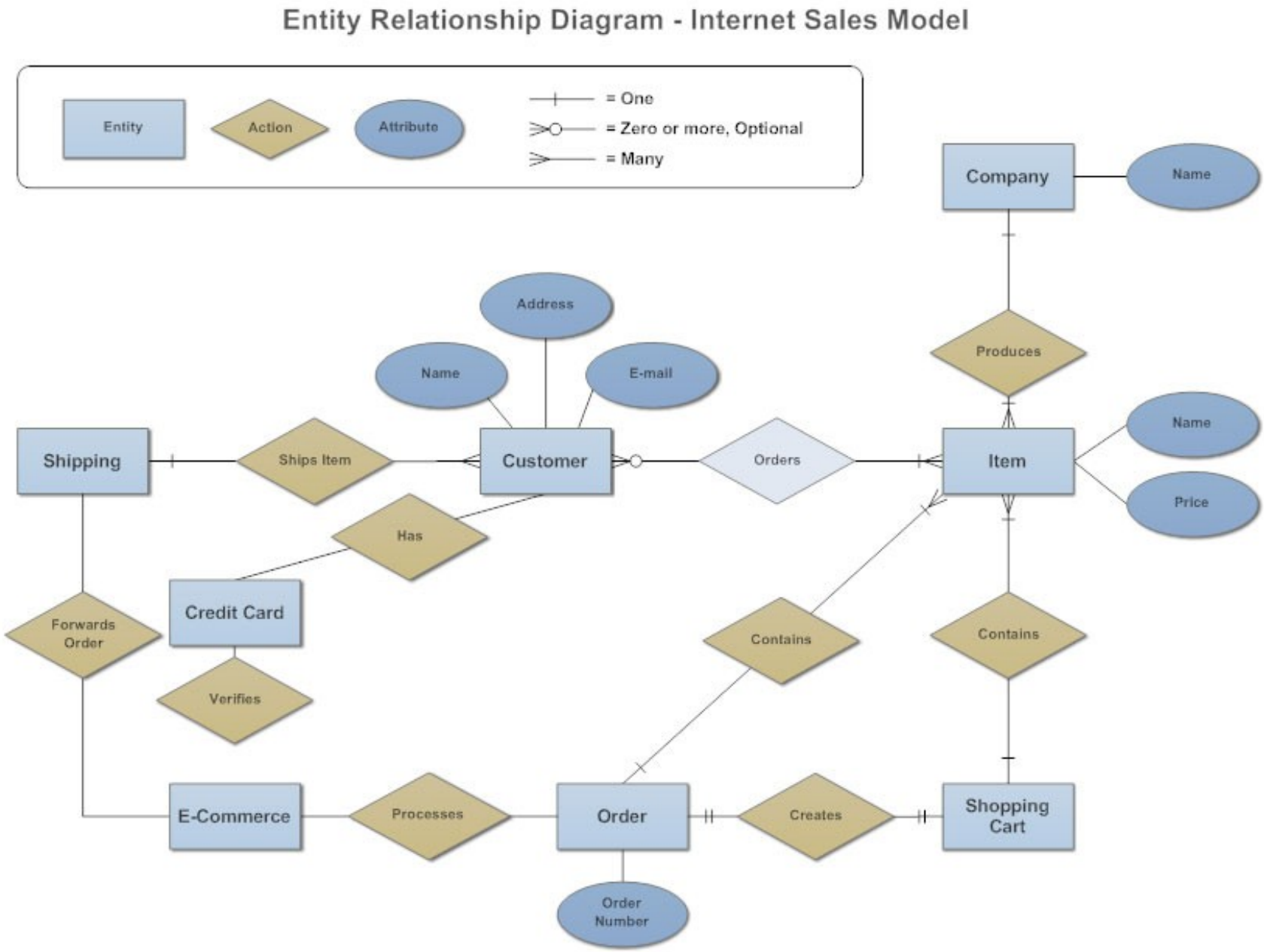


- 2nd WireFrame
- 3rd Code
- 4th Test
- 5th Upload

Gantt


All
Task Name
JAN 9 '17
JAN 16 '17
JAN 23 '17
JAN 30 '17
FEB 6 '17
FEB 13 '17
1. Analysis
On-Site Meetings
Discussions with Stakeholders
Document Current Systems
Analysis Complete
2. Design
Design Database
Software Design
Interface Design
Create Design Specification
Design Complete
3. Development
Develop System Modules
Integrate System Modules
Perform Initial Testing
Development Complete
4. Testing
Perform System Testing
Document Issues Found
Correct Issues Found
Mike Smith 100%
Mike Smith 59%
Mike Smith 100%
11/01/2017
Jennifer Jones 100%
Jennifer Jones 56%
Jennifer Jones 100%
Jennifer Jones 37%
2/02/2017
Sam Watson 51%
Sam Watson 36%
Sam Watson
9/02/2017
Mike Smith 30%
Click Here to Try The Gantt Software!

Chen’s Notation of ERD



Martin Style

1 - one, and only one (mandatory)

* - many (zero or more - optional)

1...* - one or more (mandatory)

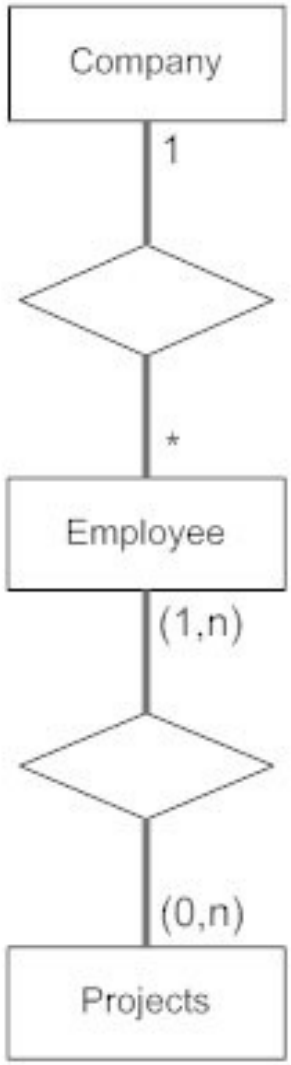
0...1 - zero or one (optional)

(0,1) - zero or one (optional)

(1,n) - one or more (mandatory)

(0,n) - zero or more (optional)

(1,1) - one and only one (mandatory)



Coding is all about practice.

Hissss, Programmers don’t scream!

تو یک جا گم شده ای

من همه جا را باید بگردم...!

(Who? -Next Slide)

Double check everything

Exercise

- Work on your projects
- KISS!
- Share your updates on Kuku; in this case: Commit your changes and **don’t forget to push**!
- Share knowledge on Forum and **don’t be shy**: ASK questions.
- Read about Laravel, Yii, CakePHP, etc ...

Be ready for

- MVC Architecture,
- Class Inheritance,
- API CRUD: GET, POST, PUT, DELETE
- Android Client

keep it
simple,
stupid.

Sepas =°

Resources and Images

- http://hussainbashaapps.blogspot.com/2016/01/multi-tier-or-3-tier-architecture-in.html
- https://mysqlserverteam.com/mysql-guide-to-ports/
- https://commons.wikimedia.org/wiki/File:PhpMyAdmin_logo.svg
- https://quotescover.com/a-good-listener
- https://www.salesforce.com/ca/blog/2016/08/make-next-presentation-best-yet.html
- https://www.macupdate.com/app/mac/31829/mysql-workbench

Resources and Images

- https://www.projectmanager.com/gantt-chart

Session 5

به نام خدا

Session 4 - Review

- DBMS Why and How
- Service Software
- MySQL fetch
- Wireframe
- ERD Chen Notation

شنیدم که پروانه با شمع گفت:

که ای مدعی! عشق کار تو نیست

که نه صبر داری، نه یارای ایست

از بوستان

PHP MySQL execute

```
$sql = "INSERT INTO MyGuests (firstname, lastname, email)
VALUES ('John', 'Doe', 'john@example.com')";
if ($conn->query($sql) === TRUE) {
    echo "New record created successfully";
} else {
    echo "Error: " . $sql . "<br>" . $conn->error;
}
```

SQL Triggers

```
CREATE TRIGGER before_insert_post
  BEFORE INSERT ON posts
  FOR EACH ROW
  SET new.Id = UUID();
```

-- Creates a default Generic Unique IDentifier (GUID) value for a varchar(36) column.

SQL Injection Attack

- sql = “**SELECT id FROM users WHERE username=’” + uname + “’ AND password=’” + passwd + “’”**
- passwd = “**password' OR 1=1; #**”
- BOOM: **SELECT id FROM users WHERE username='username' AND password='password' OR 1=1; #'**

SQL Injection Solution

```
$insert = "INSERT INTO " .$new_table. " VALUES(?, ?, ?)";
$q = mysqli_prepare($db, $insert);
mysqli_stmt_bind_param($q, "iss", $ID, $Partner, $Merchant);
mysqli_stmt_execute($q);
```

(What is ORM?)

Basic Authentication

```
<?php
if (!isset($_SERVER['PHP_AUTH_USER'])) {
    header('WWW-Authenticate: Basic realm="My Realm"');
    header('HTTP/1.0 401 Unauthorized');
    echo 'Text to send if user hits Cancel button';
    exit;
} else {
    echo "<p>Hello {$_SERVER['PHP_AUTH_USER']}.</p>";
    echo "<p>You entered {$_SERVER['PHP_AUTH_PW']} as your
password.</p>";
}
?>
```

set_cookie()

```
HTTP/1.0 200 OK
Content-type: text/html
Set-Cookie: theme=light
Set-Cookie: sessionToken=abc123; Expires=Wed, 09 Jun
2021 10:18:14 GMT
```

$_COOKIE

```
GET /spec.html HTTP/1.1
Host: www.example.org
Cookie: theme=light; sessionToken=abc123
```

header(‘Location: ...’)

× Headers Preview Response Cookies Timing

▼General

Request URL: https://api.weibo.com/oauth2/authorize?client_id=3099336849&redirect_uri=http://45.78.24.83/
nse_type=code
Request Method: GET
Status Code: 302 Found
Remote Address: 180.149.135.230:443

▼Response Headers

api-server-ip: 10.75.25.86
cache-control: no-cache
content-length: 0
date: Tue, 22 Dec 2015 10:12:49 GMT
expires: Thu, 01 Jan 1970 00:00:00 GMT
location: http://45.78.24.83/authorize?code=0f1e6c7223d3347c447e5ff213f5a0c9
pragma: No-cache
server: nginx/1.6.1
status: 302 Found
version: HTTP/1.1

▼Request Headers

:host: api.weibo.com
:method: GET
:path: /oauth2/authorize?client_id=3099336849&redirect_uri=http://45.78.24.83/authorize&response_type=code

.htaccess & httpd.conf

```
# Ensure that Apache listens on port 80
Listen 80
<VirtualHost *:80>
    DocumentRoot "/www/example1"
    ServerName www.example.com

    # Other directives here
</VirtualHost>

<VirtualHost *:80>
    DocumentRoot "/www/example2"
    ServerName www.example.org

    # Other directives here
</VirtualHost>
```

.htaccess & httpd.conf

Contents of .htaccess file in `/www/htdocs/example`

```
AddType text/example ".exm"
```

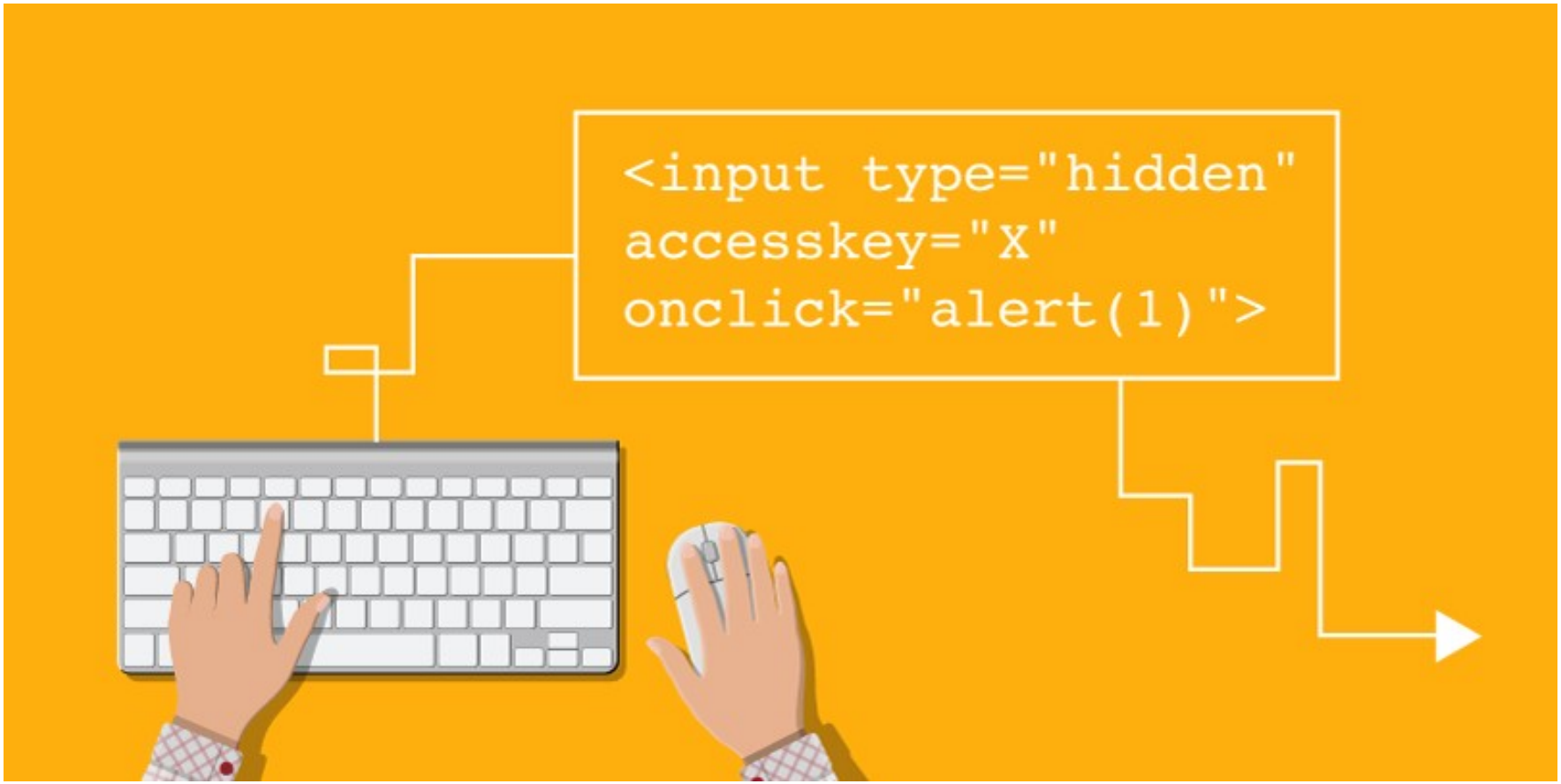
Section from your `httpd.conf` file

```
<Directory "/www/htdocs/example">
    AddType text/example ".exm"
</Directory>
```

form action

```
<form action="/action_page.php" method="get">
  First name: <input type="text" name="fname"><br>
  Last name: <input type="text" name="lname"><br>
  <input type="submit" value="Submit">
</form>
```

input [type=hidden]



Shorthand <?= ...

short_open_tag = On

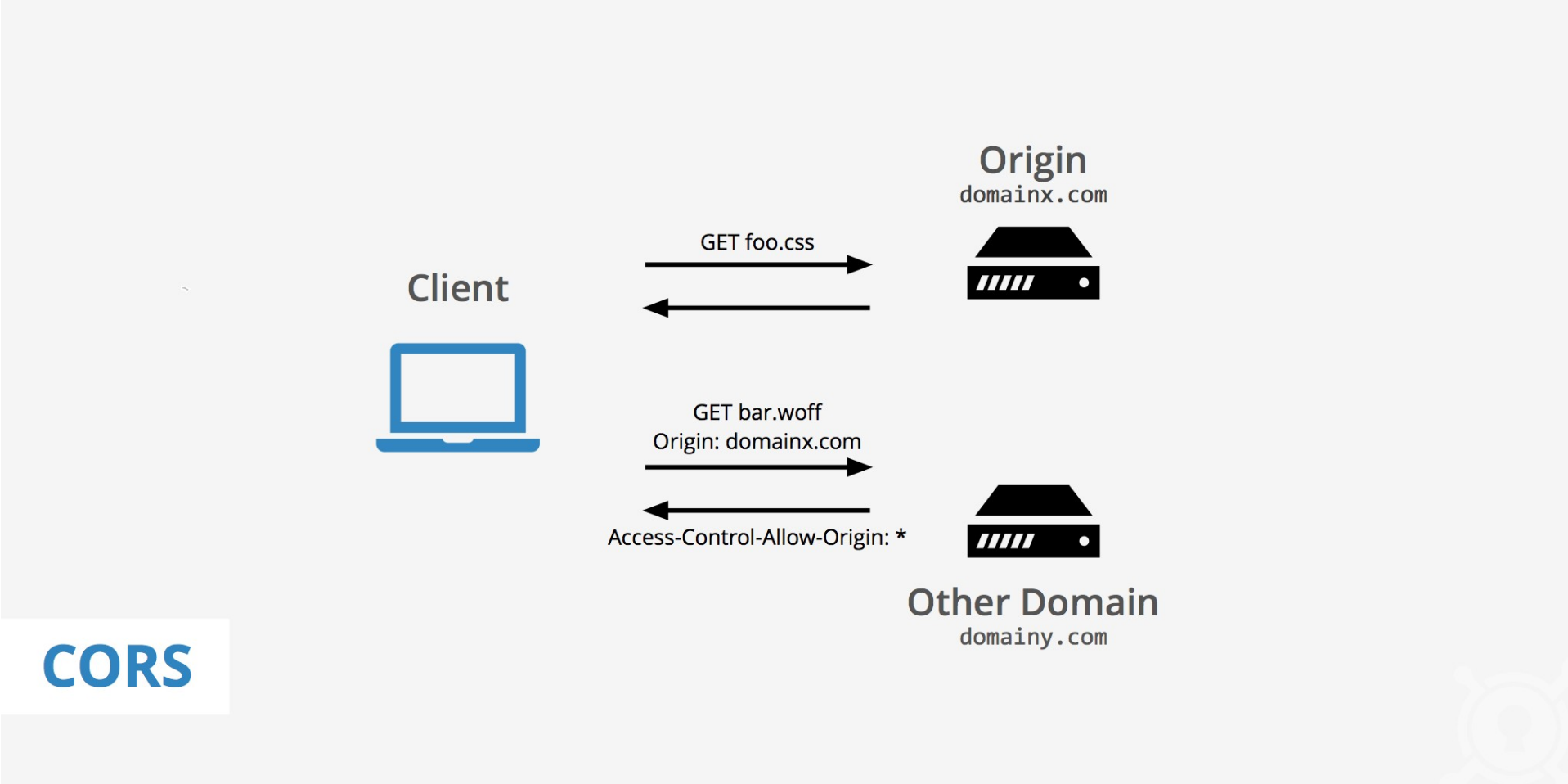
<? echo ...

<?php echo ...

config: php.ini

CORS

header("Access-Control-Allow-Origin: *");



include_once()

Exercise (Code on Kuku)

- Profile Pages
- Direct Messages
- Search
- Hash Tags Processing
- API Text Limitations
- Link
- Follow
- Lists

Wait for it

- Android Client
- MVC Architecture (Inheritance, Scaffolding, etc.)
- Data Warehousing
- Artificial Intelligence

Sepas =°

Resources and Images

- https://httpd.apache.org/docs/2.4/vhosts/examples.html
- https://en.wikipedia.org/wiki/HTTP_cookie
- https://www.w3schools.com/tags/att_form_action.asp
- https://portswigger.net/blog/xss-in-hidden-input-fields
- https://www.keycdn.com/support/cors
- https://stackoverflow.com/questions/34413956/cannot-get-location-header-in-response-using-httpclient

Session 6

به نام خدا

When you put together deep knowledge about a subject that intensely matters to you, charisma happens. You gain courage to share your passion, and when you do that, folks follow.

— Jerry J. Porras —

AZ QUOTES

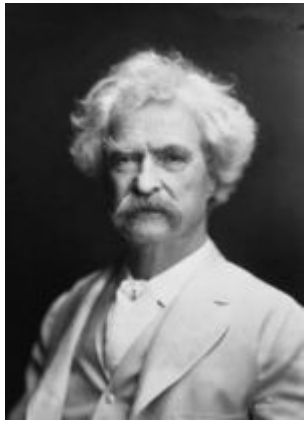
Exercise

- Present your dream job. “Find a job you enjoy doing, and you will never have to work a day in your life” - Mark Twain
- Ideas: High tech,

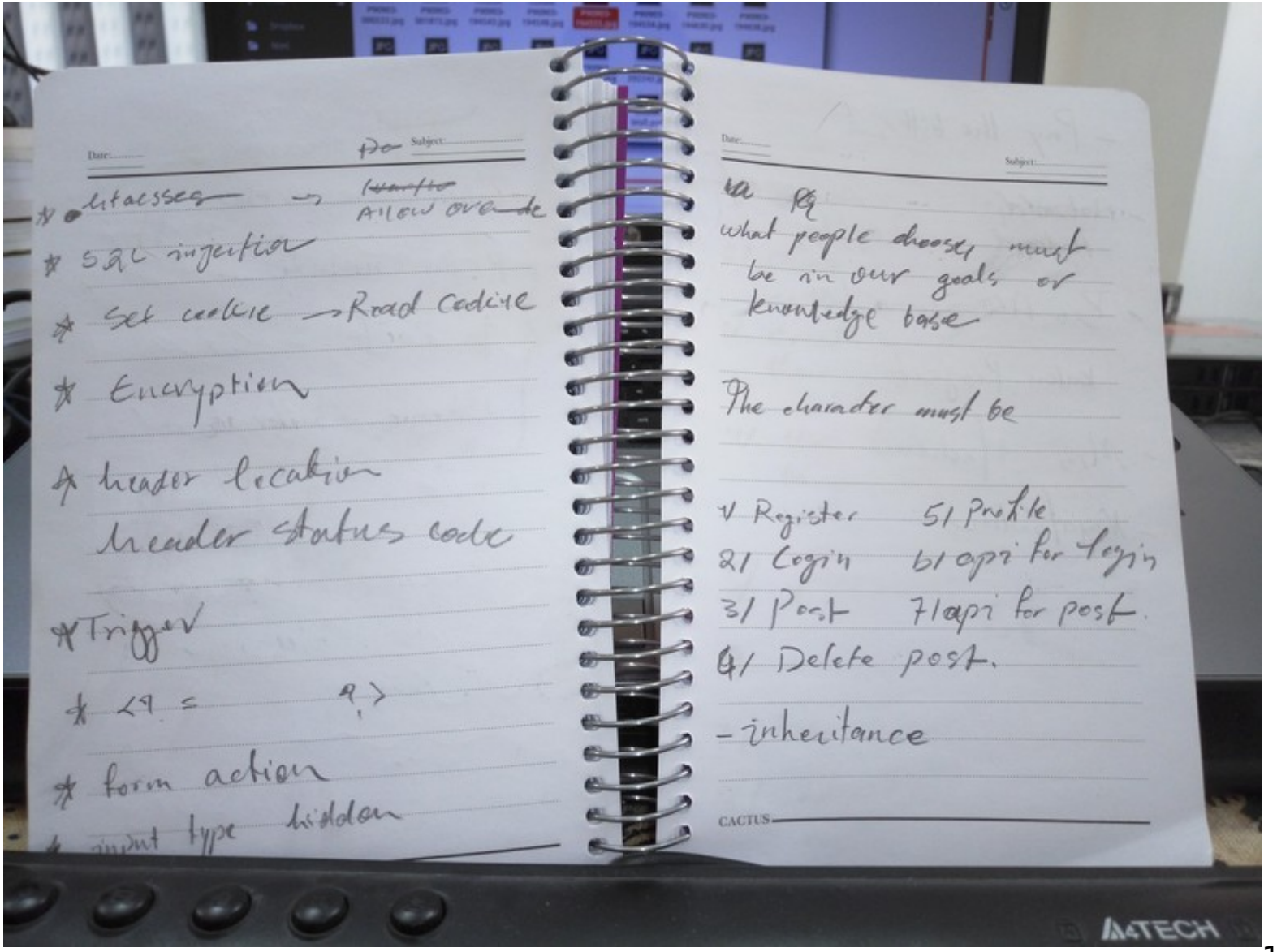
  Nice payments,

  Nice team,

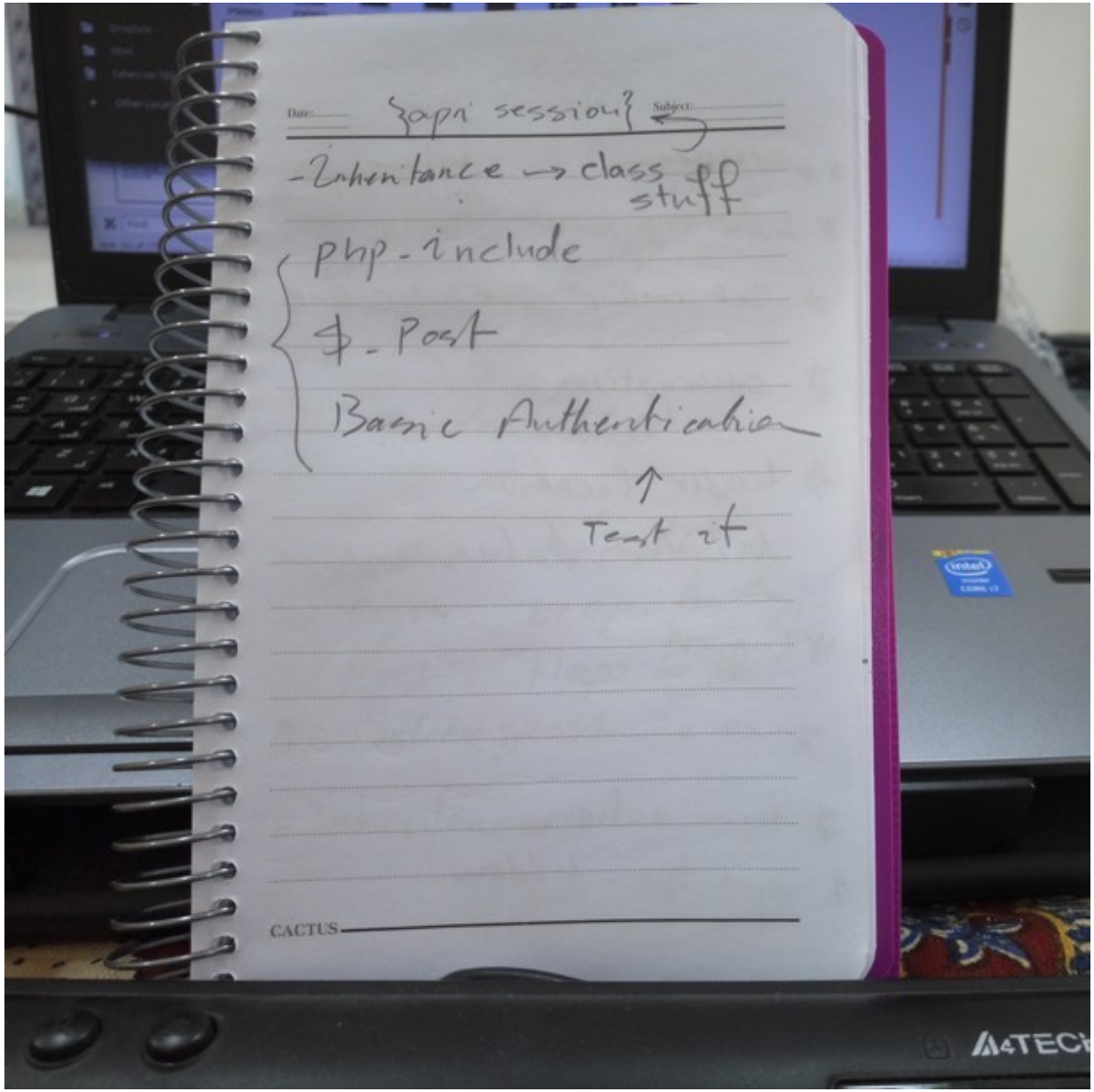
  Blue sky in vision, ...



Session 5 - Review



Session 5 - Review



Why to learn Software Architecture?

(Thanx to Jobinja.ir)

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استخدام Node Js Developer

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وب، برنامه‌نویسی و نرم‌افزار

موقعیت مکانی

تهران ، تهران

نوع همکاری

تمام وقت

حداقل سابقه کار

سه تا هفت سال

Essentials:

Outstanding experience in Node.js

Experience with Node.js frameworks (e.g. Express, Koa, Hapi)

Experience with unit testing

Experience with RESTful web services

Experience with relational and non-relational databases

Write well designed, testable, efficient code

A passion and curiosity for creating and building things

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استخدام Senior WordPress Developer

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حداقل سابقه کار

سه تا هفت سال

- Design and implement new features and functionality for WordPress website
- Create and maintain WordPress templates, plugins, and admin side customizations
- Strong development skills and experience with WordPress (2+ years)
- Experienced in development of WordPress theme and plugins
- Understanding of WordPress theme customization
- Strong understanding of PHP back-end development (2+ years)
- In depth knowledge of object-oriented PHP
- Good understanding of front-end technologies, including HTML5/CSS3/bootstrap/JavaScript/jQuery
- Experienced building user interfaces for websites and/or web applications
- Experienced developing responsive design websites

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استخدام Senior WordPress Developer

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حداقل سابقه کار

سه تا هفت سال

- Superb and independent problem-solving skills (we love Googlers)
- Superior time management skills
- Knowledge of how to interact with RESTful APIs and formats (JSON, XML)
- Excellent knowledge of Git
- Familiarity with Linux/Unix
- Familiarity with SCRUM/Agile environments-Understanding and other design principles
- Effective client-facing communication skills to diagnose, troubleshoot, and explain complex technical problems
- Passion for writing well-documented code
- Understanding the importance of development best practices and how they relate to security
- Hands on experience with SQL schema design and SOLID principles
- Understanding of web hosting and basic server administrator

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استخدام Senior iOS Developer

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تمام وقت

حداقل سابقه کار

سه تا هفت سال

- Solid experience developing apps within the iOS development ecosystem
- Good practical experience with the Swift programming language
- Experience in working with hybrid environments. (Objective-c, Swift). Experiences in migration from Objective-c to Swift is a plus.
- Good understanding and experience of using Coordinator & MVVM patterns
- Experience using Reactive Programming with RxSwift
- Deep understanding of iOS Core frameworks & approaches like offline storage, threading, and performance tuning
- Significant experience working with RESTful APIs & JSON
- Knowledge of Apple's design principles and interface guidelines
- Familiar with cloud messaging APIs and push notifications
- Practical understanding of software design patterns and their use cases (Architectural Thinking)
- Deep practical understanding in refactoring
- Deep understanding of Object Oriented and Protocol Oriented concepts
- Detail-oriented with great organizational skills, comfortable with ambiguity
- Excellent communication and interpersonal skills, ability to be personable yet persistent
- Proven experience in building and launching great mobile apps

  Deep practical understanding of Git Version Control. Experienced in Pull-Requests, Rebase, Merge, and best GitFlow Strategies

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استخدام Senior Back-End Developer

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تمام وقت

حداقل سابقه کار

سه تا هفت سال

Participate in requirements analysis

Collaborate with internal teams to produce software design and architecture

Write clean, scalable code using .NET programming languages

Revise, update, refactor and debug code

Improve existing software

Develop documentation throughout the software development life cycle (SDLC)

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استخدام Senior Back-End Developer

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تمام وقت

حداقل سابقه کار

سه تا هفت سال

BS/BA in Computer Science, Computer Engineering or a related field

Extensive Experience with C# and ASP.Net core

Strong working knowledge with architecture styles/APIs (REST, RPC)

The ability to jump into a project and contribute immediately to both architecture and implementation

Excellent troubleshooting and communication skills

Strong programming ability and problem solving attitude, analytical skills and detail-oriented

Experienced in Entity Framework and be familiar with other ORMs.

Extensive experience in Relational Database Design.

Knowledge in reactive programming, experience working with Agile methodologies and project management skills are desirable

Work as a team player and participate actively adding valuable inputs

Experience in Unit testing and frameworks like NUnit/XUnit

Eager to learn new technologies

Quality-first mindset with focus on test automation and CI/CD

Strong desire for establishing and improving product quality

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استخدام Senior Back-End Developer

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تمام وقت

حداقل سابقه کار

سه تا هفت سال

Experience with rapid full stack development.

Advanced SQL programming experience

Comfortable interacting with internal and external business partners on a regular basis

StackOverflow reputation and active GitHub account is a plus

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Front-End استخدام برنامه‌نویس

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تمام وقت

حداقل سابقه کار

سه تا هفت سال

above 5 years of experience in web development

above 3 years of experience in front-end/JavaScript development

Experience with HTML5 and the semantic web

Extensive experience with CSS3, CSS processors, responsive design, mobile-first mindset

Deep knowledge of JavaScript (ES6/ES7)

2+ years of experience with modern JavaScript frameworks/libraries (e.g. Vue.js, React.js, Angular.js, ...)

Experience with jQuery and Bootstrap

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Front-End استخدام برنامه‌نویس

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حداقل سابقه کار

سه تا هفت سال

Experience with front-end automation tools and task runners (e.g. webpack, gulp, grunt, ...)

Experience with functional programming concepts

Experience in deploying unit and e2e tests

Experience in producing maintainable code in large code bases

Having a data-driven mindset

Ability to work in an Agile (SCRUM) environment

Experience with version controlling systems (e.g. Git)

Experience with task management systems, namely JIRA and Trello

Fluent in English, specifically verbal and written communications.

Android Programming

- Java
- Kotlin
- Xamarin (C#)
- Native Development Kit (C++)
- React Native (Java Script)
- Flutter
- Unity Game Engine (C#)
- Cordova, Angular JS, Kivy (Pyhton)

Login Activity

App Header

Date:

Subject:

kuku app

Username

Password

login

→ LBL

→ TB

→ LB

→ TB

→ BTN

CACTUS

TB

Home Activity

Date:

Subject:

→ linearal layout

kuku App

Text...

post

→ LL

→ LL

IV

→ LL

logout

Refresh

Bth

Bth

CACTUS

1:54

kuku

Username

Password

Login

1:54

kuku

Ku..Ku

root: yet another test post

root: test post

root: test post

another: hi1

root: test2

root: test3

root: test4

root: test5

root: test6

root: test7

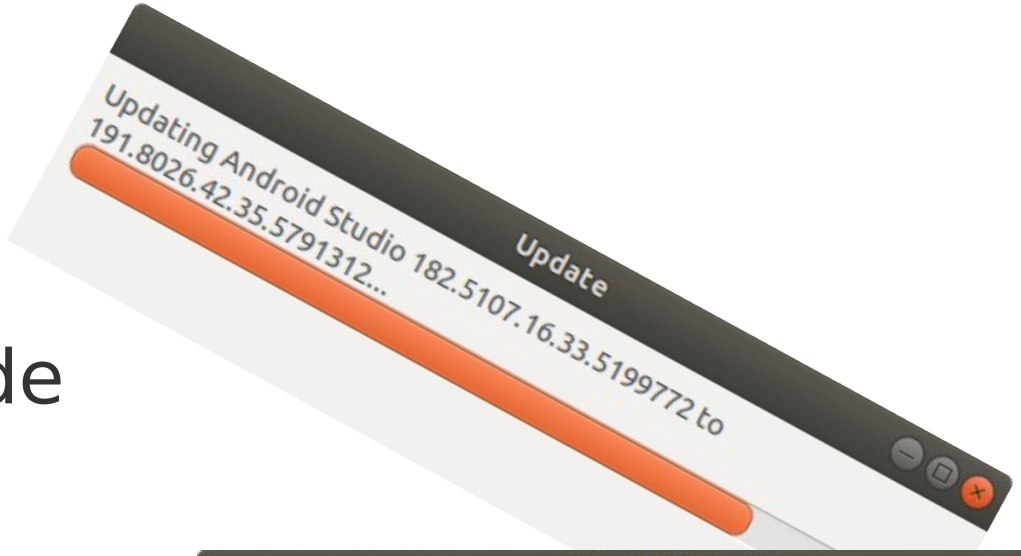
root: test1

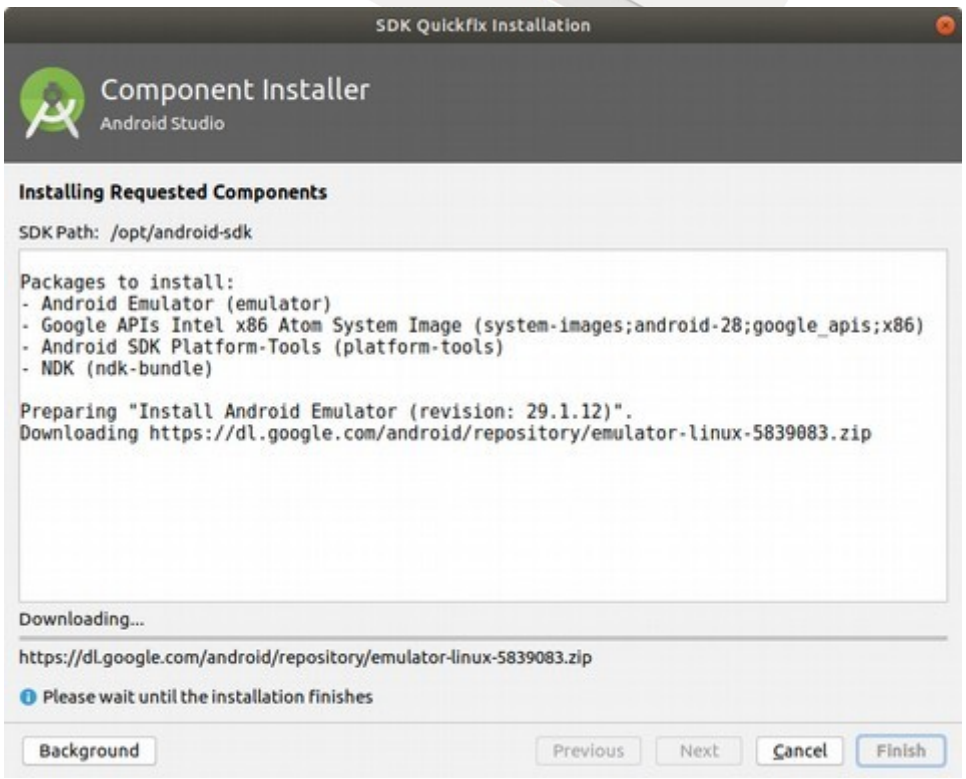
root: test

Refresh Logout

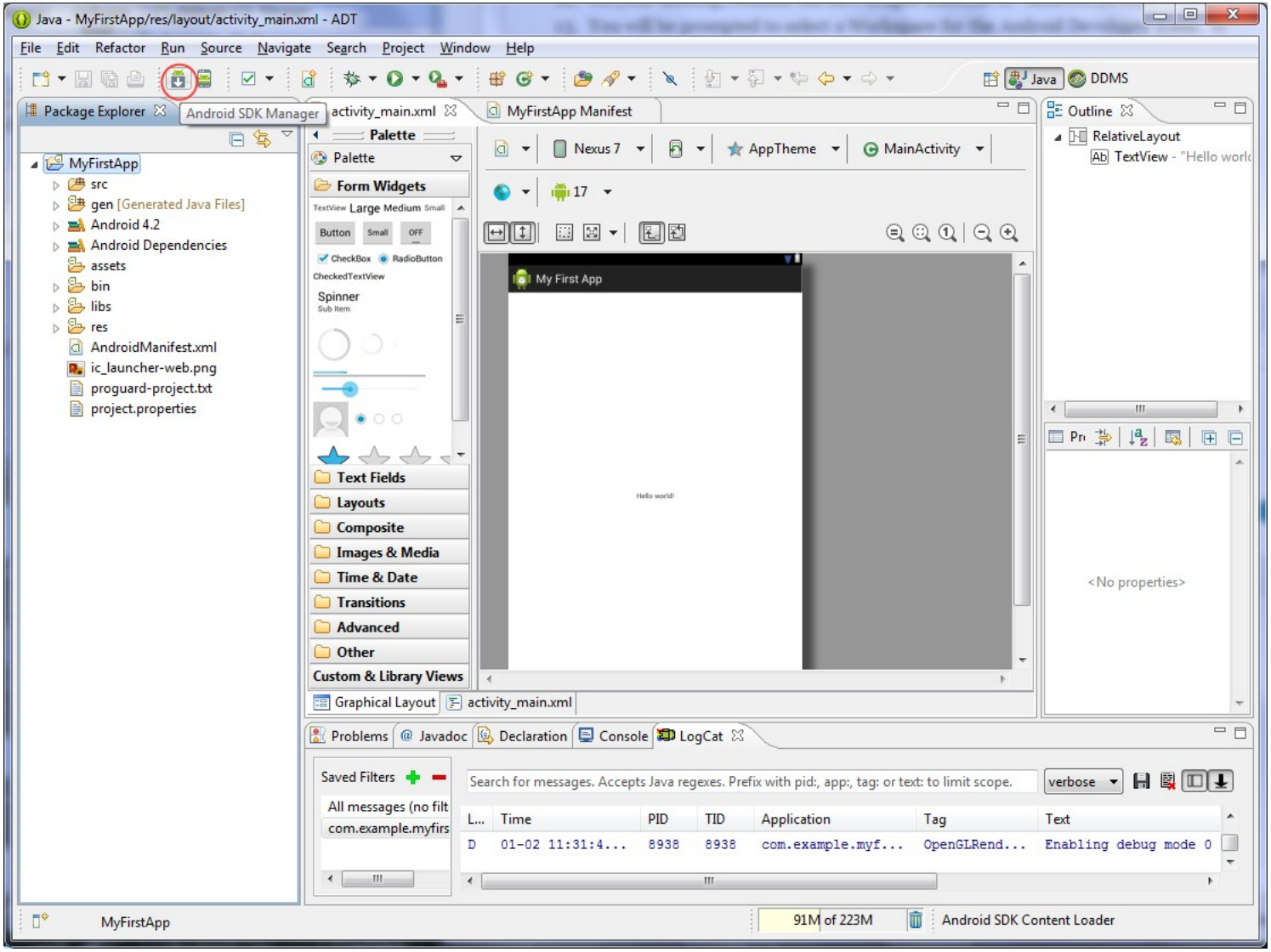
Android IDEs

- Android Studio
- Visual Studio Code
- Notepad.exe





Android IDEs – Eclipse

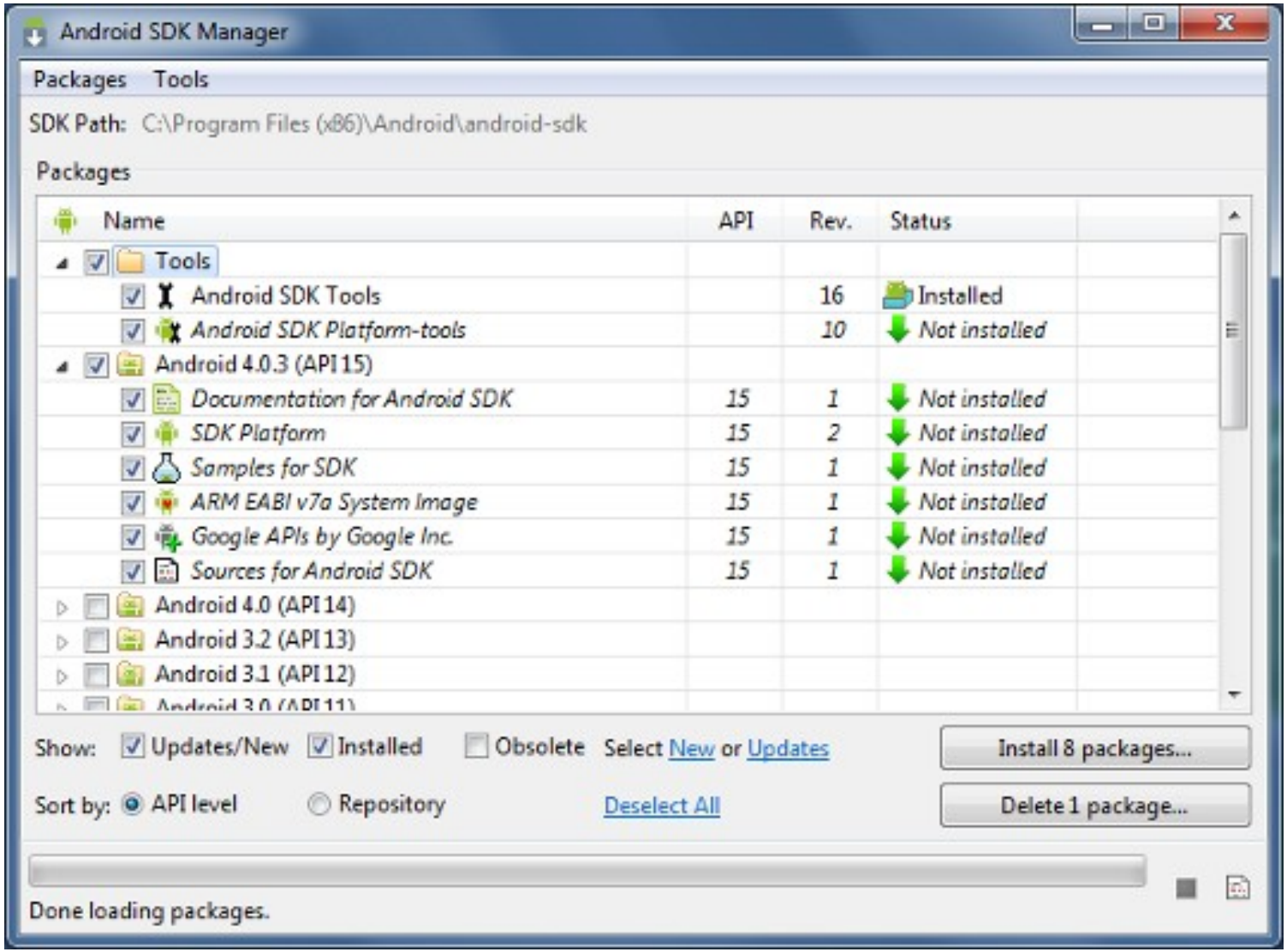


Software Development Kit

Android software development is the process by which new applications are created for devices running the Android operating system. Google states that "Android apps can be written using Kotlin, Java, and C++ languages" using the Android software development kit, while using other languages is also possible.

- Uncle Wikipedia

SDK Manager


Android SDK Manager
Packages
Tools
SDK Path: C:\Program Files (x86)\Android\android-sdk
Packages
Name
API
Rev.
Status
Tools
Android SDK Tools
16
Installed
Android SDK Platform-tools
10
Not installed
Android 4.0.3 (API 15)
Documentation for Android SDK
15
1
Not installed
SDK Platform
15
2
Not installed
Samples for SDK
15
1
Not installed
ARM EABI v7a System Image
15
1
Not installed
Google APIs by Google Inc.
15
1
Not installed
Sources for Android SDK
15
1
Not installed
Android 4.0 (API 14)
Android 3.2 (API 13)
Android 3.1 (API 12)
Show:
Updates/New
Installed
Obsolete
Select New or Updates
Install 8 packages...
Sort by:
API level
Repository
Deselect All
Delete 1 package...
Done loading packages.

JDK, JRE

- $ sudo apt-get install openjdk-8-jre
- $ sudo update-alternatives --config javac
- $ sudo apt-get install openjdk-8-jdk
- $ sudo update-alternatives --config javac

SymLink & Export

```
$ ln -s /opt/myapp/executable
/usr/bin/myappshort
$ myappshort
```

```
$ export PATH_TO_SOMETHING=/path/to/smt
$ echo $PATH_TO_SOMTHING
```

Android Debug Bridge

Android Debug Bridge (adb) is a versatile command-line tool that lets you communicate with a device. The adb command facilitates a variety of device actions, such as installing and debugging apps, and it provides access to a Unix shell that you can use to run a variety of commands on a device. It is a client-server program that includes three components:

Android Debug Bridge

- A client, which sends commands. The client runs on your development machine. You can invoke a client from a command-line terminal by issuing an adb command.
- A daemon (adbd), which runs commands on a device. The daemon runs as a background process on each device.
- A server, which manages communication between the client and the daemon. The server runs as a background process on your development machine.

ADB Location

android_sdk/platform-tools/

ADB Common Commands

```
$ adb devices
$ adb shell
$ adb uninstall ${PACKAGE_NAME}
$ adb logcat
```

Generate Certificate

```
$ keytool -genkey -v -keystore my-release-key.keystore -alias alias_name -keyalg RSA -keysize 2048 -validity 10000
```

Behind the scenes

https://medium.com/@authmane512/how-to-do-android-development-faster-without-gradle-9046b8c1cf68

Compile to APK

```
APP_NAME="Your App Name"

PACKAGE_NAME="your.pkg.name"


AAPT="/path/to/android-sdk/build-tools/<your version>/aapt"

DX="/path/to/android-sdk/build-tools/<your version>/dx"

ZIPALIGN="/path/to/android-sdk/build-tools/<your
version>/zipalign"

APKSIGNER="/path/to/android-sdk/build-tools/<your
version>/apksigner"

PLATFORM="/path/to/android-sdk/platforms/android-<your
version>/android.jar"
```

Compile to APK

```
echo "Cleaning..."
rm -rf obj/*
rm -rf "$PACKAGE_DIR/R.java"

echo "Generating R.java file..."
$AAPT package -f -m -J src -M
AndroidManifest.xml -S res -I $PLATFORM
```

Compile to APK

```
echo "Compiling..."
ant compile -Dplatform=$PLATFORM

echo "Translating in Dalvik bytecode..."
$DX --dex --output=classes.dex obj
```

Compile to APK

```
echo "Making APK..."
$AAPT package -f -m -F bin/app.unaligned.apk -M AndroidManifest.xml -S res -I $PLATFORM
$AAPT add bin/app.unaligned.apk classes.dex
```

Compile to APK

```
echo "Aligning and signing APK..."
$APKSIGNER sign --ks debug.keystore --ks-pass "pass:123456" bin/app.unaligned.apk
#  $ZIPALIGN -f 4 bin/app.unaligned.apk bin/app.apk
cp bin/app.unaligned.apk bin/app.apk
```

ADB Install and Run apk

```
adb install -r bin/app.apk

adb shell am start -n "${PACKAGE_NAME}/.MainActivity"
```

Android Emulators

BlueStacks

Vs

Other Emulators

Andy / Memu /

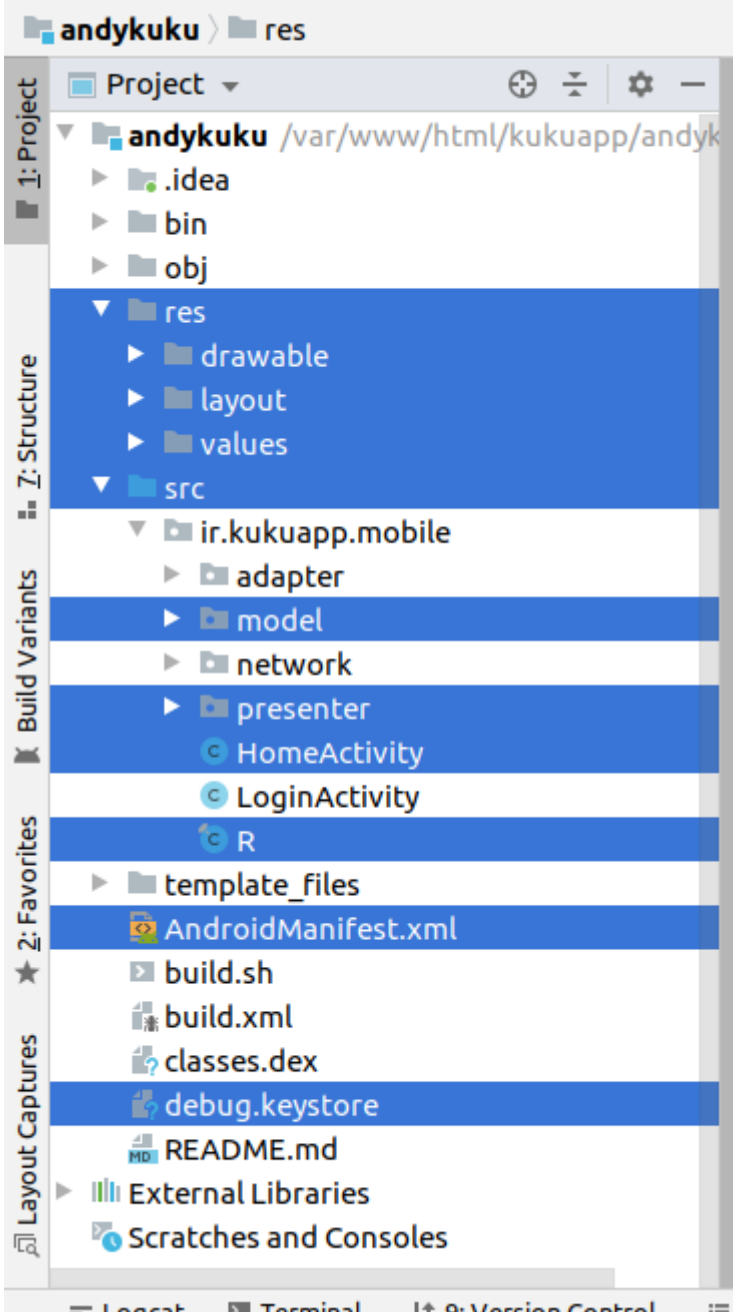
Nox / Remix OS /

Genymotion /

Ko Player

Android App Parts to Learn

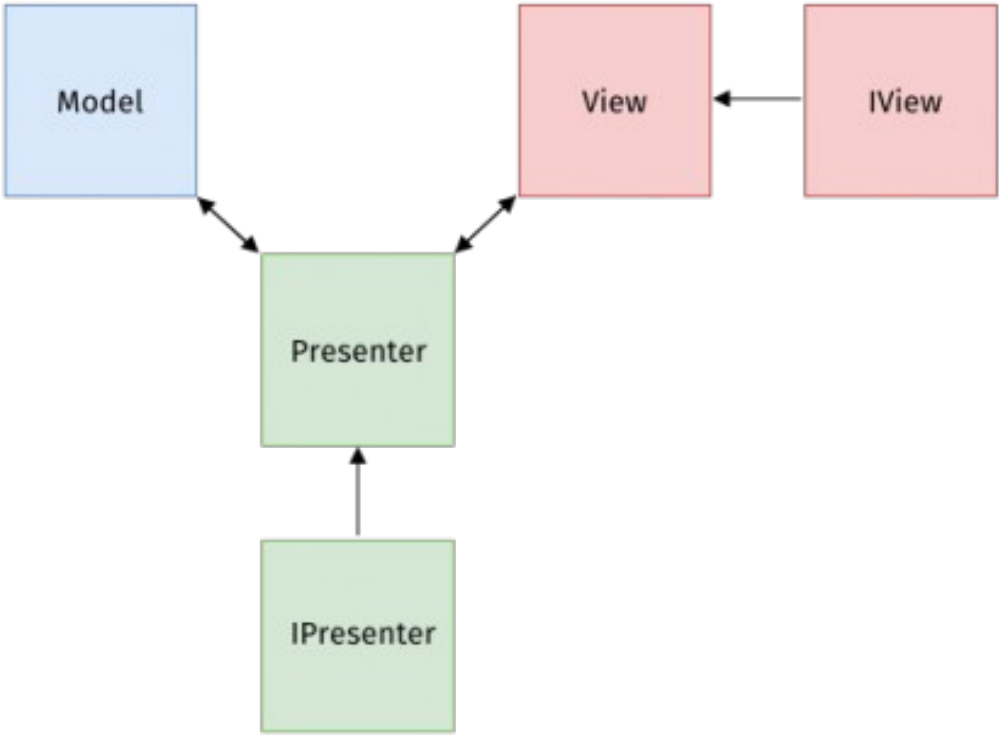
- Activities
- List Adapters
- Network
- Database
- Manifest
- Resources



MVP

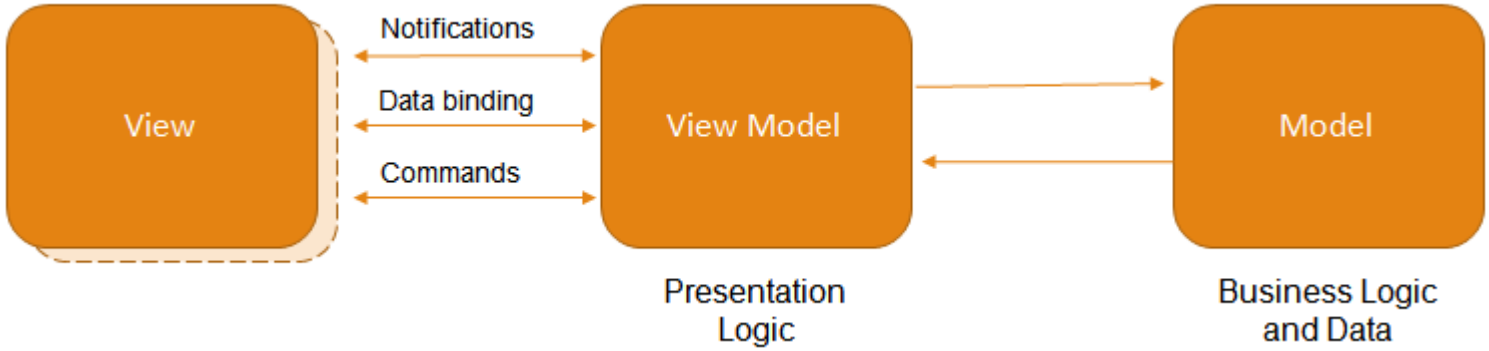
- Minimum Viable Product (Project Management)
- Model-View-Presenter (Software Engineering)

MVP



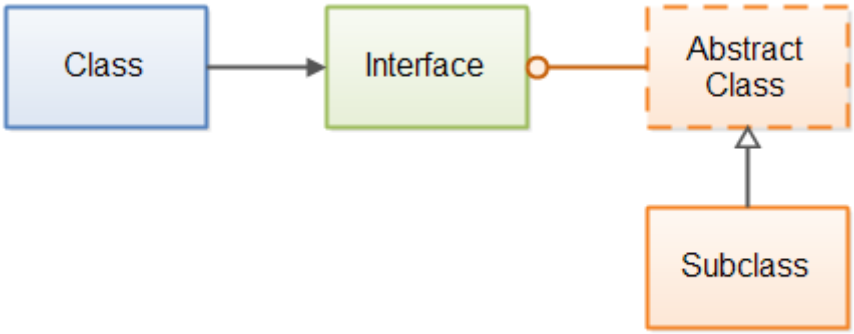
MVVM (Extra Info)

- Model-View-ViewModel



implement/extend

Multiple Inheritance in Java



override/overwrite

Override *(verb)*

To define a new behaviour of a method by creating the same method of the superclass with the same name and signature.

"How the cat runs is defined in the method `run()` *of the class* `Cat` *, which overrides the same method with the same signature of superclass called* `Mammal` *."*

Overwrite *(noun)*

The operation of destroying older data by recording new data over it.

Interface

```
public interface IMyClass {
    public void process(String
input) throws IOException;
}
```

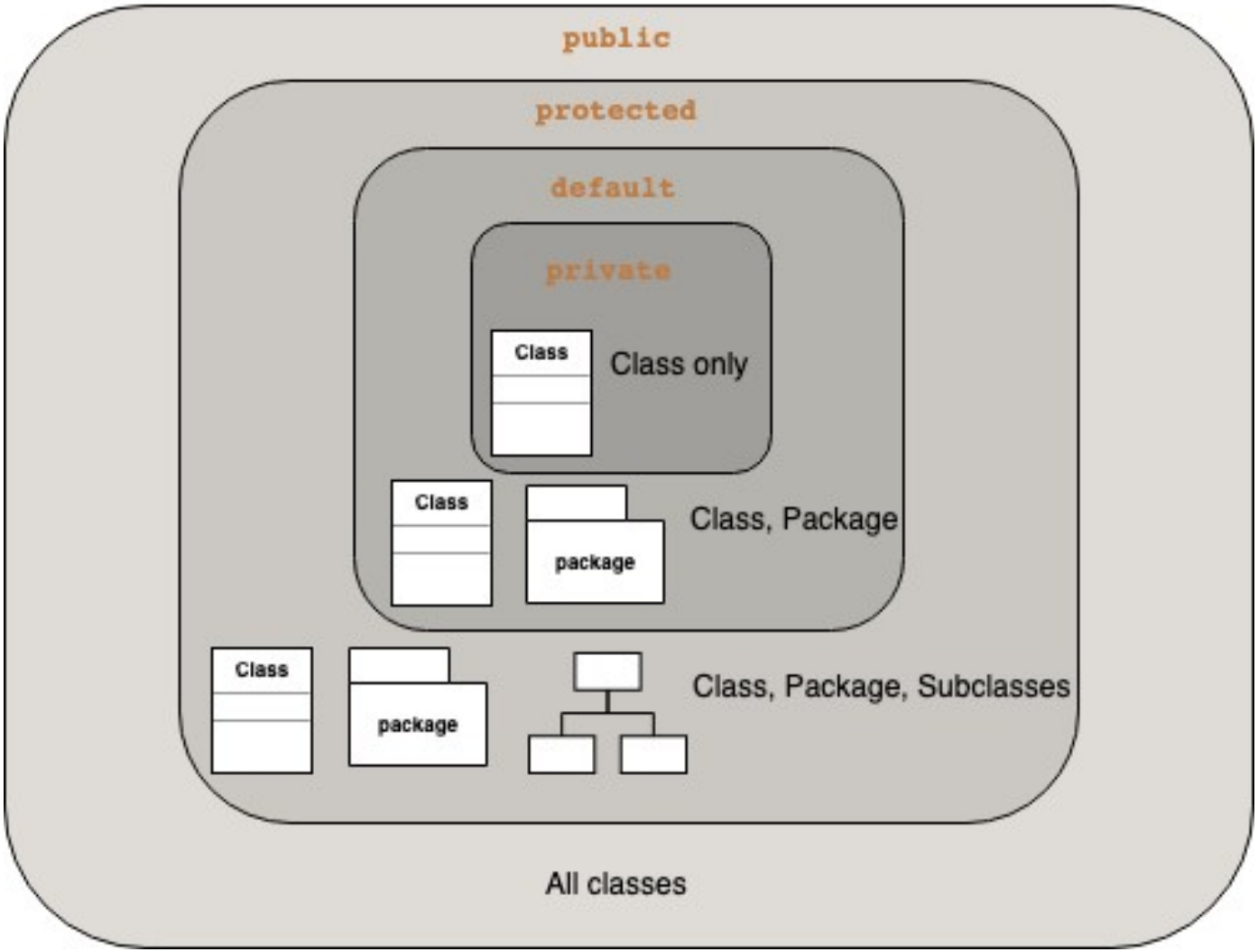
Abstract class

```
public abstract class MyClass implements IMyClass {

    public void process(String input) throws IOException {

        try {
            SecondaryFunc(input);
        } finally {
           // ...
        }
    }

    protected abstract void SecondarFunc(InputStream input)
        throws IOException;

}
```

Subclass

```
public class MyClassSlave extends MyClass {

    @Override
    protected void SecondaryFunc(InputStream input) throws IOException {
        // logic here ...
    }
}
```

public/private/protected



dynamic/static

Static Binding vs Dynamic Binding

Lets discuss the **difference between static and dynamic binding in Java**.

1. Static binding happens at compile-time while dynamic binding happens at runtime.
2. Binding of private, static and final methods always happen at compile time since these methods cannot be overridden. When the method overriding is actually happening and the reference of parent type is assigned to the object of child class type then such binding is resolved during runtime.
3. The binding of **overloaded methods** is static and the binding of overridden methods is dynamic.

thow Exception ()

```java
public class ThrowAnException {
    public static void main (String[] args) {
        try {
            int result=divideInt(10,5);
            System.out.format("10 divided by 5 is %d%n", result);
            divideInt(10,0);
            System.out.format("10 divided by 0 is %d%n", result);
        }
        catch (IllegalArgumentException ex) {
            System.out.println(ex.getMessage());
        }
    }
    public static int divideInt(int i, int j) {
        if (j == 0) {
            throw new IllegalArgumentException("Divisor cannot be zero!");
        }
        return i/j;
    }
}
```

`Model` inside

```
public class MyEntity {
    private String prop1 = "", prop2 = "";
    public User(String input_prop1, String input_prop2)    {
        this.prop1 = input_prop1;
        this.prop2 = input_prop2;
    }
    public String getProp1() {
        return this.prop1;
    }
    public void setProp1(String value) {
        this.prop1 = value;
    }
}
```

`Presenter` inside

```
public class MainActivityPresenter {
    private MyEnt myent;
    private MyView view;
    public MainActivityPresenter(View view) {
        this.myent = new MyEntity();
        this.view = view;
    }
    public void MyFunc(String input) {
        myent.setProp1(input);
        view.UpdateGUI();
    }
}
```

`View` inside

```
public class MainActivity extends Activity implements
MainActivityPresenter.View {
```

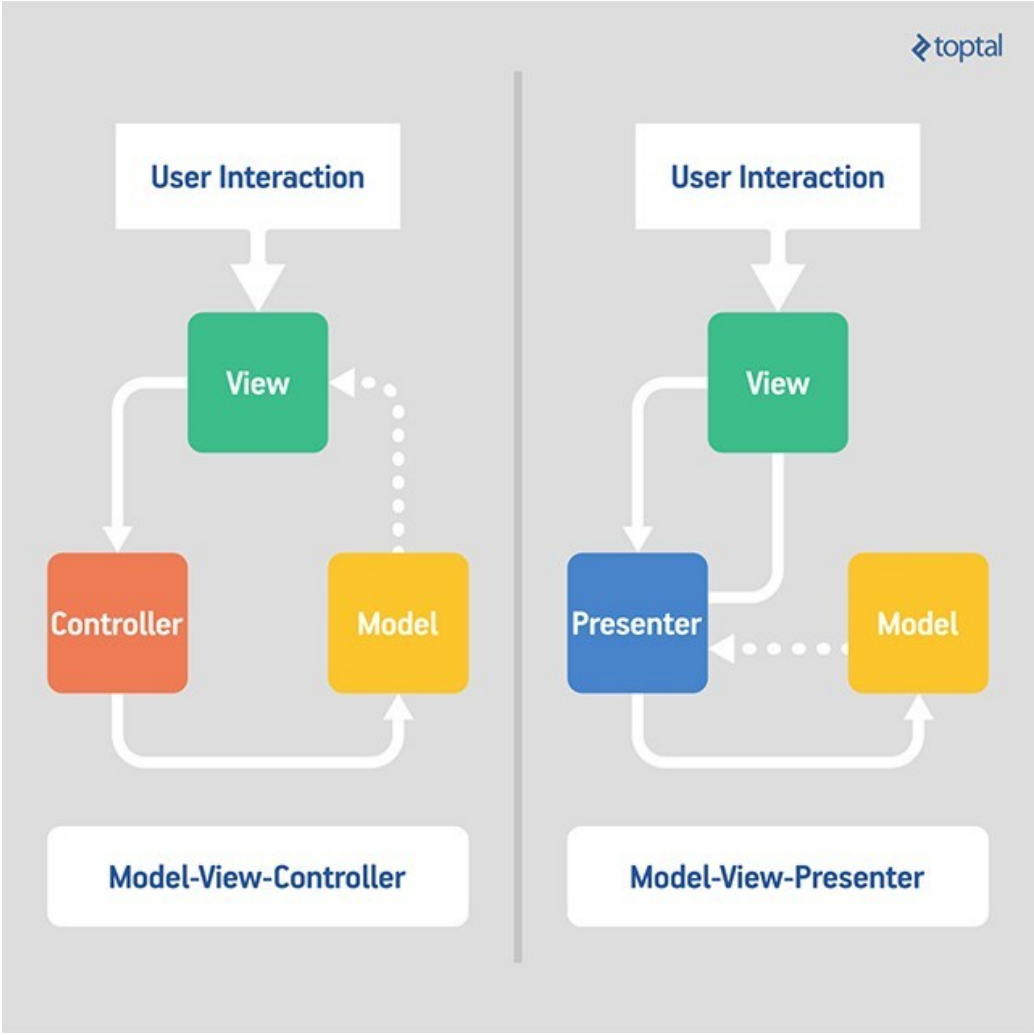
`View` inside

```
@Override
protected void onCreate(Bundle savedInstanceState)
{
    // ...
    presenter = new MainActivityPresenter(this);

    Event(){
        presenter.MyFunc(thetextbox.getText());
    }
}
```

`View` inside

```
@Override
public void UpdateGUI() {
    thetextbox.setText("Hello world");
}
```

Break;


toptal
User Interaction
View
Controller
Model
Model-View-Controller
User Interaction
View
Presenter
Model
Model-View-Presenter

Time for Back-end

Alireza Shirazi
@alirezashirazi

این بک‌اند دولپر مگه همون نیست که دو تا ورودی فرم را میریزه توی دیتابیس بعداً در یک جدول یا Json خروجی میده؟ دیگه برای کانکشتن زدن به دیتابیس برای خودتون اسم میگذارید؟

Translate Tweet

2:42 PM · Sep 6, 2019 · Twitter for iPhone

Network T-Shooting

```
$ traceroute <dest>
$ ping <dest>
$ nslookup <dest>
$ ifconfig
$ arp -a

win> tracert
win> ipconfig
```

cURL

```
curl --location --request POST "ht
alhost/kukuapp/the/post.php" \
  --header "Content-Type: application/x-ww
w-form-urlencoded" \
  --data "send=&Text=yet%20another%20test%
20post&UserId=1"
```

cURL with basic auth

curl **--user name:password** --location --request POST "http://localhost/kukuapp/the/post.php" --header "Content-Type: application/x-www-form-urlencoded" \

--data "send=&Text=[contenthere]&UserId=[user id]"

HTTP Connection - GET

```
URL obj = new URL(url);
HttpURLConnection con = (HttpURLConnection) obj.openConnection();
con.setRequestMethod("GET");
con.setRequestProperty("User-Agent", USER_AGENT);
if (username != null){
    String encoded = Base64.getEncoder().encodeToString(
            (username+":"+password).getBytes(StandardCharsets.UTF_8)
    );  //Java 8
    con.setRequestProperty("Authorization", "Basic "+encoded);
}
int responseCode = con.getResponseCode();
BufferedReader in = new BufferedReader(
        new InputStreamReader(con.getInputStream()));
String inputLine;
StringBuffer response = new StringBuffer();
while ((inputLine = in.readLine()) != null) {
    response.append(inputLine);
}
in.close();
return response.toString();
```

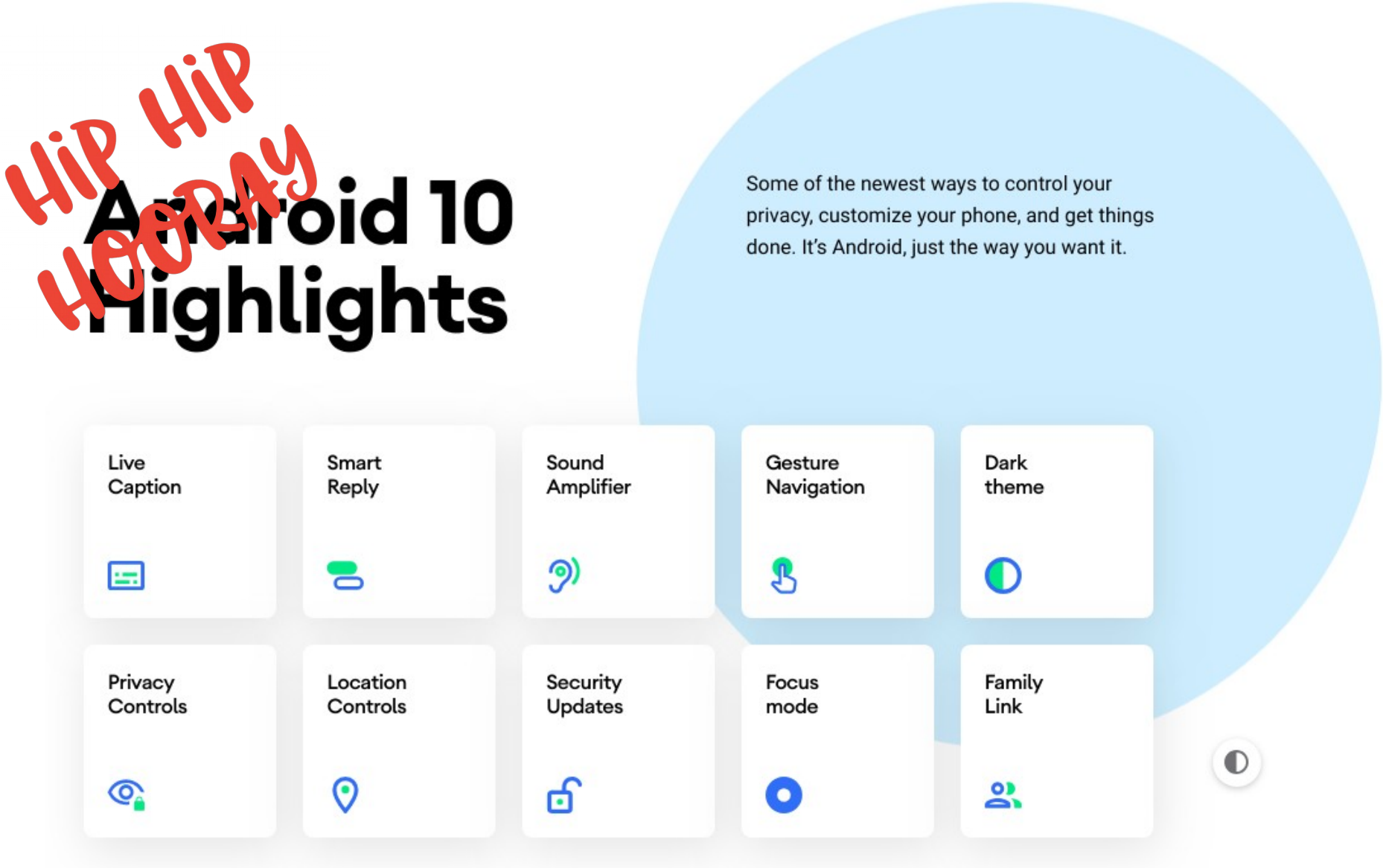
HTTP Connection - POST

```
84      URL obj = new URL(url);
85      HttpURLConnection con = (HttpURLConnection) obj.openConnection();
86      con.setRequestMethod("POST");
87      con.setRequestProperty("User-Agent", USER_AGENT);
88      con.setRequestProperty("Accept-Language", "en-US,en;q=0.5");
89      if (username != null){
90          String encoded = Base64.getEncoder().encodeToString(
91                  (username+":"+password).getBytes(StandardCharsets.UTF_8)
92          );  //Java 8
93          con.setRequestProperty("Authorization", "Basic "+encoded);
94      }
95      String urlParameters = "send=&Text=" + Text + "&UserId=" + UserID;
96      con.setDoOutput(true);
97      DataOutputStream wr = new DataOutputStream(con.getOutputStream());
98      wr.writeBytes(urlParameters);
99      wr.flush();
100     wr.close();
101     int responseCode = con.getResponseCode();
102     BufferedReader in = new BufferedReader(new InputStreamReader(con.getInputStream()));
103     String inputLine;
104     StringBuffer response = new StringBuffer();
105     while ((inputLine = in.readLine()) != null) {
106         response.append(inputLine);
107     }
108     in.close();
109     return response.toString();
```

JSON Decode

```java
public ArrayList<PostModel> decode_posts (String input) throws JSONException {

    ArrayList<PostModel> output = new ArrayList<~>();

    JSONArray jsonArray = new JSONArray(input);
    if (jsonArray != null) {
        for (int i=0;i<jsonArray.length();i++){
            JSONObject jsonObject = (JSONObject) jsonArray.get(i);
            output.add(
                    new PostModel(
                            jsonObject.getString( name: "Username"),
                            jsonObject.getString( name: "Text")
                    )
            );
        }
    }
    return output;
}
```

Time for Android stuff



List Adapter

```
public class HomeAdapter extends BaseAdapter {

    private Context context; //context
    private ArrayList<PostModel> items; //data source of the list adapter
```

List Adapter

```
@Override
public View getView(int position, View convertView, ViewGroup container) {
    if (convertView == null) {

        LayoutInflater inflater =
                (LayoutInflater) context.getSystemService(
                        Context.LAYOUT_INFLATER_SERVICE );
        convertView = inflater.inflate(
                R.layout.listitem_home,
                container, attachToRoot: false);
    }
```

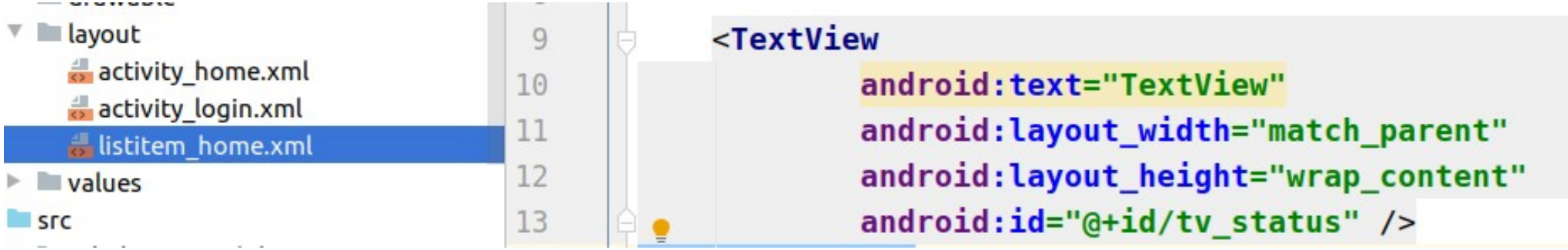
List Adapter

```
// Load the adapter
HomeAdapter adapter = new HomeAdapter( context: this, items);
// Attach adapter to widget
itemsListView.setAdapter(adapter);
```

ListView

```
<ScrollView
        android:layout_weight="10"
        android:fillViewport="true"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent">
        <ListView
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:id="@+id/list_home"/>
</ScrollView>
```

ListView Item



Manifest

```
<uses-permission a:name="android.permission.INTERNET" />
```

```
<application a:label="kuku" a:theme="@style/AppTheme" >
    <activity a:name='.HomeActivity'>
        <intent-filter>
            <category a:name='android.intent.category.LAUNCHER'/>
            <action a:name='android.intent.action.MAIN'/>
        </intent-filter>
    </activity>
    <activity a:name='.LoginActivity'>
    </activity>
</application>
```

Toast

A toast provides simple feedback about an operation in a small popup. It only fills the amount of space required for the message and the current activity remains visible and interactive. Toasts automatically disappear after a timeout.

```
Toast toast =
Toast.makeText(getApplicationContext(),
"This is a message displayed in a Toast",
Toast.LENGTH_SHORT);
toast.show();
```

Intent

An intent is an abstract description of an operation to be performed. It can be used with `Context#startActivity(Intent)` to launch an `Activity`, `broadcastIntent` to send it to any interested `BroadcastReceiver` components, and `Context.startService(Intent)` or `Context.bindService(Intent, ServiceConnection, int)` to communicate with a background `Service`.

An Intent provides a facility for performing late runtime binding between the code in different applications. Its most significant use is in the launching of activities, where it can be thought of as the glue between activities. It is basically a passive data structure holding an abstract description of an action to be performed.

```
Intent browserIntent =
new Intent(Intent.ACTION_VIEW,
Uri.parse("http://www.google.com"));
startActivity(browserIntent);
```

SharedPrefrences

```
SharedPreferences sharedPref =
        getApplicationContext().
                getSharedPreferences( name: "Login", Context.MODE_PRIVATE);
SharedPreferences.Editor editor = sharedPref.edit();
editor.putString("User ID", loginresponse);
editor.putString("Username", et_username.getText().toString());
editor.putString("Password", et_password.getText().toString());
editor.commit();
```

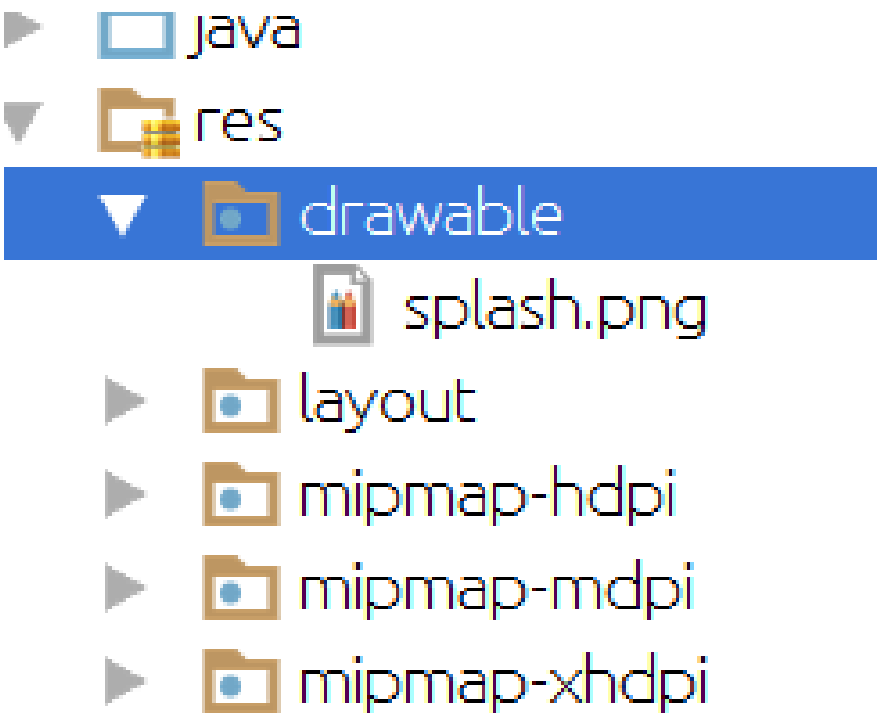
SharedPrefrences

```
SharedPreferences sharedPref =
        getApplicationContext()
        .getSharedPreferences( name: "Login",Context.MODE_PRIVATE);
username = sharedPref.getString("Username",  defValue: "");
password = sharedPref.getString("Password",  defValue: "");
userid = sharedPref.getString("User ID",  defValue: "");
```

drawable - XML

```
2
3   <shape xmlns:android="http://schemas.anc
4       <gradient
5               android:startColor="#00CCFF"
6               android:centerColor="#0000CC
7               android:endColor="#00CCFF"
8               android:angle="90"/>
9       <padding android:left="7dp"
10               android:top="7dp"
```

drawable - PNG



Multi-Threading

```
new Thread(new Runnable() {
    @Override
    public void run() {
        try  {
            // Your code goes here
            activity.runOnUiThread(new Runnable() {
                public void run() {
                    // UI stuff here
                }
            });
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
});
```

Home Activity Logic

1) Validate login
2) Redirect to LoginActivity (if step 1 not valid)
3) Download data from web server
4) Decode JSON
5) Cast to an array of model object
6) Pass the array to adapter
7) Assign adapter to ListView
8) Listen for UI component events

Recipes

- Android Java, Back-end PHP, Database MySQL
- Android React, Back-end Golang, Database Mongo
- Android Flutter, Back-end Dart, Database SQLite
- Android C++, Back-end C++, Database File System (Just for fun!)

What’s next?

- Session 7
- Artificial Intelligence (Recommender System using T-SQL)
- Session 8
- MVP implementation
- MVC Architecture in web API
- MVC Implementation

Exercise

- Think about dream job, path, and goal.
- Develop a simple sample project using MVP architecture.
- Have a self-study on recommender algorithms, applied data science, business intelligence; and find some examples.
- Keep an eye on R, Tensorflow, and MS SQL MDX
- Present all the items above.

Sepas =°

Resources and Images

- https://www.goodreads.com/quotes/646569-find-a-job-you-enjoy-doing-and-you-will-never
- https://brainchase.com/5-ways-earn-free-books-summer/
- https://www.goodreads.com/quotes/646569-find-a-job-you-enjoy-doing-and-you-will-never
- https://emulatorlab.com/bluestacks-vs-andy-nox-koplayer-memu/
- https://www.raywenderlich.com/7026-getting-started-with-mvp-model-view-presenter-on-android

Resources and Images

- https://bigprogram.wordpress.com/interface-in-java/
- http://tutorials.jenkov.com/java/interfaces-vs-abstract-classes.html
- https://stackoverflow.com/questions/215497/what-is-the-difference-between-public-protected-package-private-and-private-in
- https://documentation.devexpress.com/WPF/15112/MVVM-Framework

Resources and Images

- https://medium.com/cr8resume/make-you-hand-dirty-with-mvp-model-view-presenter-eab5b5c16e42
- http://java82.blogspot.com/2016/07/how-to-install-android-development.html
- https://stuff.mit.edu/afs/sipb/project/android/docs/tools/help/sdk-manager.html
- https://stackoverflow.com/questions/18507351/how-to-create-custom-button-in-android-using-xml-styles

Resources and Images

- https://stackoverflow.com/questions/42467989/android-box-shadow-and-border-radius-layout
- https://developer.android.com/about/versions/10
- https://www.snapclicksupply.com/digital-products/hip-hip-hooray-svg-cut-file/
- https://stackoverflow.com/questions/19196616/is-there-a-way-to-create-xxhdpi-xhdpi-hdpi-mdpi-and-ldpi-drawables-from-a-lar
- http://tutorials.jenkov.com/android/toast.html

Resources and Images

- https://www.webucator.com/how-to/how-throw-an-exception-java.cfm
- https://beginnersbook.com/2013/04/java-static-dynamic-binding/
- https://www.askdifference.com/overwrite-vs-override/

Session 7

به نام خدا

Session 6 - Review

- Hiring Software Companies in IRAN
- Android Integrated Development Environments
- Android Software Development Kit
- Android Debug Bridge
- Java Development Kit
- Certificates
- throw Exception

Session 6 - Review

- Linux Symbolic Links
- Model-View-Presenter Architecture
- Model-View-ViewModel Architecture
- implement/extend
- override/overwrite
- class
- interface
- dynamic/static

Session 6 - Review

- Network Commands
- cURL
- Java’s HttpsUrlConnection
- JSON Decode
- ListAdapter
- Android Manifest
- Toast

Session 6 - Review

- Intent
- SharedPrefrences
- Multi-Threading

Review
Session
Android
Resources
Software
Images
echo
Architecture
Engineering
commands
username
password
this.prop1
Kuku
bin/app.apk
ListView
Internet
Codes
Web-Based
Present
community
Inheritance
Database
Back-end
SQL
runs
INSERT
SharedPrefrences
Management
Exception
daemon
machine
server
version
client
Adapter
App
result
else
etc
shell
ERD
View
Code
run
Decode
value
data
Kit
HTTP
push
stuff
user
Top
level
input
project
throws
Install
Network
using
conn
POST
GET
Override
Forum
cURL
Hosting
don't
Toast
adb
void
Name
obj
Best
check
add
sql
git
GIT
Java
php
config
Kuku
Time
dest
Find
Pencil
Text
Nice
can
Gantt
Servers
Client
Login
Notation
Inheritance
drawable
htaccess
adapter
firstname
Connection
Native
Router
Register
IMyClass
Code
Manager
Activity
passwd
KeyBase
Server
Share
input_prop2
Interface
Routers
nothing
PLATFORM
Studio
debugging
today
MyClass
fetch
extends
Diagrams
String
Project
JSON
APK
new
Debug
List
Compile
process
Limitations
lastname
MyGuests
Follow
upload
devices
Solution
private
job
web
days
MySQL
public
PHP
sudo
name
javac
Next
MVC
Sepas
class
inside
AAPT
Manifest
ADB
device
Exercise
Lower
SELECT
Intent
MVP
team
bin/app.unaligned.apk
Development
forum
simple
IOException
development
DBMS
network
Flutter
Diagram
query($sql
finally
input_prop1
Commands
implementation
dynamic/static
AndroidManifest.xml
learn
hosting
command
Intelligence
VALUES
background
interface
implements
Model-View-Presenter
override/overwrite
dream
Members
System
Model-View-ViewModel
Multi-threading

There are
two wolves
and they are always fighting.
One is darkness and despair,
the other light and hope.
Which one wins?
The one you feed.
- Cherokee Legend

STARVE

YOUR DISTRACTIONS

—

FEED

YOUR FOCUS

MVC Demo

File Edit Selection View Go Debug Terminal Help — home.php - the - Visual Studio Code

EXPLORER

OPEN EDITORS
- home.php

THE
- docs
- internal
- static
- .htaccess
- favicon.ico
- home.php
- index.php
- login.php
- logout.php
- message.php
- post.php
- README.md
- register.php
- testlogin.php

OUTLINE
MYSQL

home.php ▸ HomeController ▸ GET

```php
<?php
include_once('internal/AController.php');
include_once('internal/db.php');

class HomeController extends AController
{
  function GET(){
    parent::GET();
    // parent::getRequest('Id')
    $sql = "SELECT * FROM `posts` INNER JOIN `users` ON `posts`.UserId = `users`.Id ORDER
    $conn = (new Datab())->Open();
    $result = $conn->query($sql);
    $data = [];
    while ($row = $result->fetch_assoc()) {
        // $data[array_shift($row)] = $row;
        $data[] = $row;
    }
    parent::setData($data);
    parent::returnData();
  }
}

$controller = new HomeController();
```

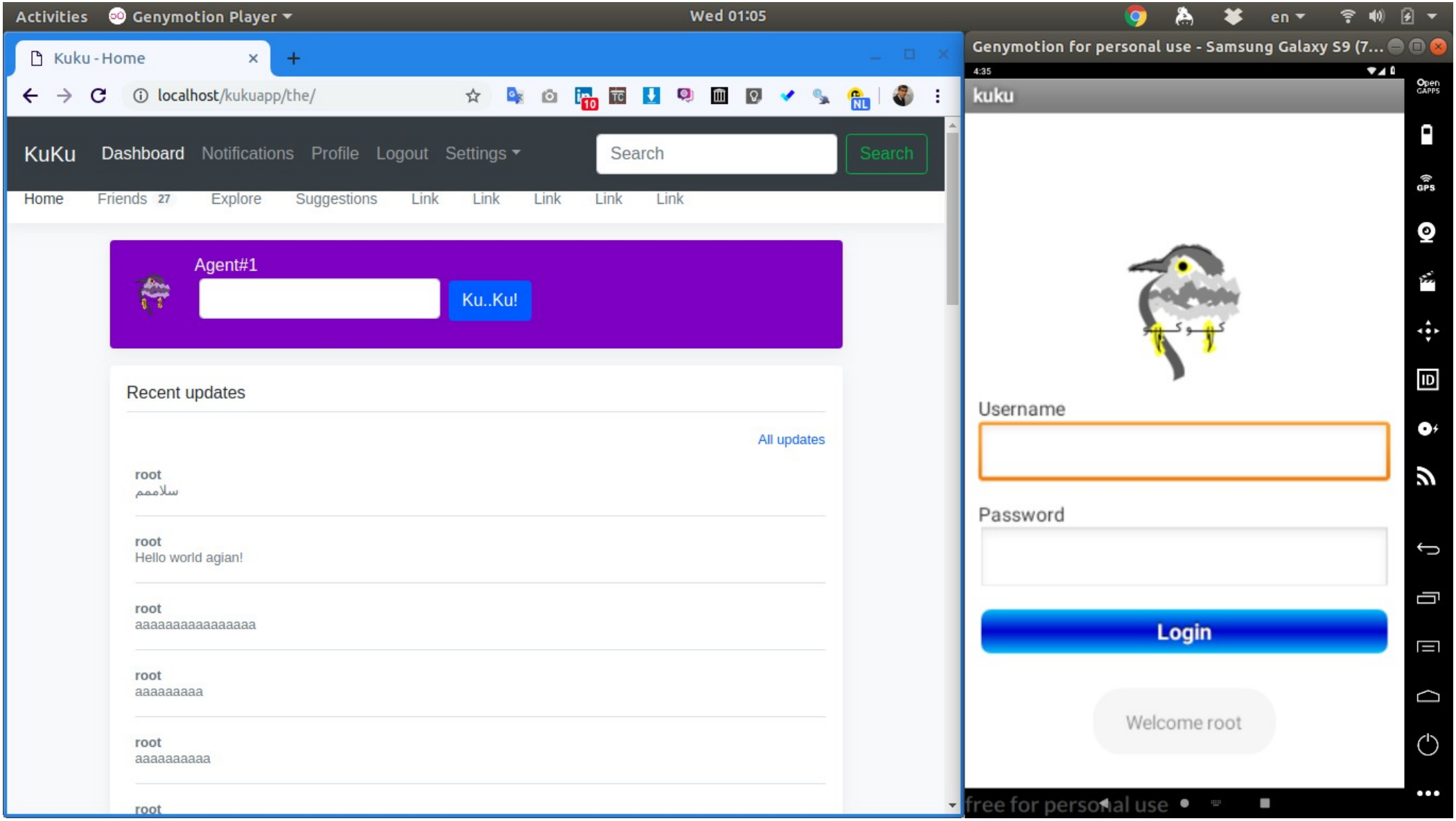
master 0 0 — Ln 15, Col 32 Spaces: 2 UTF-8 LF PHP

MVP Demo

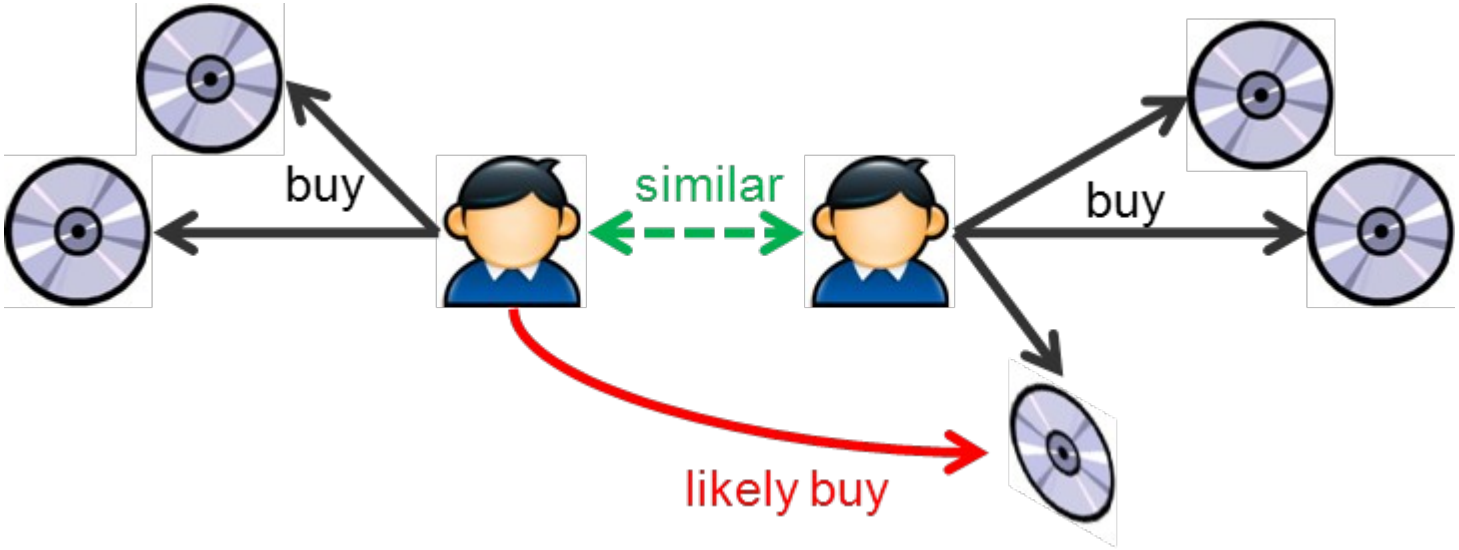
```java
import android.widget.*;
import ir.kukuapp.mobile.network.HttpConnection;
import ir.kukuapp.mobile.presenter.LoginPresenter;

public class LoginActivity extends Activity implements LoginPresenter.View
{

    LoginPresenter presenter;
    EditText et_username, et_password ;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        setContentView(RelativeLayout.inflate(this, R.layout.activity_login
, null));

         presenter = new LoginPresenter(this);

        et_username = (EditText)findViewById(R.id.et_username);
        et_password = (EditText)findViewById(R.id.et_password);

        // Login button clicked
        ((Button)findViewById(R.id.btn_login)).setOnClickListener(new View.
OnClickListener() {
            @Override
            public void onClick(View v) {
                presenter.Login(et_username.getText().toString(), et_passwo
rd.getText().toString());
            }
        });

    }

    @Override
    public void ShowError(String Message) {
        Toast.makeText(getApplicationContext(), Message, Toast.LENGTH_LONG)
.show();
    }
}
                                                    42,1          Bot
[0] 0:vi*
```

```java
import android.widget.Toast;
import ir.kukuapp.mobile.R;
import ir.kukuapp.mobile.internal.SharedMem;
import ir.kukuapp.mobile.model.UserModel;
import ir.kukuapp.mobile.network.HttpConnection;

public class LoginPresenter {

    View view ;

    public LoginPresenter(View view)
    {
        this.view = view;
    }

    public void Login (String username, String password) {
        // Check login
        HttpConnection http = new HttpConnection(username, password);

        try{
            String loginresponse = http.getLogin();
            // Save username and password for next requests
            new SharedMem(view.getApplicationContext()).setLoginCredits(us
ername, password, loginresponse);
            view.finish();
        }catch (Exception exp) {
            view.ShowError("Login failed");
        }


    }

    public interface View {
        void ShowError(String Message);

        // Inherited methods
        Context getApplicationContext () ;
        void finish();
    }
}
-- VISUAL --                                  2          42,6          Bot
"yar" 01:03 11-Sep-19
```

We are done!

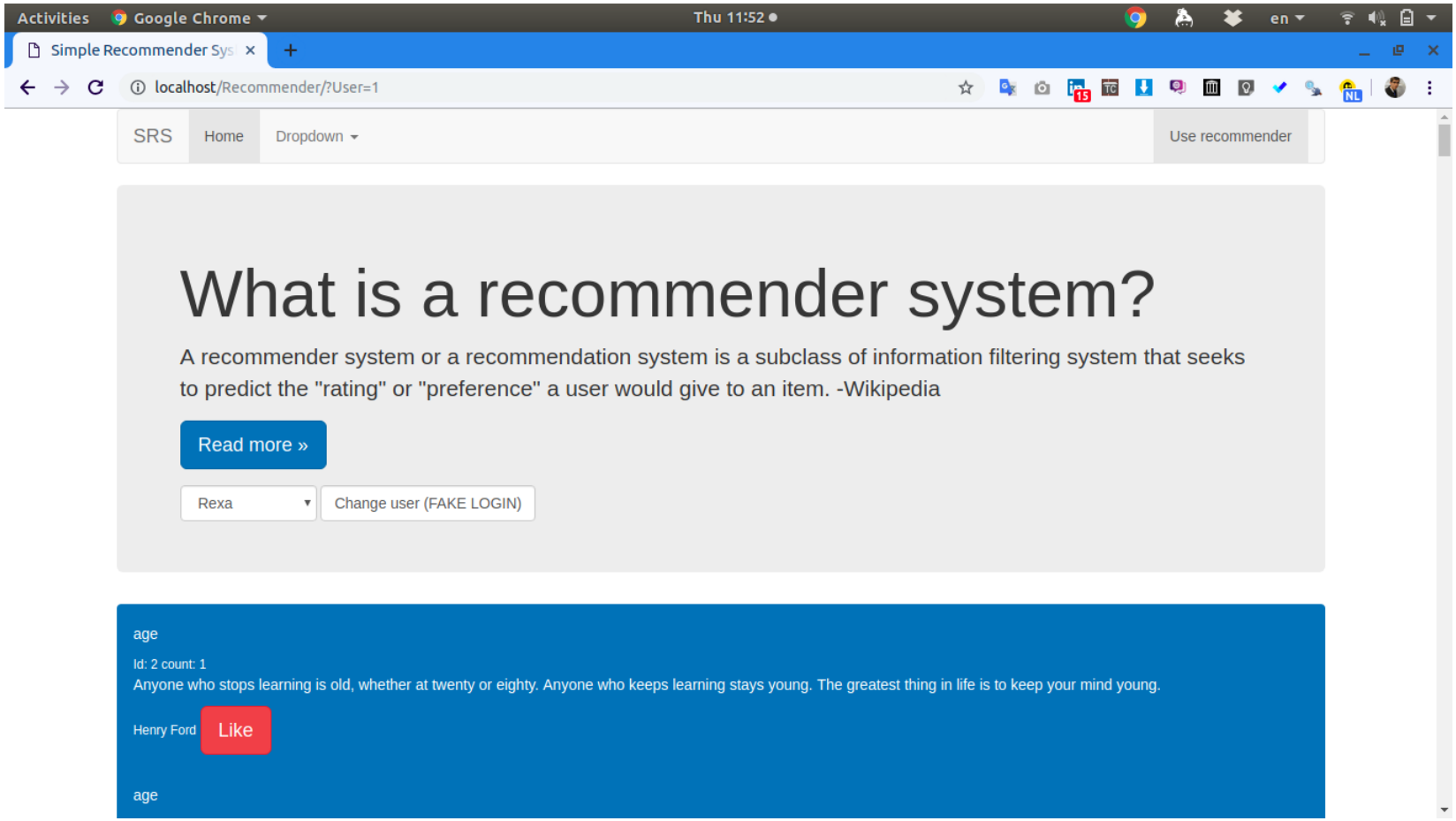

Activities
Genymotion Player
Wed 01:05
en
Kuku - Home
localhost/kukuapp/the/
KuKu
Dashboard
Notifications
Profile
Logout
Settings
Search
Search
Home
Friends 27
Explore
Suggestions
Link
Link
Link
Link
Link
Agent#1
Ku..Ku!
Recent updates
All updates
root
سلاممم
root
Hello world agian!
root
aaaaaaaaaaaaaaa
root
aaaaaaaaa
root
aaaaaaaaaa
root
Genymotion for personal use - Samsung Galaxy S9 (7...
4:35
kuku
Username
Password
Login
Welcome root
free for personal use

Collaborative Filtering and Recommendation



$$r_{ij} = \frac{\sum_k Similaries(u_i, u_k) r_{kj}}{number\ of\ ratings}$$

Recommender



Our very first logic

tayyebi@yar: ~

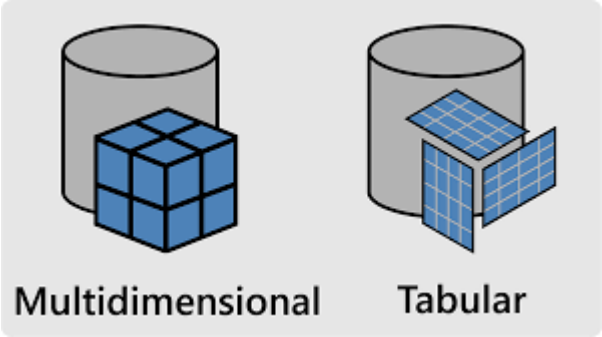
File Edit View Search Terminal Help

```
select *, count(*) as ccount from
(
SELECT posts.*, inter.userId FROM int
er RIGHT OUTER JOIN posts on inter.po
stId = posts.Id
) A
WHERE A.userId NOT IN (' . $_GET['Use
r'] . ')
group by A.Id, A.From, A.Content, A.C
ategory, A.userId
order by ccount desc
limit 100

                    118,1          64%
```

SQL Create Table As Select

```
CREATE TABLE suppliers
AS (SELECT *
    FROM companies
    WHERE id > 1000);
```

Multidimensional Data



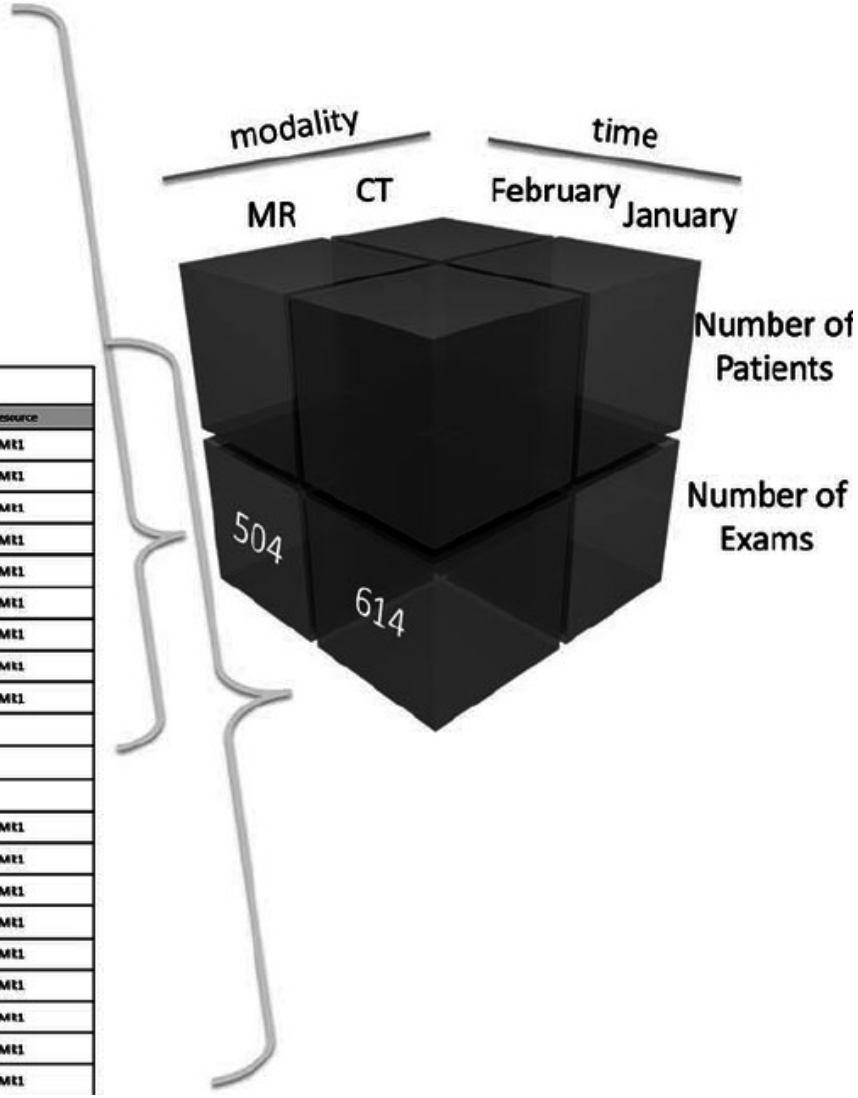
Multidimensional Data

February

ID	Date_1	Modalities	Exame_Code	Resource
7544	2/1/2007	MR	MR2	Mt1
7545	2/1/2007	MR	MR5	Mt1
7546	2/1/2007	MR	MR3	Mt1
7547	2/1/2007	MR	MR3	Mt1
7548	2/2/2007	MR	MR5	Mt1
7549	2/2/2007	MR	MR1	Mt1
7550	2/2/2007	MR	MR5	Mt1
7551	2/2/2007	MR	MR1	Mt1
7552	2/2/2007	MR	MR2	Mt1
7662				
7663				
7664				
7665				
7666				
7667				
7668				
7669				
7670				

January

ID	Date_1	Modalities	Exame_Code	Resource
7377	1/1/2007	MR	MR4	Mt1
7378	1/1/2007	MR	MR3	Mt1
7379	1/1/2007	MR	MR4	Mt1
7380	1/1/2007	MR	MR2	Mt1
7381	1/1/2007	MR	MR3	Mt1
7382	1/1/2007	MR	MR2	Mt1
7383	1/1/2007	MR	MR3	Mt1
7384	1/1/2007	MR	MR3	Mt1
7385	1/2/2007	MR	MR2	Mt1
		.		
		.		
		.		
7533	1/30/2007	MR	MR5	Mt1
7534	1/30/2007	MR	MR3	Mt1
7535	1/30/2007	MR	MR1	Mt1
7536	1/30/2007	MR	MR4	Mt1
7537	1/30/2007	MR	MR3	Mt1
7538	1/30/2007	MR	MR5	Mt1
7539	1/31/2007	MR	MR1	Mt1
7540	1/31/2007	MR	MR2	Mt1
7541	1/31/2007	MR	MR1	Mt1



OLTP

OLTP (Online Transactional Processing) is a category of data processing that is focused on transaction-oriented tasks. OLTP typically involves inserting, updating, and/or deleting small amounts of data in a database.

OLTP mainly deals with large numbers of transactions by a large number of users.

OLTP

Examples of OLTP Transactions

Examples of OLTP transactions include:

- Online banking
- Purchasing a book online
- Booking an airline ticket
- Sending a text message
- Order entry
- Telemarketers entering telephone survey results
- Call center staff viewing and updating customers' details

OLTP

ACID Compliance

In order to maintain data integrity, OLTP databases need to be ACID-compliant. ACID refers to a standard set of properties that guarantee database transactions are processed reliably. It ensures that the transactions are accurate, consistent, isolated, and durable.

OLAP

OLAP (Online Analytical Processing) is a category of database processing that facilitates business intelligence.

OLAP provides analysts, managers, and executives with the information they need to make effective decisions about an organization's strategic directions. OLAP can provide valuable insights into how their business is performing, as well as how they can make improvements.

OLAP

OLAP tools are optimized for querying and reporting. This is in contrast to Online Transactional Processing (OLTP) applications, which are mainly concerned with transaction based tasks. OLAP tools enable users to analyze multidimensional data interactively from multiple perspectives. OLAP can be used to find trends and get a big picture view of the data. It can also be used for complex number crunching, and to create "what if" scenarios for forward planning.

OLAP

OLAP and Data Warehouses

OLAP and data warehouses are two different things. However, OLAP can be used to transform the data from a data warehouse into strategic information.

A data warehouse stores and manages data, typically in relational databases. These could be extremely large databases with enormous amounts of data.

OLAP data, on the other hand, is stored in a multidimensional database. In a multidimensional database, each data attribute (such as product, region, time period, etc) is considered a separate “dimension”. OLAP tools can be used to extract data from the intersections of such dimensions. For example, all products sold in the Northeast region during the last quarter.

OLAP

OLAP Cubes

An OLAP cube is typically a multi-dimensional array of data. If we visualize a three dimensional cube, we could have products along the *x* axis, regions along the *y* axis, and time period along the *z* axis.

So a an OLAP tool could be used to summarize sales data by product, region, and time period, for example.

However, OLAP cubes are not restricted to three dimensions. An OLAP cube could have any number of dimensions. In these cases, such a cube is sometimes referred to as a *hypercube*.

The sides of an OLAP cube are not necessarily of equal length – OLAP cubes are not cubes in the strictly mathematical sense. However, the term is a commonly used one when working with OLAP.

DW

A *data warehouse* is a large collection of data that can be used to help an organisation make key business decisions.

DW

The key point here, is that a data warehouse contains data that is:

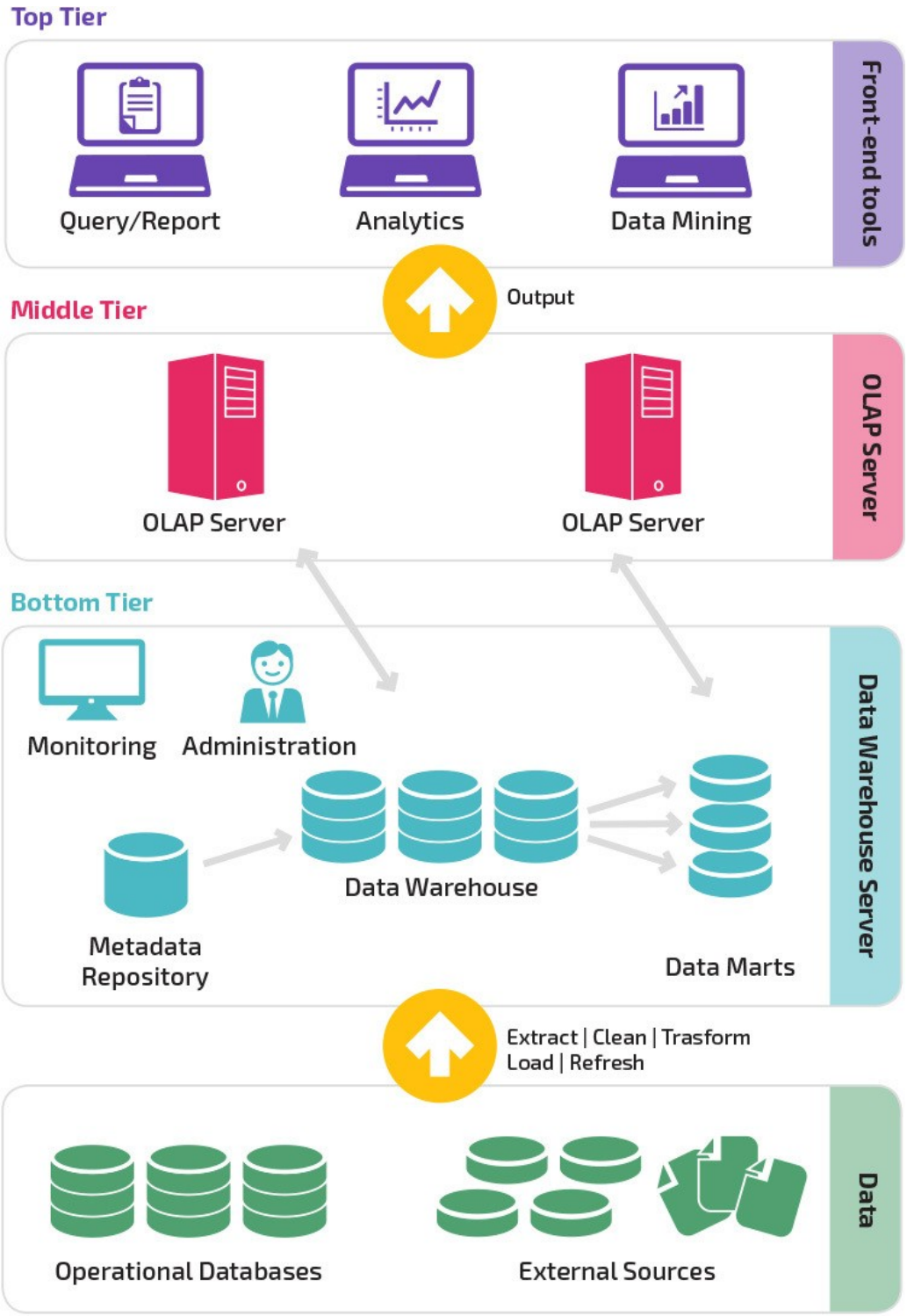
- Subject-oriented
- Integrated
- Nonvolatile
- Time-variant

Business Intelligence (BI) Tools

Once the data warehouse is up and running, it can now be queried and analysed using purpose built tools tailored for the organisation's specific needs. These tools will need to have been identified and built/purchased as part of the data warehousing project.

Such tools are often referred to as Business Intelligence (BI) tools.

More advanced tools will no doubt always be released in the future, and these can be evaluated on a case by case basis. The fact that the data warehouse has been established will almost certainly make it easier to introduce new BI tools to the system.


Top Tier
Query/Report
Analytics
Data Mining
Front-end tools
Output
Middle Tier
OLAP Server
OLAP Server
OLAP Server
Bottom Tier
Monitoring
Administration
Metadata Repository
Data Warehouse
Data Marts
Data Warehouse Server
Extract | Clean | Trasform
Load | Refresh
Operational Databases
External Sources
Data

Test Project

(Wireframes from: behance.net)

Crowdfunding

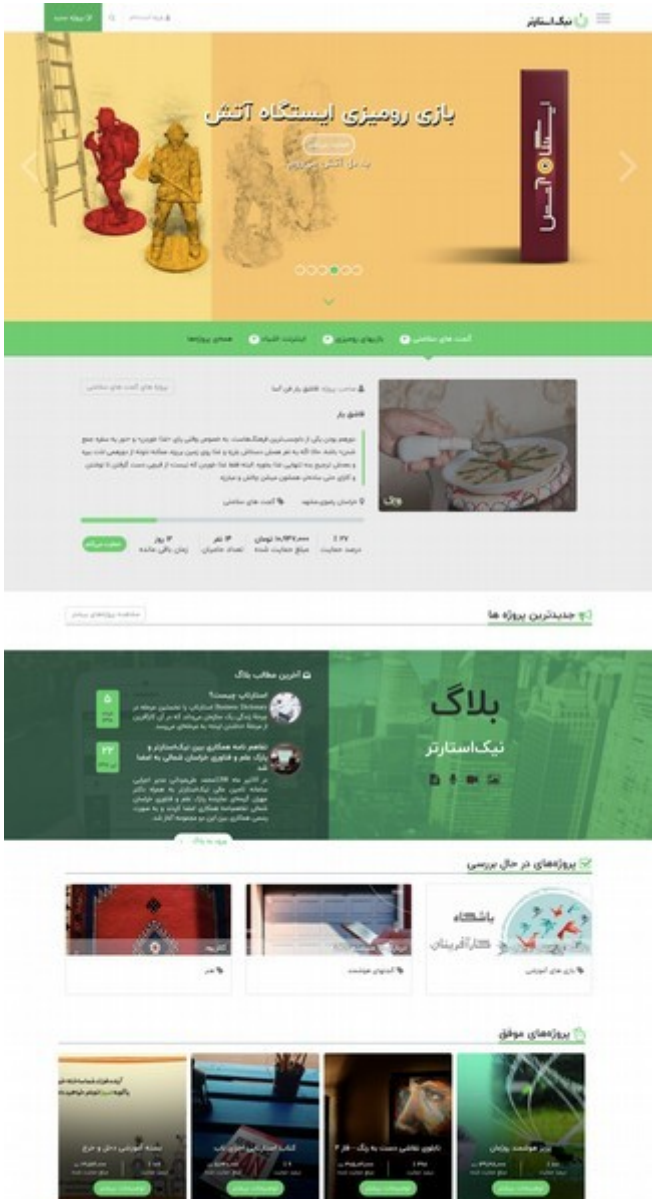
تعریف دقیق تر از کراود فاندینگ

در واقع کراود فاندینگ از دو لغت کراود (Crowd) به معنای "انبوه مردم" و فاندینگ (Funding) به معنای "تامین سرمایه" تشکیل شده است. شاید بتوان کراود فاندینگ را به صورت "تامین سرمایه از طریق گروهی از افراد" یا "تامین سرمایه ی مردمی" ترجمه کرد.

کراود فاندینگ در واقع به منظور حمایت مالی از هنرمندان، کارآفرینان، صاحبان ایده و استارتاپ ها به وجود آمده است. میتوان کراودفاندینگ را یکی از راه های نجات صنعت، تکنولوژی و هنر یک جامعه دانست. در یک پروژه ی کراودفاندیگ، فرد کارآفرین یا هنرمند، کمپین خود را ایجاد کرده و مردم از طریق حمایت های مالی خود (حتی به مقادیر بسیار اندک) سرمایه ی مورد نیاز وی را فراهم کرده و او را از فرایند بسیار دشوار جذب سرمایه از مراکز دولتی و یا خصوصی بی نیاز می کنند. به همین دلیل فرد کارآفرین یا هنرمند می تواند با خیالی آسوده تر و با تمرکزی بیشتر بر روی پروژه ی خود کار کند.

نکته ی مهمی که نباید از آن بگذریم این است که در یک پروژه ی کراودفاندینگ فرد حمایت کننده نیز می تواند از مزایای ویژه ای برخوردار شود. اولین و مهمترین ارزشی که کراودفاندینگ ایجاد می کند این است که با هزینه ای کم می توان کمک بزرگی به چرخه ی اقتصادی، هنر و صنعت کشور کرد. از طرفی در برخی از پروژه ها، فرد صاحب کمپین امکانات ویژه ای را برای حامیان خود در نظر می گیرد. به عنوان مثال به آنها تعهد می دهد که بعد از تولید یک محصول خاص، آن را با قیمتی پایین تر و یا با شرایطی ویژه در اختیار حامیان مالی خود قرار دهد.

Examples (Random Selected)



Examples (Random Selected)

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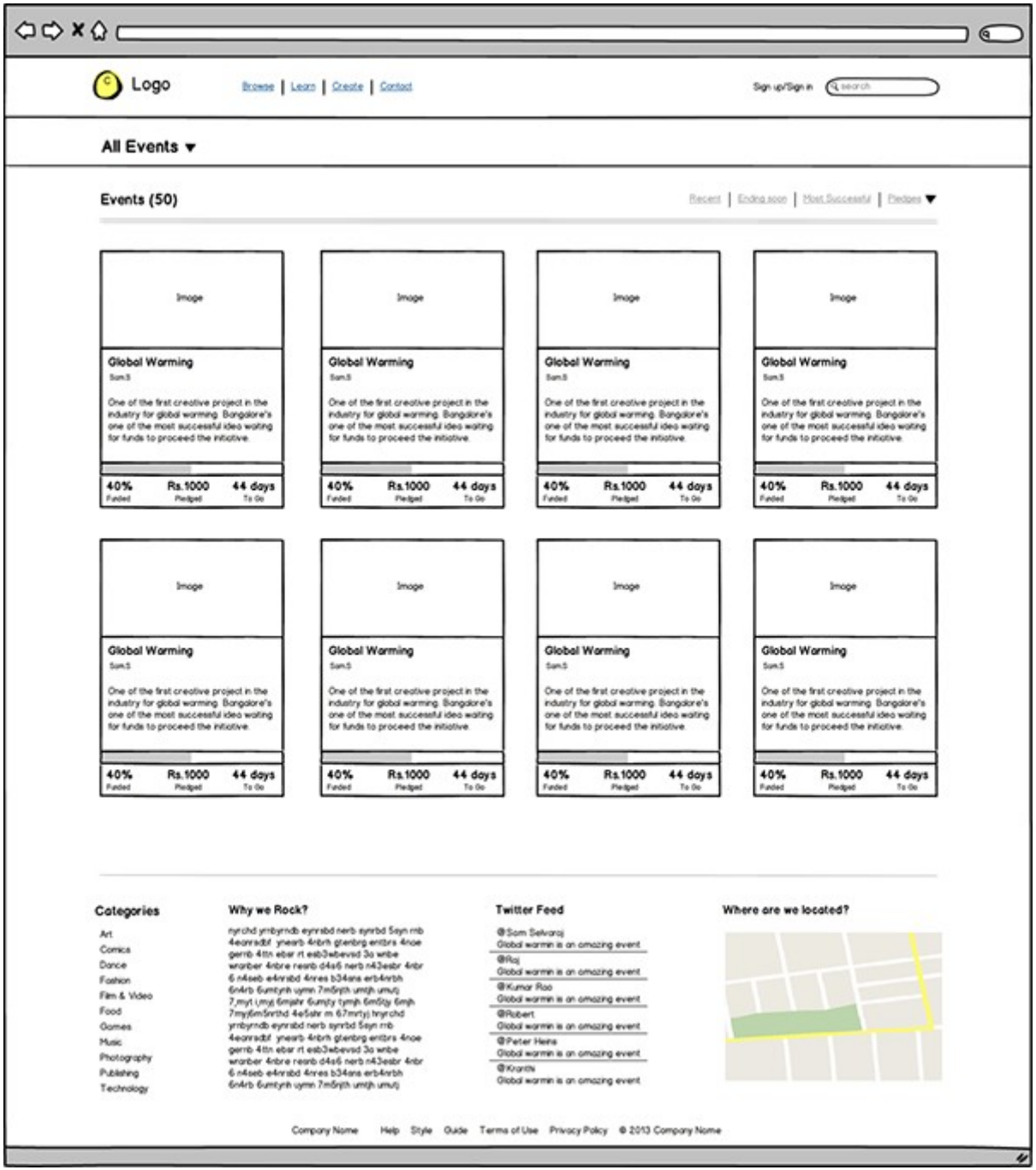
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Rs.1000 Pledged
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One of the first creative project in the industry for global warming. Bangalore's one of the most successful idea waiting for funds to proceed the initiative.

Share:

40% Funded

$1000 Pledged

44 days To Go

10 BACKERS

0 HOURS

This project will only be funded if at least $75.00 is pledged by August 5, 2013.

SUPPORT NOW

Funding Period

Aug 5, 2013 - Sep 4, 2013 (30 days)

Orchestra

An orchestra is a large instrumental ensemble that contains sections of string, brass, woodwind, and percussion instruments. The term orchestra derives from the Greek , the name for the area in front of an ancient Greek stage reserved for the Greek chorus. The orchestra grew by accretion throughout the 18th and 19th centuries, but changed very little in composition during the course of the 20th century.

A smaller sized orchestra for this time period (of about fifty musicians or fewer) is called a chamber orchestra. A sizée orchestra (about 100 musicians) may sometimes be called a "symphony orchestra" or "philharmonic orchestra"; these modifiers do not necessarily indicate any strict difference in either the instrumental constitution or role of the orchestra, but can be useful to distinguish different ensembles based in the same city (for instance, the London Symphony Orchestra and theLondon Philharmonic Orchestra). A symphony orchestra will usually have over eighty musicians on its roster, in some cases over a hundred, but the actual number of musicians employed in a particular performance may vary according to the work being played and the size of the venue. A leading chamber orchestra might employ as many as fifty musicians; some are much smaller than that. Orchestras can also be found in schools. The term concert orchestra may sometimes be used (e.g., BBC Concert Orchestra; RTÉ Concert Orchestra)—no distinction is made on size of orchestra by use of this term, although their use is generally distinguished as for live concert. As such they are commonly chamber orchestras.

The typical symphony orchestra consists of four proportionate groups of similar musical instruments called the woodwinds,brass, percussion, and strings. Other instruments such as the piano and celesta may sometimes be grouped into a fifth section such as a keyboard section or may stand alone, as may the concert harp and electric and electronic instruments. The orchestra, depending on th size, contains almost all of the standard instruments in each group. In the history of the orchestra, its instrumentation has been expande over time, often agreed to have been standardized by the classical period and Beethoven's influence on the classical model.

Beethoven's influence

The so-called "standard complement" of double winds and brass in the orchestra from the first half of the 19th century is generally attributed to the forces called for by Ludwig van Beethoven. The exceptions to this are his Symphony No. 4, Violin Concerto, and Piano Concerto No. 4, which each specify a single flute. The composer's instrumentation almost always included paired flutes, oboes, clarinets bassoons, horns and trumpets. Beethoven carefully calculated the expansion of this particular timbral "palette" in Symphonies 3, 5, 6, and 9 for an innovative effect. The third horn in the "Eroica" Symphony arrives to provide not only some harmonic flexibility, but also the effect of "choral" brass in the Trio. Piccolo, contrabassoon, and trombones add to the triumphal finale of his Symphony No. 5. A piccolo a pair of trombones help deliver storm and sunshine in the Sixth. The Ninth asks for a second pair of horns, for reasons similar to the "Eroica" (four horns has since become standard); Beethoven's use of piccolo, contrabassoon, trombones, and untuned percussion—plus chorus and vocal soloists—in his finale, are his earliest suggestion that the timbral boundaries of "symphony" might be expanded for goo But for several decades after his departure, symphonic instrumentation was faithful to Beethoven's well-established model, with few exceptions.

Updates

April, 2013

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January, 2013

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Backers

About the Author

Maria Lauenstein Denjongpa

Beverly, MA

Contact me

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Perks

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Pledge $20 or more

We will send you three digital images (email) from the book that you can use desktop wallpaper.

Estimated delivery: Dec 2014

Pledge $30 or more

Pledge $40 or more

Exam

- 10 Marks to Project
- 3 Marks to class activity
- 7 Marks to paper

Exam

- It’s a pleasure to accept your projects on September 18th (Shahrivar-maah 27th)

What’s next?

- Paper test
- Q&A
- Skills test

Sepas =°

Resources and Images

- https://www.etsy.com/listing/258326089/cherokee-legend-two-wolves-quote-used-in
- https://www.pinterest.com/pin/382172718364595925/?lp=true
- https://towardsdatascience.com/intro-to-recommender-system-collaborative-filtering-64a238194a26
- https://en.wikipedia.org/wiki/File:Collaborative_filtering.gif#/media/File:Collaborative_filtering.gif

Resources and Images

- https://www.behance.net/gallery/11066983/Crowdfunding-Wireframes
- https://hamijoo.com/%DA%A9%D8%B1%D8%A7%D9%88%D8%AF-%D9%81%D8%A7%D9%86%D8%AF%DB%8C%D9%86%DA%AF-crowdfunding-%DA%86%DB%8C%D8%B3%D8%AA%D8%9F-%D9%82%D8%B7%D8%B1%D9%87-%D9%82%D8%B7%D8%B1%D9%87-%D8%AA%D8%A7-%D8%AF%D8%B1/
- https://database.guide/what-is-oltp/

Resources and Images

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- https://database.guide/what-is-a-data-warehouse/
- https://panoply.io/data-warehouse-guide/data-warehouse-architecture-traditional-vs-cloud/
- https://selfservedbi.com/2017/11/26/bi-theory-7-multidimensional-vs-tabular/

YouTube

https://www.youtube.com/playlist?list=PL814DN-Ek494jxAfmsoG_wNcHbkY2PQWL