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ASYNCHRONOUS REQUEST VIA AJAX

ITEC2016 - DATA-DRIVEN VISUALIZATION FOR THE WEB

CHAPTER 9 - 2018 - HKBU

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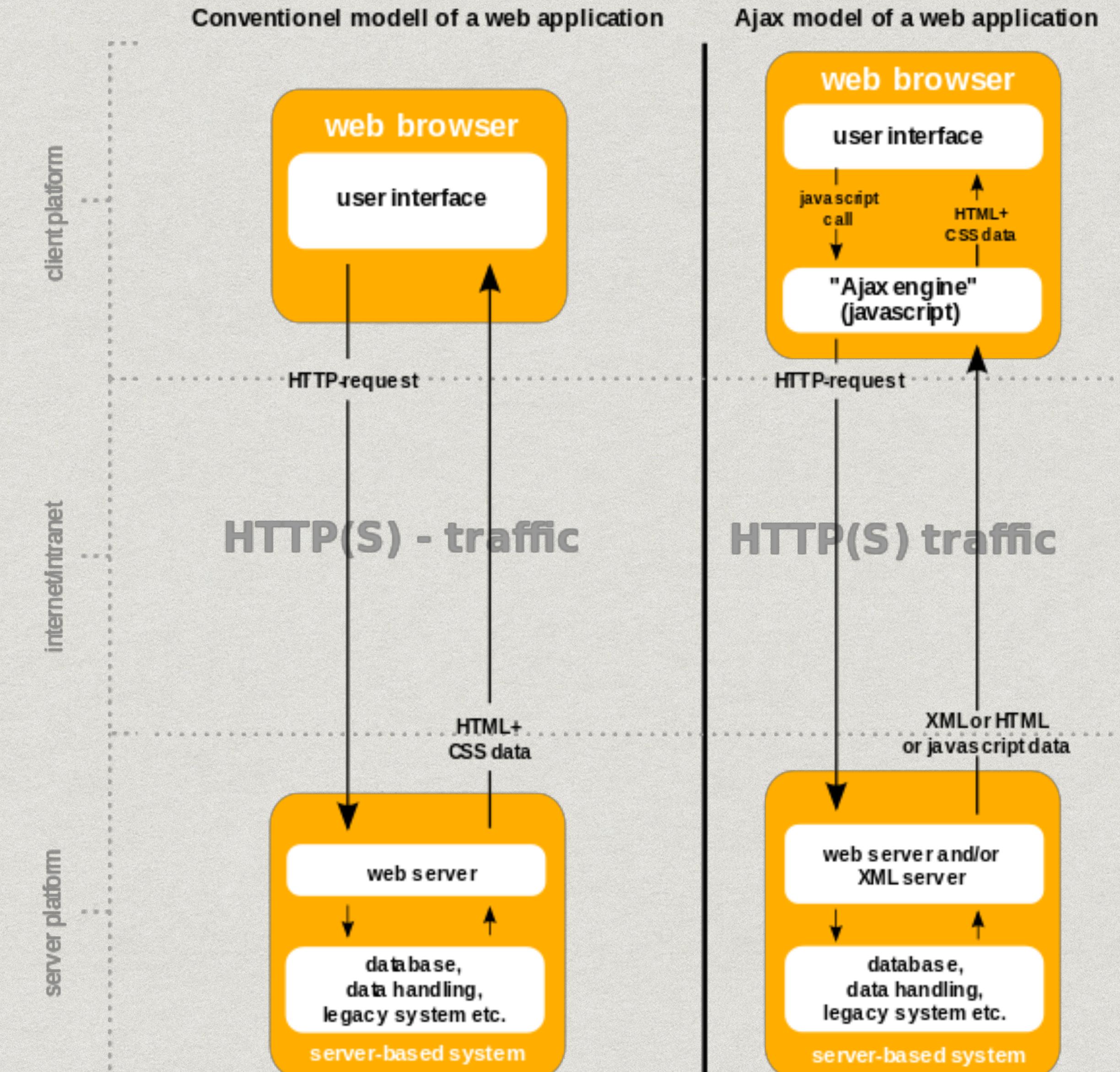
AJAX

- * How can we request data from the web server **without reloading the current page?**
- * Ajax.



AJAX

- * **Asynchronous JavaScript and XML (AJAX)**
- * Update a web page **without reloading the page.**
- * **X is misleading. Doesn't have to be XML.**
- * Can use **JSON** or plain text.



JSON

- * JSON (**JavaScript Object Notation**) is a lightweight **data-interchange format**.
- * JSON is built on two structures:
 - * A collection of **name/value pairs**.
 - * An **ordered list** of values.

```
[ {  
    "name": "Martin Choy",  
    "age": 23,  
    "id": 7,  
},  
{  
    "name": "Kenny Cheng",  
    "age": 22,  
    "id": 8,  
}  
]
```

JSON

- * **Values** could be
 - * primitives
 - * object
 - * array
 - * array of objects...

```
{  
  "_id" : 1,  
  "name" : { "first" : "John", "last" : "Backus" },  
  "contribs" : [ "Fortran", "ALGOL", "Backus-Naur Form", "FP" ],  
  "awards" : [  
    {  
      "award" : "W.W. McDowell Award",  
      "year" : 1967,  
      "by" : "IEEE Computer Society"  
    }, {  
      "award" : "Draper Prize",  
      "year" : 1993,  
      "by" : "National Academy of Engineering"  
    }]  
}
```

Benefits of AJAX

- * Ajax can **reduce the traffic travels** between the client and the server.
 - * Usually, only data (in JSON or XML formats) will be sent, **HTML and CSS codes are not transmitted.**
- * The **server response time is faster** so increases performance and speed.
 - * **Data aren't processed in the server side**, like being included in html.

Implementing Ajax

- * Server side simply provides data, HTML code not needed.
- * Client-side can use **XMLHttpRequest**, **JQuery** or **Fetch API** to make Ajax request.

```
var response = await fetch('https://httpbin.org/post', {  
    method: 'POST',  
    body: "foo=bar&lorem=ipsum"  
});
```

Fetch API

- * **Fetch** is an API that provides **client functionality** for **transferring data** between a client and a server.
- * Our system returns data in **JSON format**, thus **json()** parses JSON string and **convert it to a JavaScript object** (**json**).

```
console.log(response);
```

```
var json = await response.json();
alert(json.data);
```

OnSubmit

```
<form action="/form" method="POST"
      onsubmit="postWithAjax(this);return false">
  <div ...>
  ...
</form>
```

- * The **onsubmit** will be executed when the form is being submitted.
- * The original form action **will also be executed** in general.
- * However, when **onsubmit="return false"**, the **default submit action will be cancelled**.

FormData

- * The FormData interface provides a way to easily **construct a set of key/value pairs representing form fields and their values**, which can then be easily sent with `fetch()`.

```
var response = await fetch(elem.action, {  
    method: elem.method,  
    body: new FormData(elem)  
});
```

Filtering

- * In JavaScript, we can perform **filtering** on an array with the **.filter()** function

```
var jVotes = bookings.filter( function (booking) {  
    return booking.team == "JLA";  
});
```

- * The syntax is similar to **bookings.forEach()**.

GIT AND GITHUB

Git and GitHub

- * **Git** is a **version control system**, a tool to manage the source **code history**.
- * **GitHub** is a **hosting service** for Git repositories.

Commits on Nov 27, 2015

 now push notification is good to go
hans-lizihan committed on Nov 27, 2015

Commits on Nov 26, 2015

 added the activity model to the models
hans-lizihan committed on Nov 26, 2015

 added the server to readme
hans-lizihan committed on Nov 26, 2015

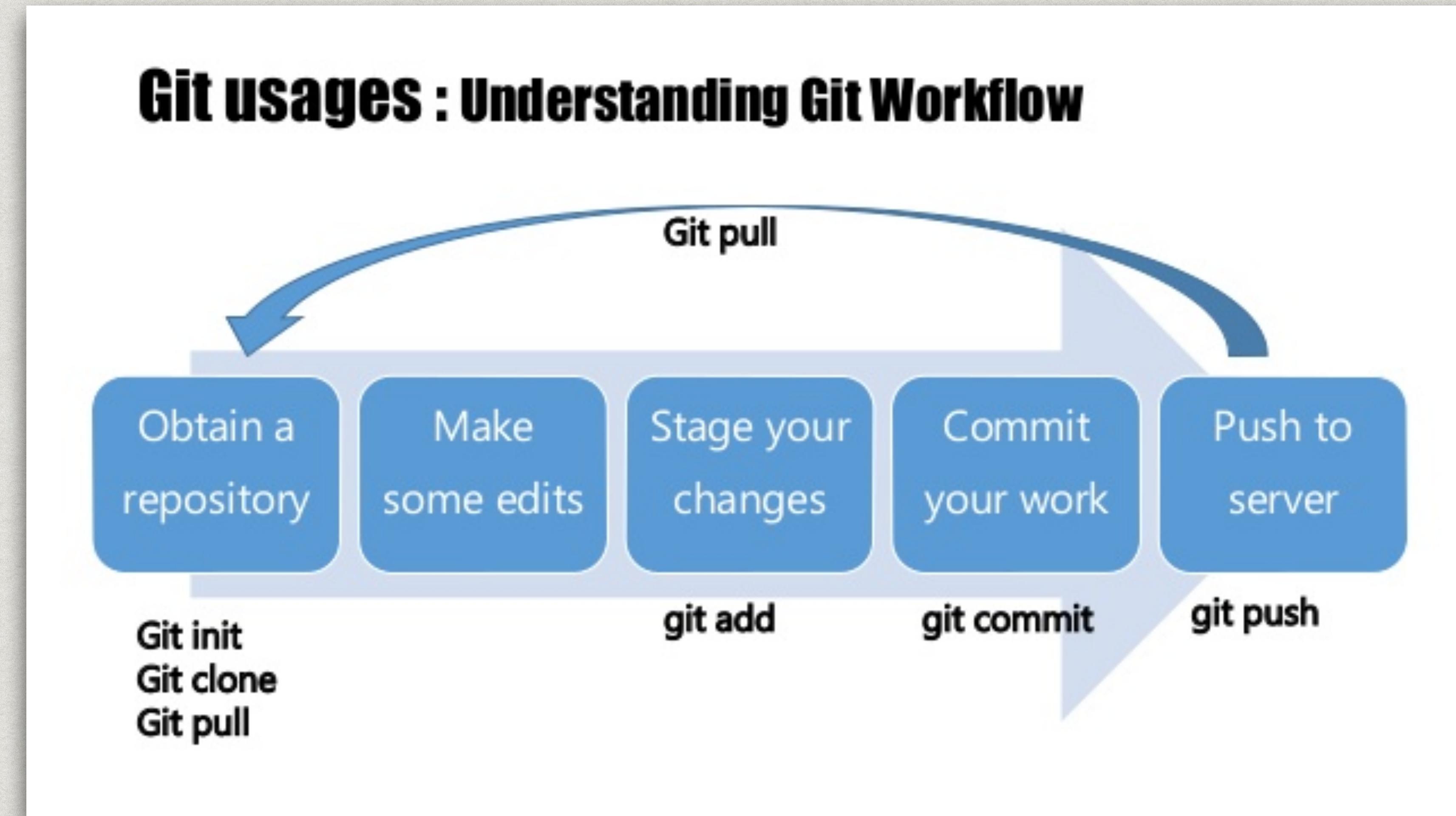
Commits on Nov 5, 2015

 added the .gitignore and a simple readme.md file

 hans-lizihan added the report to the repository   

 ccl-reg.xcodeproj	add modifying the project files
 ccl-reg	updated the date in activity detail view to be more readable
 ccl-regTests	Initial Commit
 ccl-regUITests	Initial Commit
 .gitignore	added the gitignore and a simple readme.md file
 readme.md	added the server to readme
 report.pdf	added the report to the repository   

Git Workflow



Git Commands

- * **git init:** Create an **empty Git repository** or reinitialize an existing one
- * **git add:** Add **a change** to the **staging area**.
- * **git commit:** Record **changes** to the repository, using together with a **commit message**.
- * **git push:** Update **remote repository** with local changes.

Commit Messages

- * A **well-crafted Git commit message** is the **best way to communicate context** about a change to fellow developers.
 - * Examples:
 - * **Refactor** subsystem X for readability
 - * **Update** getting started documentation
 - * **Remove** deprecated methods
 - * **Release** version 1.0.0
1. Capitalize the subject line
 2. Do not end the subject line with a period
 3. Use the imperative mood in the subject line

<https://chris.beams.io/posts/git-commit/>