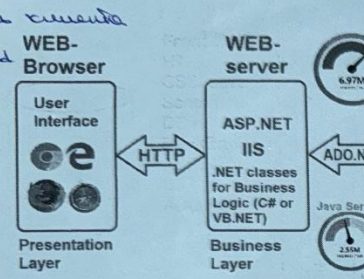
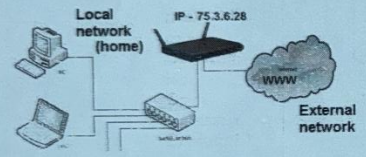


Front End
HTML/
CSS/ Java Script и
DOM
BackEnd
ASP.NET
IIS
ADO.NET



DHCP
(engl.
Dynamic
Host
Confi-
guration
Protocol)

tracert – traceroute (in Apple) www.geotraceroute.com

172 . 16 . 254 . 1

10101100.00010000.11111110.00000001

8 bits

32 bits (4 bytes)

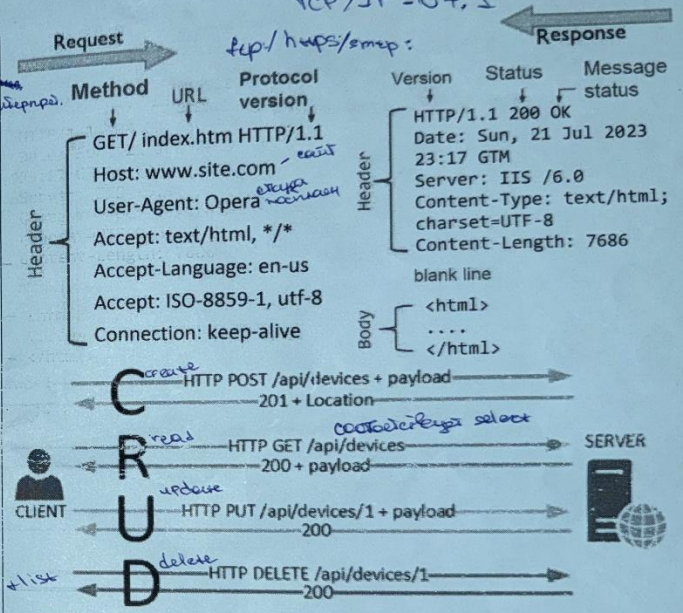
4 billion addresses
– 4.294.967.296

DNS – clearer address.

217.21.43.40 – sbmt.by, sbmt.bsu.by sb.bsu.by

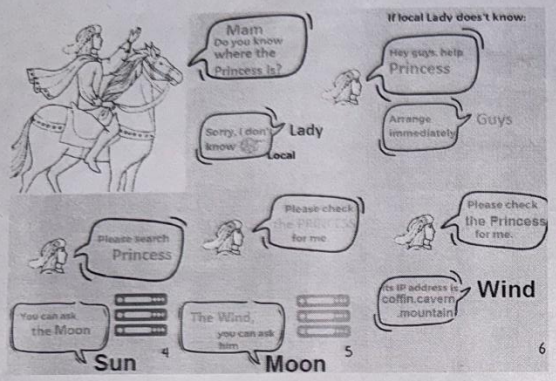
ping sb.bsu.by **tracert sb.bsu.by** **https://geotraceroute.com/**

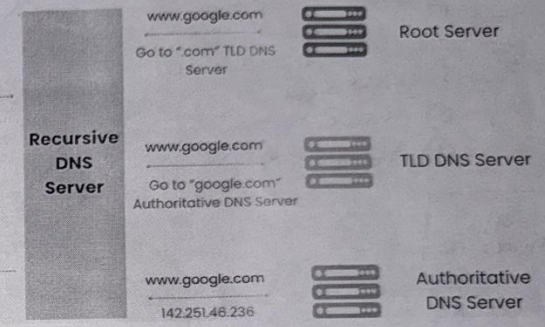
+375 (29) 254 07 92 - ANDREY O. YAROSHEVICH

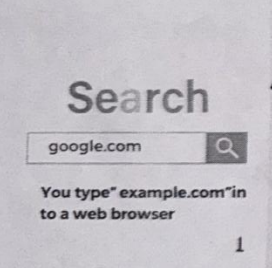


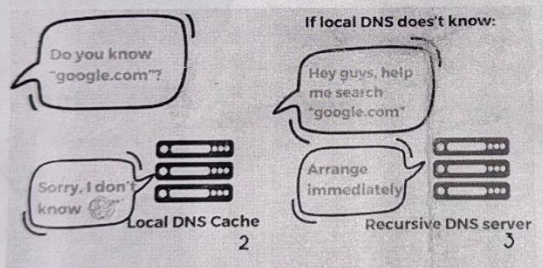
- GET — getting a resource
- POST — resource creation
- PUT — resource update
- DELETE — deleting a resource

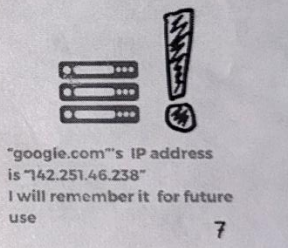
Methods		Request		Response	
		URL	Request body	Status	Response body
1	GET	Yes	No	Yes	Yes
2	PUT	Yes	Yes	Yes	No
3	POST	Yes	Yes	Yes	Yes
4	DELETE	Yes	No	Yes	No

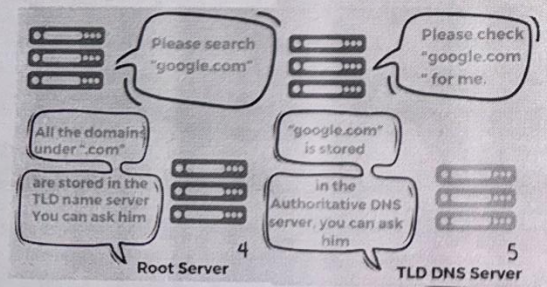

Mam
Do you know where the Princess is?
Sorry, I don't know
Lady
Local
If local Lady does't know:
Hey guys, help Princess
Arrange immediately
Guys
Please search Princess
Please check the PRINCESS for me
Please check the Princess for me.
Its IP address is coffin,cavern ,mountain
Wind
You can ask the Moon
Sun
4
The Wind, you can ask him
Moon
5
6

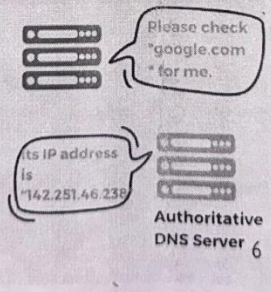

www.google.com
http://
142.251.46.236
Recursive DNS Server
www.google.com
Go to ".com" TLD DNS Server
Root Server
www.google.com
Go to "google.com" Authoritative DNS Server
TLD DNS Server
www.google.com
142.251.46.236
Authoritative DNS Server

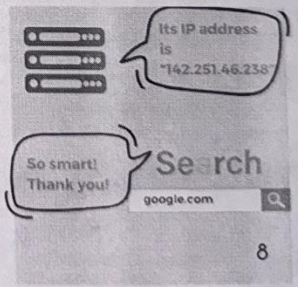

Search
google.com
You type" example.com"in to a web browser
1


Do you know "google.com"?
Sorry, I don't know
Local DNS Cache
2
If local DNS does't know:
Hey guys, help me search "google.com"
Arrange immediately
Recursive DNS server
3


"google.com"'s IP address is "142.251.46.238"
I will remember it for future use
7


Please search "google.com"
All the domain under ".com"
are stored in the TLD name server You can ask him
Root Server
4
Please check "google.com " for me.
"google.com" is stored
in the Authoritative DNS server, you can ask him
TLD DNS Server
5

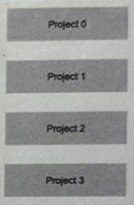

Please check "google.com " for me.
Its IP address is "142.251.46.238"
Authoritative DNS Server
6


Its IP address is "142.251.46.238"
So smart! Thank you!
Search
google.com
8

```
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta name="robots" content="noindex">
```


```
<style>
        #container {
          display: flex;
          flex-wrap: wrap;
          align: center;
        }
        #container > div {
          background-color: gray;
          font-size: 20px;
          margin: 20px;
          padding: 20px;
          width: 200px;
          text-align: center;
        }
</style>
```

```
<body>
.....
    <div id="container">
      <div>Project 0</a></div>
      <div>Project 1</div>
      <div>Project 2</div>
      <div>Project 3</div>
    </div>

  </body>
<html>
```

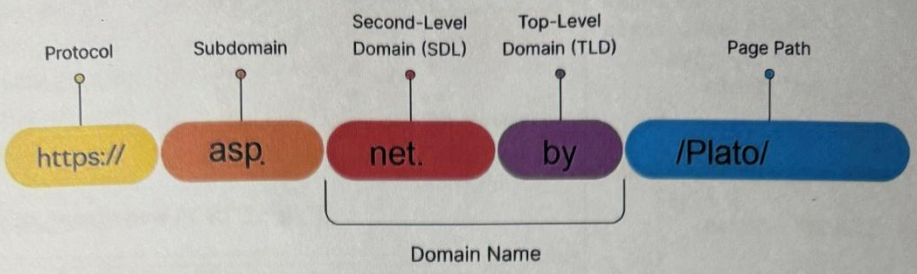


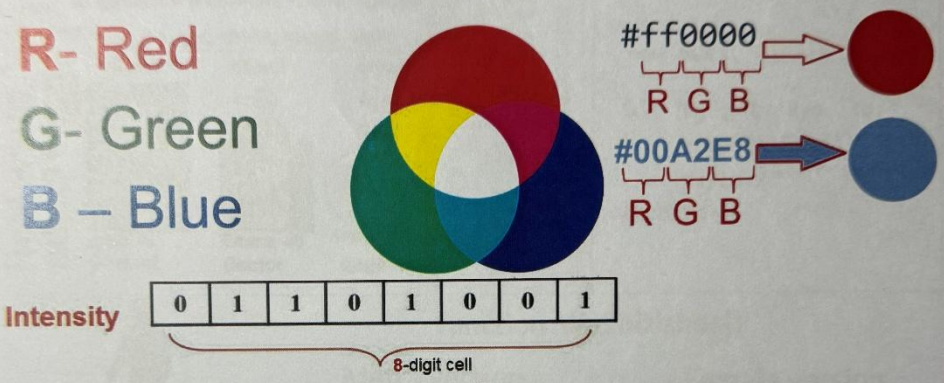
https://dot.net.by/esperanto/

```
<!-- Google Font -->
  <link href="https://fonts.googleapis.com/css2?family=Poppins:wght@300;500;700&display=swap"
rel="stylesheet">
  <style>
    body {
      font-family: 'Poppins', sans-serif;
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/css/bootstrap.min.css"
rel="stylesheet">
  <div class="buttons">
    <a href="project1.html" class="btn btn-primary btn-project">Project 1</a>
    @media (min-width: 768px) {
      .profile-image {
        width: 200px;
        height: 200px;
      }
      .name {
        font-size: 2.5rem;
      }
}
```

to enlarge photos on large screens from 150 to 200px

The same goes for fonts

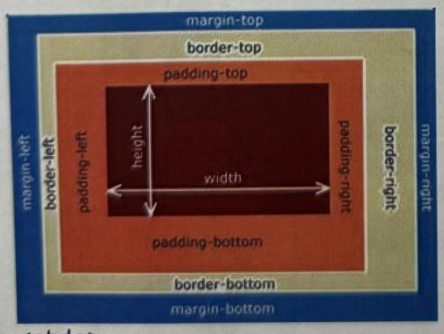




rgb(255,0,0), rgb(0,0,255), rgb(0,162,232), rgb(31,78,121)

rgb(100%,0%,0%), rgb(0%,0%,100%)

Box model




```
<style>
img {
  position: absolute;
  left: 2px;
  top: 10px;
  z-index: -1; // behind the text }
</style>
```

```
<style>
div
{
  color:white;
  background-color:brown;
  height:  250px;  width:  100px;
  padding:  20px  11px  10px  15px;
  border:  15px  solid  yellow;
  margin:  120px  10px  15px  20px;
}
</style>

<div><b>Box Model</b><br>
```

Основные возможности стандарта ES6, который расширил JS и сделал код более удобным, читаемым, безопасным

ES6:

asp.net.by/es6/1.htm, asp.net.by/es6/02.htm

```
{
 let
 const
}
```

asp.net.by/es6/03.htm **Arrow functions:**

```
x = (x, y) => y + ":" + x;
```

вызываем

```
x("sbmt.by", "SBMT");
```

asp.net.by/es6/04.htm function myExam(y = 4) – **параметр по умолчанию**

asp.net.by/es6/05.htm Array.**find**(myFunction)

asp.net.by/es6/06.htm Array.**findIndex**()

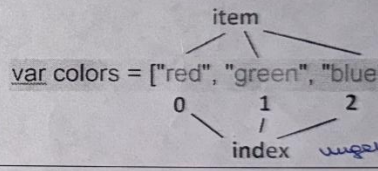
asp.net.by/es6/07.htm Классы

```
class ACat {

  constructor(n) {

    this.name = n;     //property
  }
}
```

не будет работать определённое название

```
mycat = new ACat("Барсик");
```

```
class ACat{
.....
 Name()
  return 'Меня зовут ' + this.name;
 }
}
mycat = new ACat("Барсик");
document.write(mycat.Name());
```

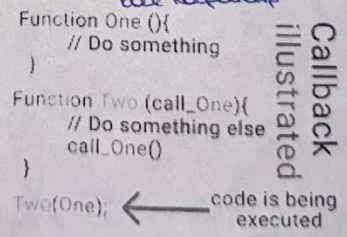
asp.net.by/es6/08.htm asp.net.by/es6/09.htm Array.**forEach**() var colors = ["red", "green", "blue"];	Меня зовут Барсик 

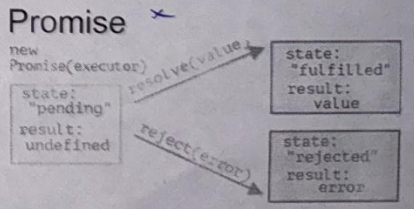
индексация с 0 идет в массиве

```
colors.forEach(myFunction);
function myFunction(item, index) {
   item … index
}
```

как параметр

```
Function One (){
      // Do something
 }
Function Two (call_One){
      // Do something else
      call_One()
 }
Two(One);
```





```
class ACat {
string name;
public ACat(n){
 this.name=n;
 }
}
ACat mycat= new ACat("Barsik");
```

```
class ACat {
 constructor(n) {
  this.name = n;  //property
 }
}
mycat = new ACat("Barsik");
```

```
Say() {
  return "meou";
}
s =
"My cat says <b>"
 +
myCat.Say()+
"</b> !"
```

```
<script>
class APet {
    Say() {
        alert("No");
    }
}
class ACat extends APet {
    Say() {
        return "Miou";
    }
}
var myPet =
 new ACat("Barsik");

S = "My pet says  <b>"
     + myPet.Say()+
     "</b> !"
</script>
```

class Women: To describe a Woman: name, age, job; can do: eat, drink, sleep, walk, ...

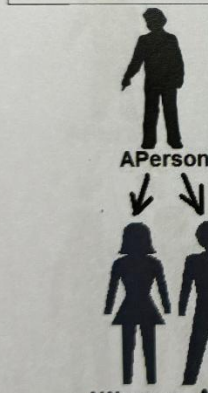
Real world objects

object — Jane 19 Student

object — Emma 45 Doctor

object — Ann 30 Engineer

Polymorphism in Biology: Queen, Drone, Worker



function **WashDishes()**

Men's version
wipe dry

Female version
wet with water


```
class AMan {
 WashDishes() {
  return 'wipe dry';
 }
}
```

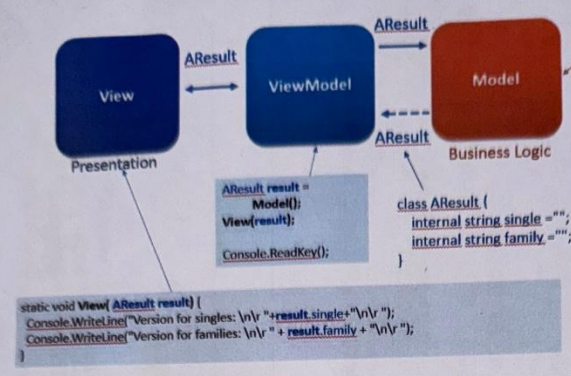
```
class AWomen {
 WashDishes() {
  return 'wet';
 }
}
```

```
var family = [new AWomen(), new AMan()];
for(i=0;i<2;i++){ alert(" "+ family[i].WashDishes());}  //dry wet
```

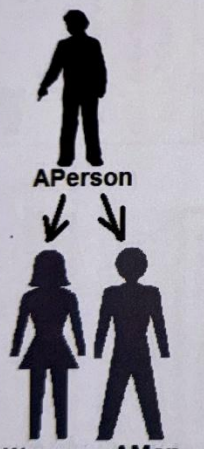
```
women = new AWomen();  man = new AMan();  var family = [women,man];
```

ES6:
asp.net.by/es6/1.htm, asp.net.by/es6/02.htm

class ACat{
.....




```
static AResult Model() {
    AResult result = new AResult();
    var single = new APerson();
    result.single += single.GetType().Name + ": " +
                     single.WashDishes() + "";
    APerson woman = new AWomen();
    APerson man = new AMan();
    APerson[] family = new APerson[2];
    family[0] = woman;
    family[1] = man;
    for (int i = 0; i < 2; i++)
    {
      result.family += family[i].GetType().Name + ": " +
          family[i].WashDishes() + "\n\r ";
    }
    return result;
}
```



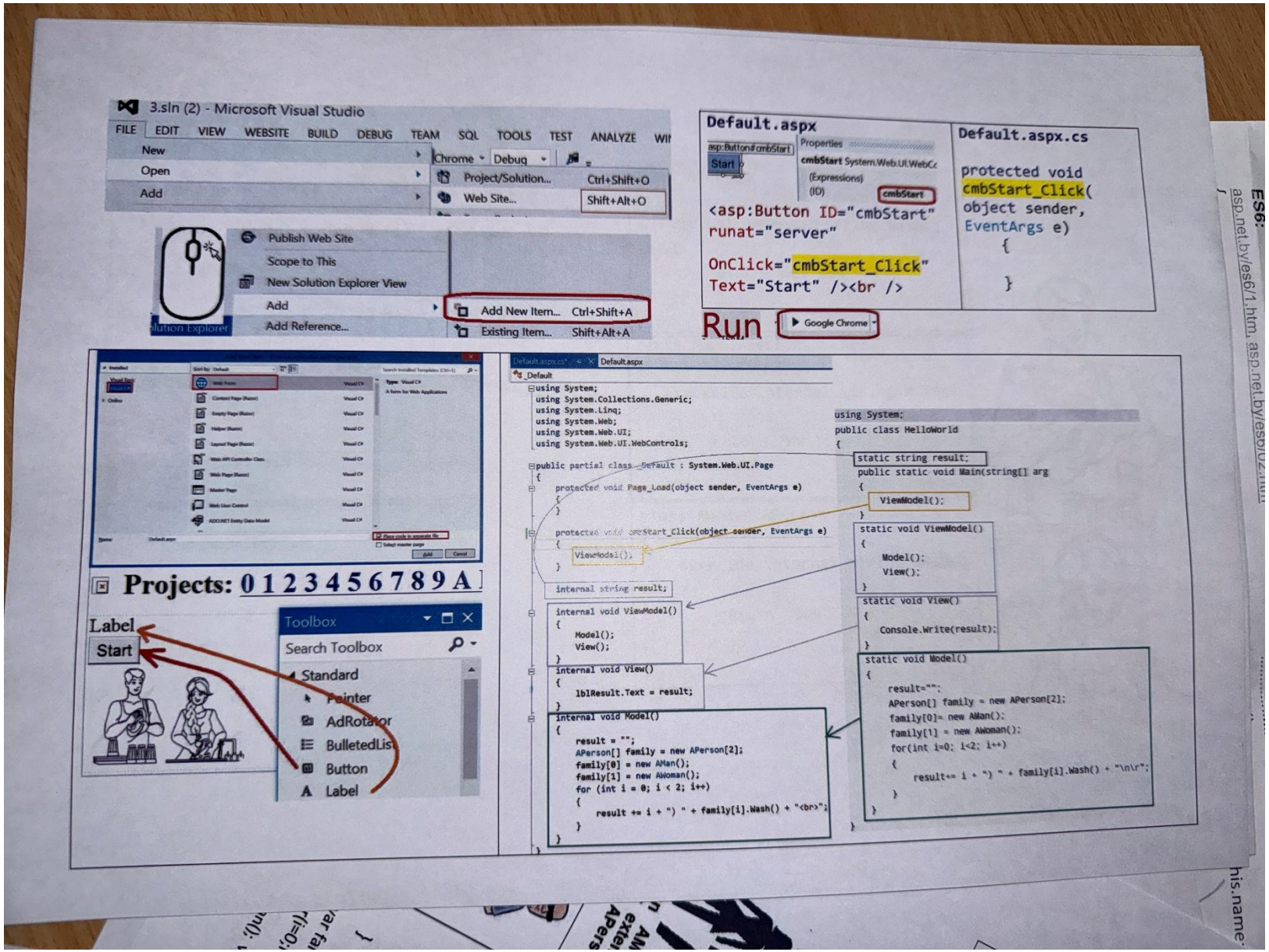
Men's version
wipe dry

Female version
wet with water

```
class APerson {
    virtual public string WashDishes() {
        return "dry and wet";
    }
```

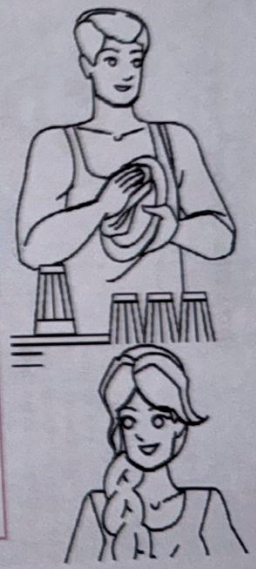

```
class AMan: APerson {
override public
    string WashDishes()
{
    return "dry";
  }
}
```

```
class AWoman: APerson {
override  public
      string WashDishes()
{
    return "wet";
  }
}
```


3.sln (2) - Microsoft Visual Studio
FILE EDIT VIEW WEBSITE BUILD DEBUG TEAM SQL TOOLS TEST ANALYZE
New
Open
Add
Chrome Debug
Project/Solution... Ctrl+Shift+O
Web Site... Shift+Alt+O
Publish Web Site
Scope to This
New Solution Explorer View
Add
Add Reference...
Add New Item... Ctrl+Shift+A
Existing Item... Shift+Alt+A
Default.aspx
asp:Button#cmbStart
Start
Properties
cmbStart System.Web.UI.WebC
(Expressions)
(ID) cmbStart
<asp:Button ID="cmbStart"
runat="server"
OnClick="cmbStart_Click"
Text="Start" />
Default.aspx.cs
protected void
cmbStart_Click(
object sender,
EventArgs e)
{
}
Run
Google Chrome
Projects: 0 1 2 3 4 5 6 7 8 9 A
Label
Start
Toolbox
Search Toolbox
Standard
Pointer
AdRotator
BulletedList
Button
Label
Default.aspx.cs
Default.aspx
_Default
using System;
using System.Collections.Generic;
using System.Linq;
using System.Web;
using System.Web.UI;
using System.Web.UI.WebControls;
public partial class _Default : System.Web.UI.Page
{
protected void Page_Load(object sender, EventArgs e)
{
}
protected void cmbStart_Click(object sender, EventArgs e)
{
ViewModel();
}
internal string result;
internal void ViewModel()
{
Model();
View();
}
internal void View()
{
lblResult.Text = result;
}
internal void Model()
{
result = "";
APerson[] family = new APerson[2];
family[0] = new AMan();
family[1] = new AWoman();
for (int i = 0; i < 2; i++)
{
result += i + ") " + family[i].Wash() + "
";
}
}
using System;
public class HelloWorld
{
static string result;
public static void Main(string[] arg
{
ViewModel();
}
static void ViewModel()
{
Model();
View();
}
static void View()
{
Console.Write(result);
}
static void Model()
{
result="";
APerson[] family = new APerson[2];
family[0]= new AMan();
family[1] = new AWoman();
for(int i=0; i<2; i++)
{
result+= i + ") " + family[i].Wash() + "\n\r";
}
}
ES6:
asp.net.by/es6/1.htm asp.net.by/es6/2.htm

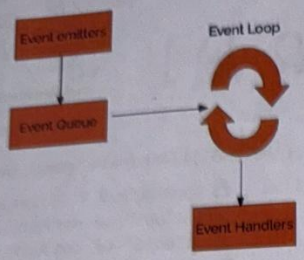
```
class APerson
{
    virtual internal string Wash()
    {
        return "Wet and Dry";
    }
}
class AMan:APerson
{
    override internal string Wash()
    {
        return "Wet";
    }
}
class AWoman:APerson
{
    override internal string Wash()
    {
        return "Dry";
    }
}
```

```
class APerson
{
    virtual internal string Wash()
    {
        return "Wet and Dry";
    }
}
class AMan:APerson
{
    override internal string Wash()
    {
        return "Wet";
    }
}
class AWoman:APerson
{
    override internal string Wash()
    {
        return "Dry";
    }
}
```



{
let

ES6: event-driven programming




```
<button onclick="Hello()">Click
Here</button>
<script>
let counter = 0;
function Hello(){
      counter++;
      const heading=
        document.querySelector('h1');
      heading.innerHTML = counter;
}
</script>
```

querySelector

First we need to access the button element in our JavaScript code.

variable name. We store the button in theis variable to reuse it later

selects the first HTML element which the query applies to

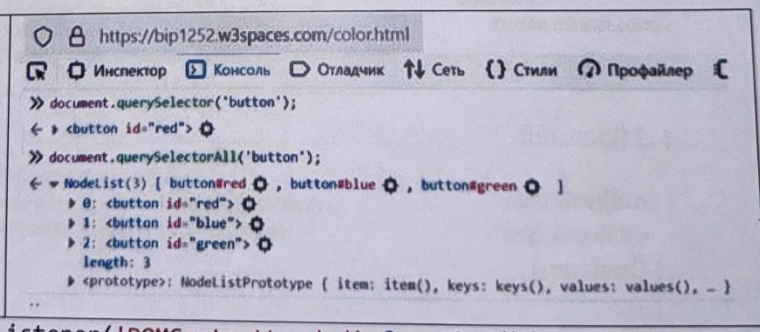
```
const button = document.querySelector("button");
```

variable defination, we could use let or var instead. But const id preferred

The context in which the querySelector will search for the given query. Here this is the HTML file

same syntax as CSS selectors. you can refer to elements, ids or classes here.

```
<button
id="red">Red
</button>
<button
id="blue">Blue
</button>
<button
id="green">Green
</button>
```

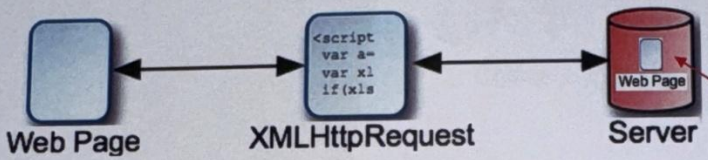



```
document.addEventListener('DOMContentLoaded',function(){
document.querySelector('button').onclick = Hello; }
);
document.querySelector('#red').onclick = function() {
   document.querySelector('#hello').style.color = 'red'; };
```

```
{"managers":[
 { "firstName":"Bill",
"lastName":"Gates" },
 { "firstName":"Mike",
"lastName":"Dell" },
]}
```

<=JSON vs XML=>

```
< managers >
<manager>
  <firstName>Bill</firstName>
   <lastName>Gates</lastName>
</manager>
<manager>
  <firstName>Mike</firstName>
   <lastName>Dell</lastName>
</manager>
</managers>
```



For security reasons, modern browsers do not allow access across domains.

All must be located on the same server.

https://asp.net.by/ajax/ajax_info.txt

Browser

An event occurs...

- Create an XMLHttpRequest object
- Send HttpRequest

Internet

Server

- Process HTTPRequest
- Create a response and send data back to the browser

onreadystatechange = function() { ... };
readyState = DONE
status = 200
statusText = "OK"
open() send()
responseText = { ... }

The response value from the server is assigned to the **responseText** property

```
<!DOCTYPE html>
<html>
<body>
<script>
function loadDoc() {
  var xhttp = new XMLHttpRequest();
  xhttp.onreadystatechange =
   function() {
    if (this.readyState == 4 && this.status == 200) {
document.getElementById("demo").innerHTML =
                                this.responseText;
    }
  };
  xhttp.open("GET", "ajax_info.txt", true);
  xhttp.send();
}
</script>

<div id="demo">
  <h2>Let AJAX change this text.</h2>
  <button type="button" onclick="loadDoc()">GO
                                    </button>
</div>
```

Browser

- Process the returned data using JavaScript
- Update page content

const

Сорока-Белобока кашу варила,
Деток кормила:
- Этому дала, - Этому дала,

querySelectorAll() ⇨ [,]
NodeList

[,].forEach( );

```
>> document.querySelectorAll('button');
← ▼ NodeList(3) [ button#red , button#blue , button#green ]
    ▶ 0: <button id="red">
    ▶ 1: <button id="blue">
    ▶ 2: <button id="green">
      length: 3
    ▶ <prototype>: NodeListPrototype { item: item(), keys: keys(), values: values(), … }
```

```
document.querySelectorAll('button').forEach(function(button) {
    button.onclick = function() {
      document.querySelector('#hello').style.color =
          button.dataset.color;
}); });
```

Red Blue Green

When the page is done loading

```
<script>
    document.addEventListener('DOMContentLoaded', function() {
        document.querySelectorAll('.color-change').forEach(
            function(button) {
  button.onclick = function() {
document.querySelector('#hello').style.color = button.dataset.color;
            };
        });
    });
</script>
```

I'm going to document.querySelectorAll, looking for all of the buttons

looked for things of the particular class

HTML

```
<button class="color-change" data-color="red">Red</button>
<button class="color-change" data-color="blue">Blue</button>
<button class="color-change" data-color="green">Green</button>
```

```
<button class="color-change"
data-color="red">Red</button>
```

function that takes as input, the button

It's first going to pass in as input the first button (Red), then the second button (Blue), then the third button (Green)

```
function(button) {
    button.onclick = function() {

document.querySelector('#hello').
    style.color =
        button.dataset.color;
    };
```

```
<head>
  <script>
  document.addEventListener('DOMContentLoaded', () => {
      document.querySelector('#color-change').onchange = function() {
          document.querySelector('#hello').style.color = this.value;
      };
  });
  </script>
</head>
<body>
  <h1 id="hello">Hello!</h1>
  <select id="color-change">
    <option value="red">Red</option>
    <option value="blue">Blue</option>
    <option value="green">Green</option>
  </select>
</body>
```


```
function() {...}

function(but) {
but.onclick =
  function() {...}
      }

() => {...}

but => {
  but.onclick =
      () => {...}
  }
```