

# CSE 4539 (CSE) / CSE 4581 (BScTE (2yr) 1st Sem) : Web Programming



## Introduction to Web Programming

**Md. Nazmul Haque**  
Assistant Professor, IUT

Department of Computer Science and Engineering  
Islamic University of Technology

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# Contents

- Fundamental knowledge of Web Programming
- HTML

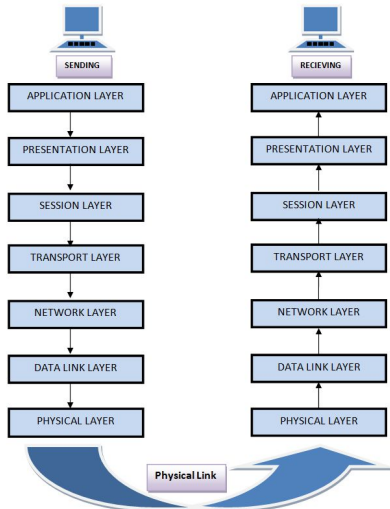
# Fundamental Knowledge of Web Programming



- Internet model
- Layers of the internet
- Web browser
- Domain Name System (DNS)
- Uniform Resource Locator (URL)



# Internet model (OSI Layer)



Source: <https://media.router-switch.com/media/wysiwyg/Help-Center-FAQ/Router/osi-model-layers-explanation.png>



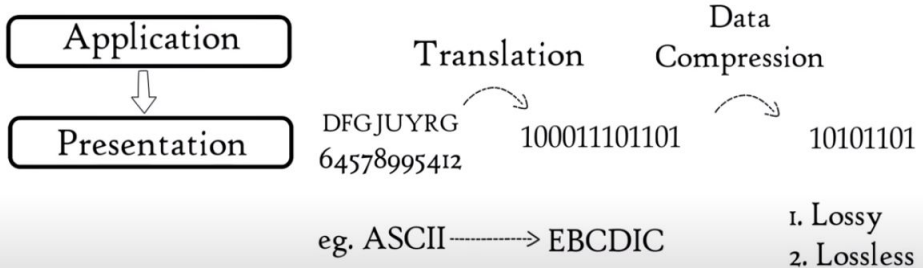
# Physical Layer



Source: [https://www.youtube.com/watch?v=vv4y\\_u0nc0](https://www.youtube.com/watch?v=vv4y_u0nc0)



# Presentation Layer



Source: [https://www.youtube.com/watch?v=vv4y\\_uOncC0](https://www.youtube.com/watch?v=vv4y_uOncC0)



# Session Layer

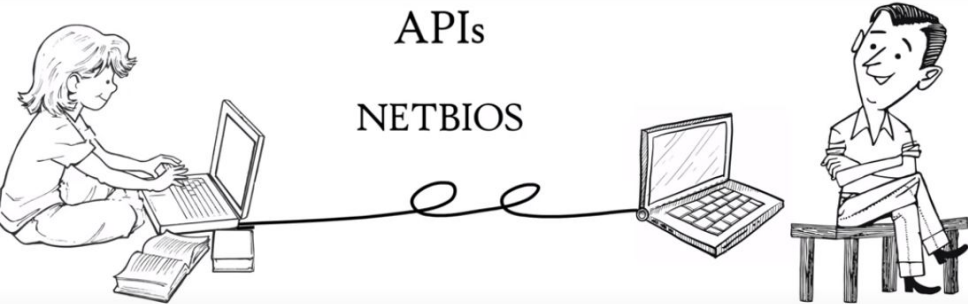


Manages connection between client and server

Source: [https://www.youtube.com/watch?v=vv4y\\_uOneC0](https://www.youtube.com/watch?v=vv4y_uOneC0)



# Session Layer



- a. Session management
- b. Authentication
- c. Authorization

Source: [https://www.youtube.com/watch?v=vv4y\\_uOncC0](https://www.youtube.com/watch?v=vv4y_uOncC0)





# Transport Layer



Segmentation  
Flow Control  
Error Control



Source: [https://www.youtube.com/watch?v=vv4y\\_uOneC0](https://www.youtube.com/watch?v=vv4y_uOneC0)



# Transport Layer

## Services:

- Connection-oriented Transmission
- Connectionless Transmission

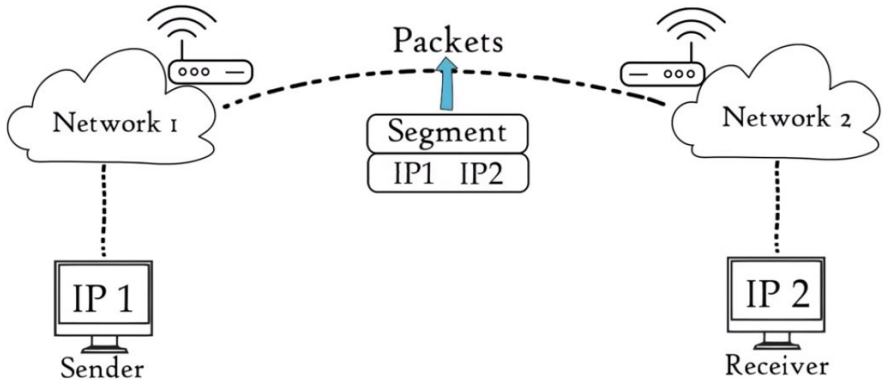
## Protocols:

- > Transmission Control Protocol (TCP)
- > User Datagram Protocol (UDP)

Source: [https://www.youtube.com/watch?v=vv4y\\_uOneC0](https://www.youtube.com/watch?v=vv4y_uOneC0)



# Network Layer

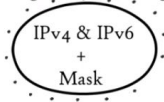


Source: [https://www.youtube.com/watch?v=vv4y\\_uOncC0](https://www.youtube.com/watch?v=vv4y_uOncC0)



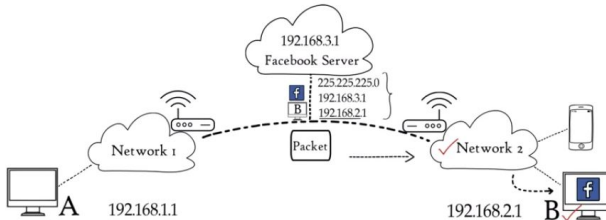
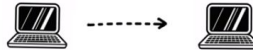
# Network Layer

Logical Addressing



Path determination

Routing

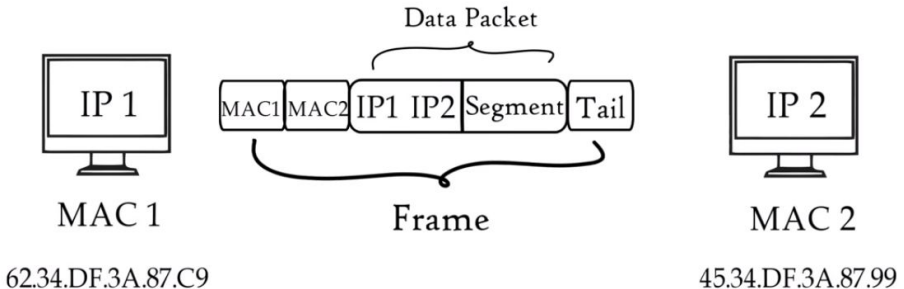


Source: [https://www.youtube.com/watch?v=vv4y\\_u0nC0](https://www.youtube.com/watch?v=vv4y_u0nC0)



# Data Link Layer

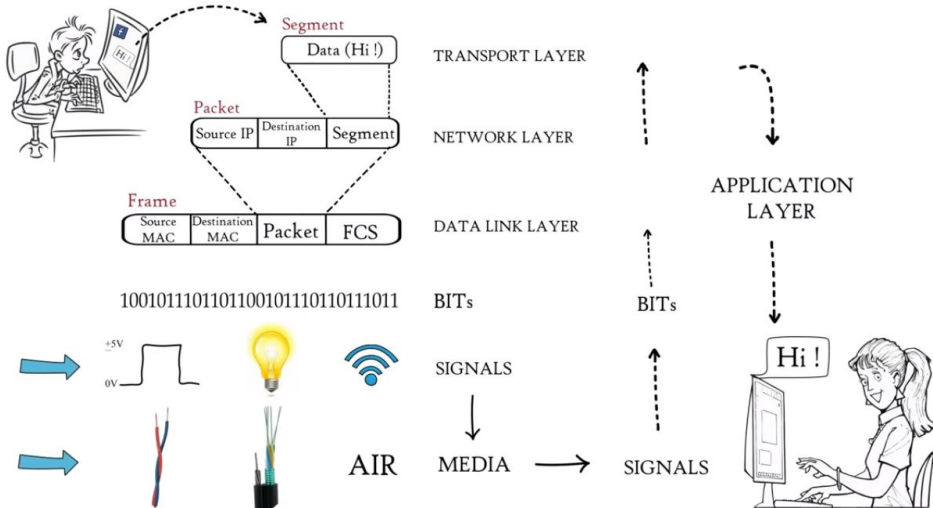
- Logical addressing : Network layer
- Physical addressing : Data Link layer



Source: [https://www.youtube.com/watch?v=vv4y\\_uOncC0](https://www.youtube.com/watch?v=vv4y_uOncC0)



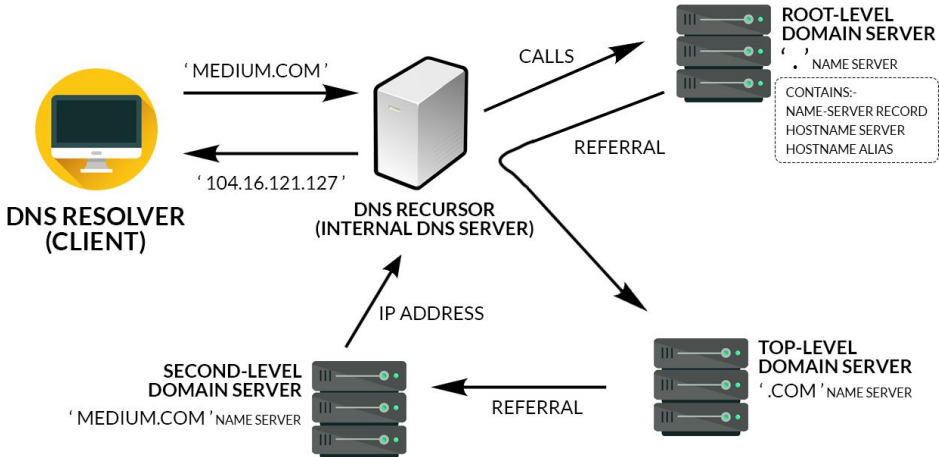
# Physical Layer



Source: [https://www.youtube.com/watch?v=vv4y\\_u0nc0](https://www.youtube.com/watch?v=vv4y_u0nc0)



# Domain Name System (DNS)

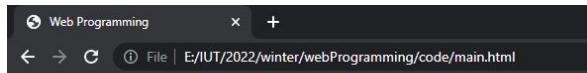




# Hyper Text Markup Language (HTML)

- A **markup** language that specifies the **structure** and **content** of documents that are displayed in **web browsers**

```
<> main.html ×  
<> main.html > ...  
1  <!DOCTYPE html>  
2  <html>  
3      <head>  
4          <title>Web Programming</title>  
5      </head>  
6      <body>  
7          <p>Welcome to the Web Programming course!</p>  
8      </body>  
9  </html>
```



Welcome to the Web Programming course!

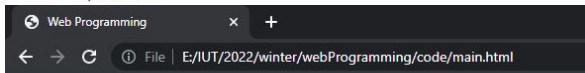




# Hyper Text Markup Language (HTML)

- Can use one or multi-line comments to describe an element.

```
<> main.html X
<> main.html > ...
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Web Programming</title>
5      </head>
6      <body>
7          <!-- This is a short description
8              of the project -->
9          <p>Welcome to the Web Programming course!</p>
10     </body>
11 </html>
```



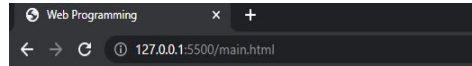
Welcome to the Web Programming course!



# Headings

- Provides six heading elements (h1 through h6) for specifying the relative importance of information

```
<> main.html X
<> main.html > ...
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Web Programming</title>
5      </head>
6      <body>
7          <h1>Level 1: Heading 1: Most significant</h1>
8          <h2>Level 2: Heading 2</h2>
9          <h3>Level 3: Heading 3</h3>
10         <h4>Level 4: Heading 4</h4>
11         <h5>Level 5: Heading 5</h5>
12         <h6>Level 6: Heading 6: Less significant</h6>
13     </body>
14 </html>
```



**Level 1: Heading 1: Most significant**

**Level 2: Heading 2**

**Level 3: Heading 3**

**Level 4: Heading 4**

**Level 5: Heading 5**

**Level 6: Heading 6: Less significant**



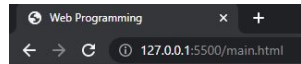
# Links

- References to other resources.

<> main.html X

<> main.html > ...

```
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Web Programming</title>
5      </head>
6      <body>
7          <h1>Links</h1>
8          <p><a href="https://www.iutoic-dhaka.edu/">IUT Website</a></p>
9          <p><a href="https://cse.iutoic-dhaka.edu/">CSE IUT Website</a></p>
10     </body>
11 </html>
```



## Links

[IUT Website](https://www.iutoic-dhaka.edu/)

[CSE IUT Website](https://cse.iutoic-dhaka.edu/)

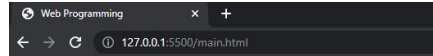


# Images

- Can insert images with customized height and width.

```

main.html X
main.html > ...
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Web Programming</title>
5      </head>
6      <body>
7          <h1>Images</h1>
8          <p>
9              
10             
11          </p>
12      </body>
13  </html>
  
```



## Images



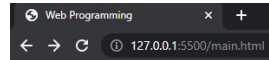


# Images as links

- Use images as links

```

<> main.html X
<> main.html > ...
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Web Programming</title>
5      </head>
6      <body>
7          <h1>Images</h1>
8          <p>
9              <a href="https://www.iutoic-dhaka.edu">
10                 
11             </a>
12          </p>
13      </body>
14  </html>
  
```



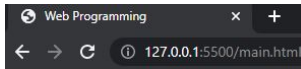
## Images





# List

- Unordered list: default bullet (disc)
- Ordered list: default 1,2,3..



## An Unordered HTML List

- HTML
- CSS
- JavaScript
- PHP
- SQL

## An Ordered HTML List

- A. HTML
- B. CSS
- C. JavaScript
- D. PHP
- E. SQL

```

<> main.html X
<> main.html > ...
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Web Programming</title>
5      </head>
6      <body>
7          <h2>An Unordered HTML List</h2>
8          <!-- disc, circle, square, none -->
9          <ul style="list-style-type:disc">
10             <li>HTML</li>
11             <li>CSS</li>
12             <li>JavaScript</li>
13             <li>PHP</li>
14             <li>SQL</li>
15          </ul>
16          <h2>An Ordered HTML List</h2>
17          <!-- type can be 1, A,a,i,I -->
18          <ol type="A">
19             <li>HTML</li>
20             <li>CSS</li>
21             <li>JavaScript</li>
22             <li>PHP</li>
23             <li>SQL</li>
24          </ol>
25      </body>
26  </html>
  
```



# Nested List

- Merge ordered and unordered lists in nested lists

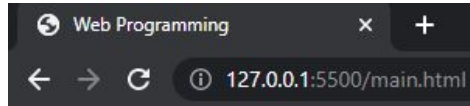
<> main.html ×

<> main.html > ...

```

1  <!DOCTYPE html>
2  <html>
3    <head>
4      <title>Web Programming</title>
5    </head>
6    <body>
7      <h2>A Nested HTML List</h2>
8      <ul style="list-style-type:disc">
9        <li>HTML
10         <ul style="list-style-type:square">
11           <li>paragraph</li>
12           <li>list</li>
13           <li>links</li>
14         </ul>
15       </li>
16       <li>JavaScript
17         <ol type="i">
18           <li>Basic JS</li>
19           <li>Advanced JS</li>
20           <li>JQuery</li>
21         </ol>
22       </li>
23     </ul>
24   </body>

```



## A Nested HTML List

- HTML
  - paragraph
  - list
  - links
- JavaScript
  - i. Basic JS
  - ii. Advanced JS
  - iii. JQuery



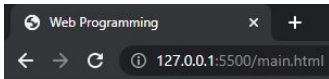
# Table

- Tables are frequently used to organize data into rows and columns.
- The border attribute with the value "1" specifies borders around the table.
- The caption element specifies a table's title (rendered above the table).
- A table has three distinct sections—head, body and foot.
- The head is defined with a **thead** element which contains header information.
- Each **tr** element defines an individual table row.
- The columns in the thead section are defined with **th** elements.





# Table



## Table Example

### Summary

Name	Price
Apple	\$1.25
Orange	\$2.50
<b>Total</b>	<b>\$3.75</b>

```

main.html x
main.html > ...
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Web Programming</title>
5      </head>
6      <body>
7          <h2>Table Example</h2>
8          <table border="1">
9              <caption><strong>Summary</strong></caption>
10             <thead>
11                 <tr>
12                     <th>Name</th>
13                     <th>Price</th>
14                 </tr>
15             </thead>
16             <tbody>
17                 <tr>
18                     <td>Apple</td>
19                     <td>$1.25</td>
20                 </tr>
21                 <tr>
22                     <td>Orange</td>
23                     <td>$2.50</td>
24                 </tr>
25             </tbody>
26             <tfoot>
27                 <tr>
28                     <th>Total</th>
29                     <th>$3.75</th>
30                 </tr>
31             </tfoot>
32         </table>
33     </body>
34 </html>

```



# Table (row span)

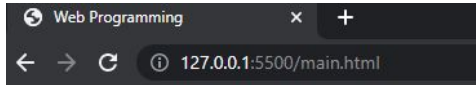
<> main.html X

<> main.html > ...

```

1  <!DOCTYPE html>
2  <html>
3    <head>
4      <title>Web Programming</title>
5    </head>
6    <body>
7      <h3>Table rowspan Example</h3>
8      <table border="1">
9        <tr>
10         <th>Name</th>
11         <td>Contact</td>
12       </tr>
13       <tr>
14         <th rowspan="2">Andrew</th>
15         <td>andrew@gmail.com</td>
16       </tr>
17       <tr>
18         <td>258-9641</td>
19       </tr>
20       <tr>
21         <th rowspan="2">Bob</th>
22         <td>bob@gmail.com</td>
23       </tr>
24       <tr>
25         <td>258-9642</td>
26       </tr>
27     </table>
28   </body>
29 </html>

```



## Table rowspan Example

Name	Contact
Andrew	andrew@gmail.com
	258-9641
Bob	bob@gmail.com
	258-9642



# Table (column span)

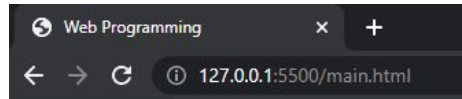
<> main.html ×

<> main.html > ...

```

1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Web Programming</title>
5      </head>
6      <body>
7          <h3>Table colspan Example</h3>
8          <table border="1">
9              <tr>
10                 <th colspan="2">Full Name</th>
11                 <th>Age</th>
12             </tr>
13             <tr>
14                 <td>Andrew</td>
15                 <td>Junior</td>
16                 <td>50</td>
17             </tr>
18             <tr>
19                 <td>Bob</td>
20                 <td>Delan</td>
21                 <td>45</td>
22             </tr>
23         </table>
24     </body>
25 </html>

```



## Table colspan Example

Full Name		Age
Andrew	Junior	50
Bob	Delan	45



**ANY QUESTION ?  
THANK YOU !**

# References



[1] W3school.com