Web Client and UDP Socket

CS F303

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Problem Statement

- Develop a socket client for accessing resources from web server.

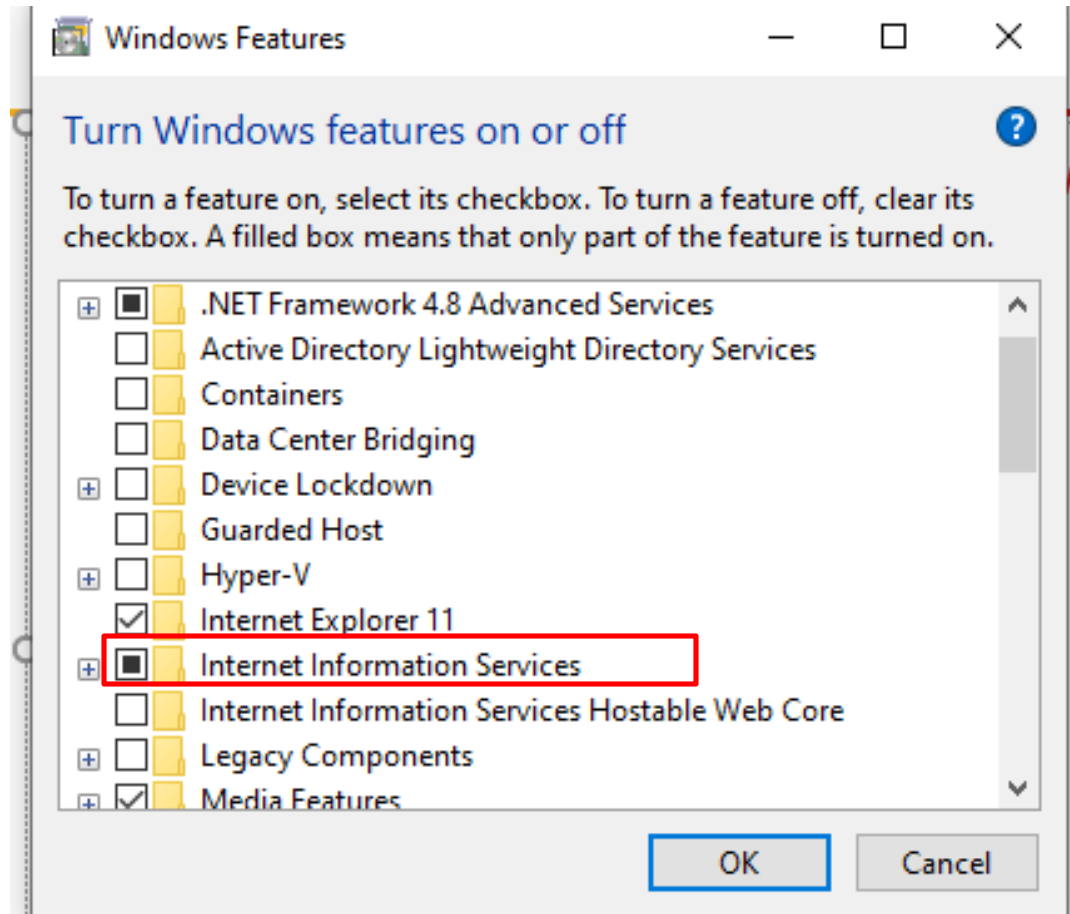- Develop a UDP server using java and verify using the UDP client

Setup a Web Server (IIS)

- Step 1: Turn on IIS service from windows features on or off

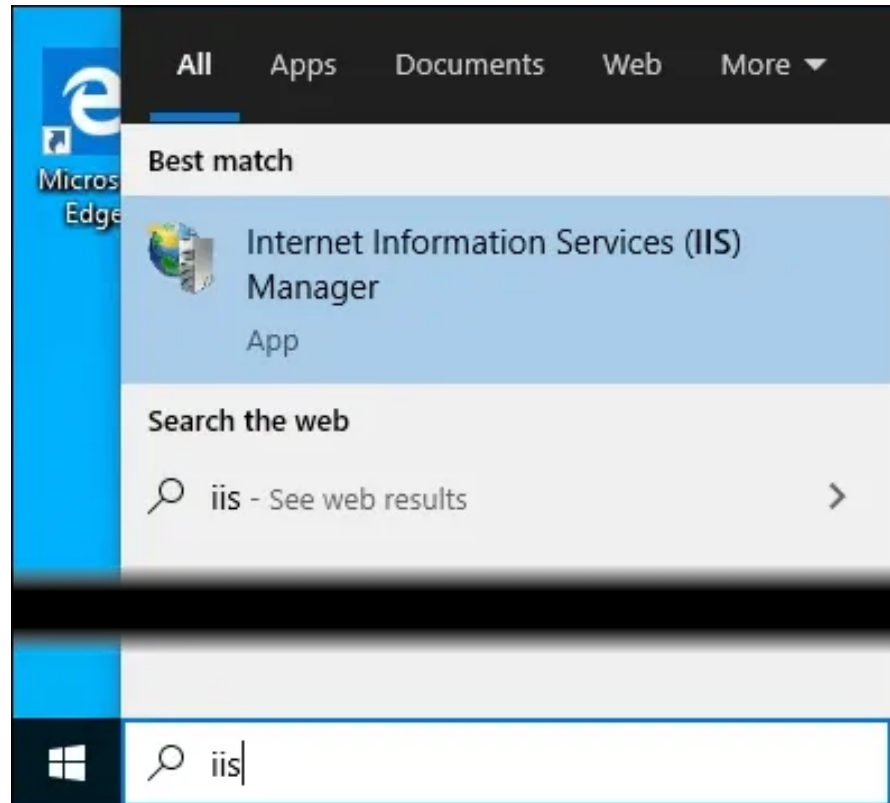# Setup a Web Server (IIS)

Step 2: To ensure that IIS is installed and working, type **IIS** in the **Search** bar near the **Start** button. You'll see the **Internet Information Services Manager** as a result. Click on that to open it.
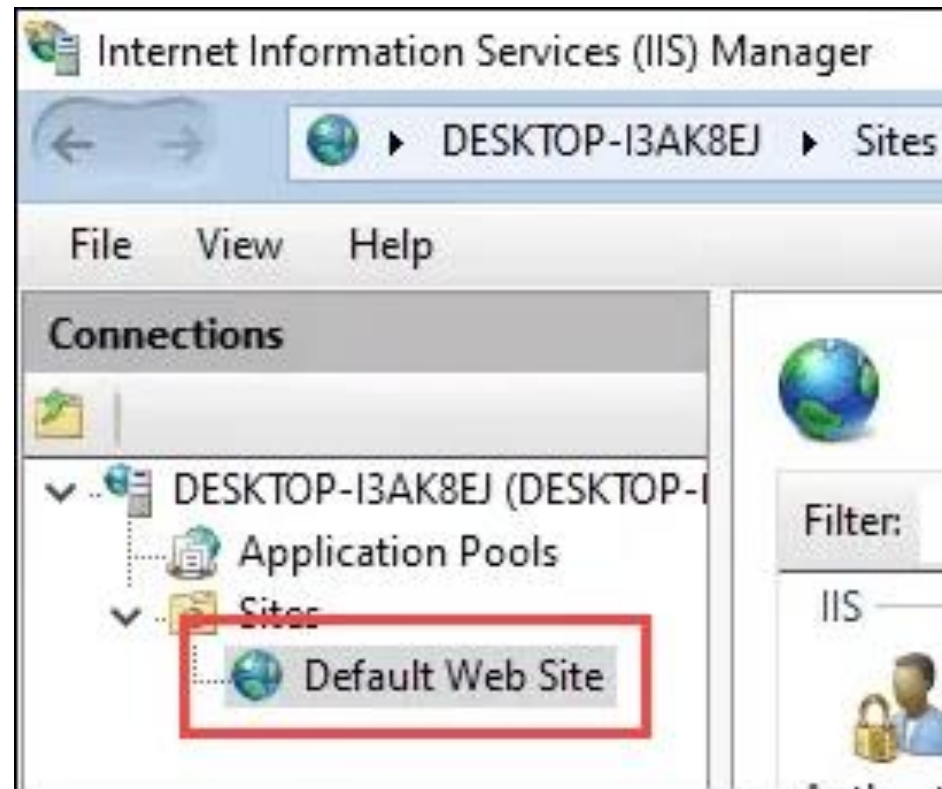
Setup a Web Server (IIS)

Step 3: When IIS Manager opens, look in the left pane of the window under **Connections**. Expand the tree menu until you see **Default Web Site.** That's a placeholder site that is installed with IIS. Click on it to select it.
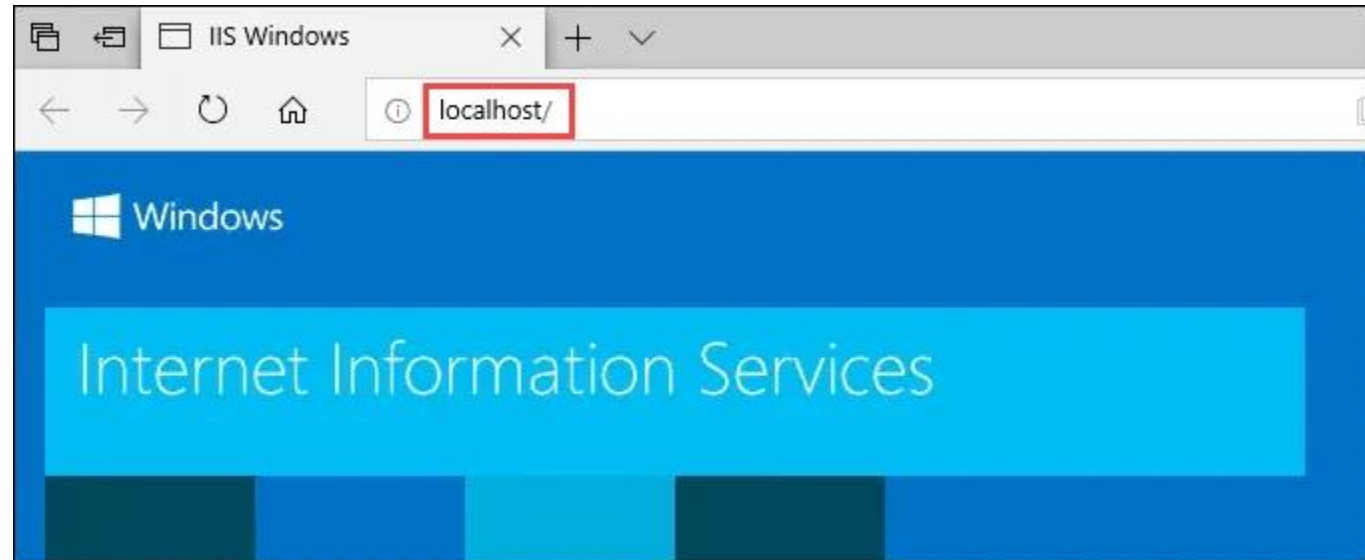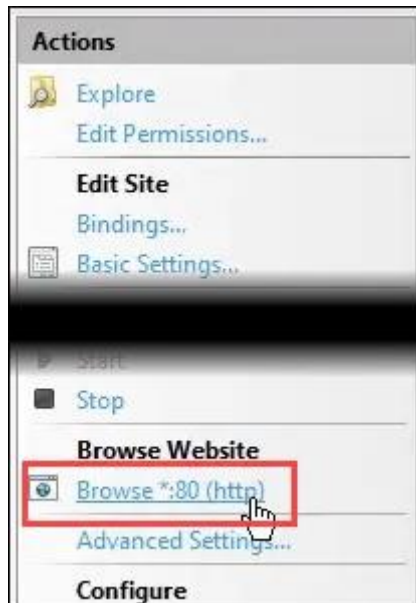
Setup a Web Server (IIS)

Step 4: On the right side of the IIS Manager look under the **Browse Website** section. Click on **Browse *:80 (http).** That will open the default web site in your default web browser.
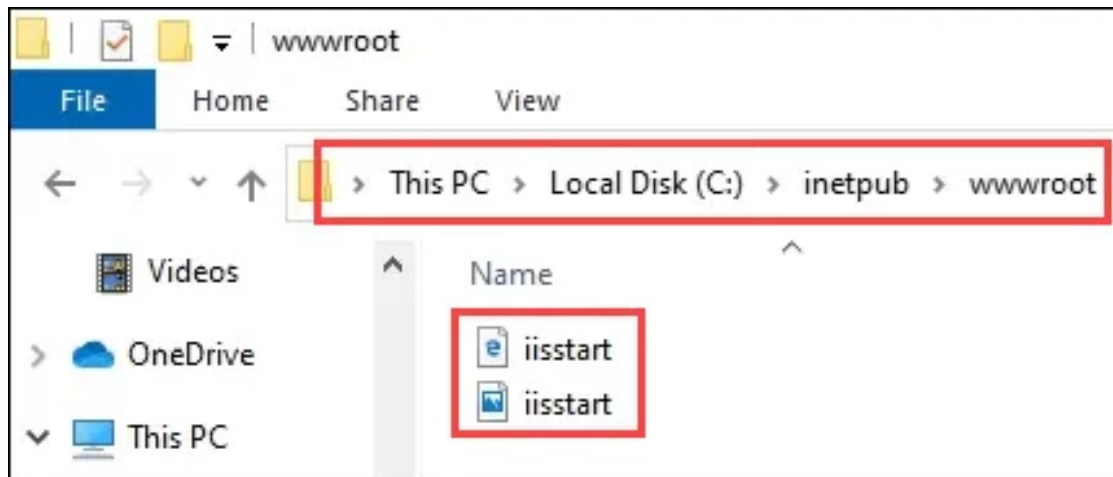
Step 1: After IIS is installed, open **File Explorer**. Navigate to **C:\intepub\wwwroot**. That's where the files that make up the website need to be stored. You'll see the default IIS web page file, **iisstart.html**, and the image shown on the page, **iisstart.png**. This is where you'll save your first web page.

Step 2: Open a notepad as an administrator and write following html code.

```
index - Notepad
File   Edit   Format   View   Help
<!DOCTYPE html>
<html>
<body>

<h1>My First page from web server IIS</h1>

<p>My first paragraph from web server IIS.</p>

</body>
</html>
```

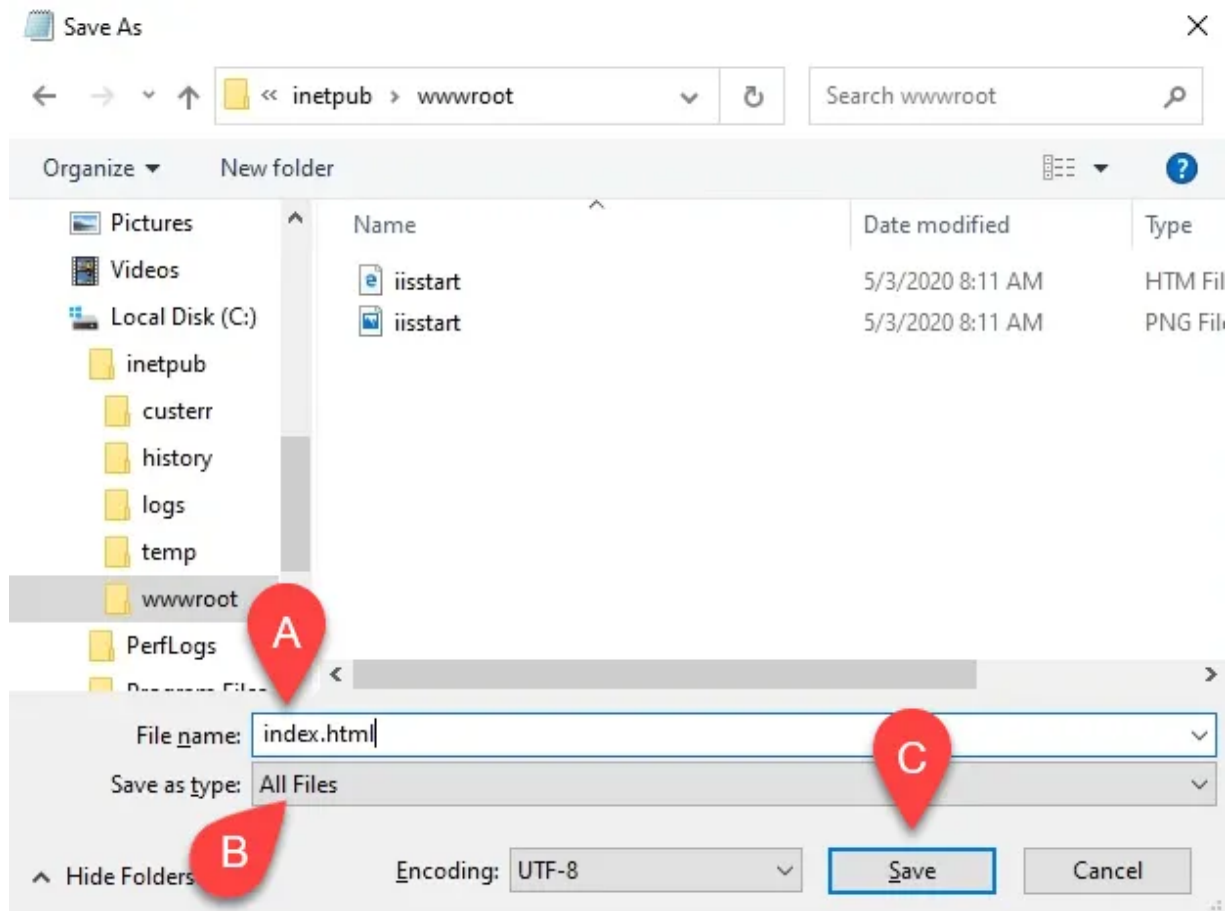# Create web page and launch on IIS

Step 3: Save the file to the **wwwroot** location. Name it **index.html** and change the **Save as type:** to **All Files**. Then click the **Save** button.

Create web page and launch on IIS

- Step 5: Go back to the web browser that has the default IIS web page. Click on the refresh button. You will now see your first web page.

Socket Client

Step 1: Create WClinet.java and write following code.

```java
import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.io.PrintStream;
import java.net.Socket;

public class WClient
{
    public static void main( String[] args )
    {
        if( args.length < 2 )
        {
            System.out.println( "Usage: WClient <server> <path>" );
            System.exit( 0 );
        }
        String server = args[ 0 ];
        String path = args[ 1 ];

        System.out.println( "Loading contents of URL: " + server );
```

Socket Client

```java
try
{
    // Connect to the server
    Socket socket = new Socket( server, 80 );

    // Create input and output streams to read from and write to the server
    PrintStream out = new PrintStream( socket.getOutputStream() );
    BufferedReader in = new BufferedReader( new InputStreamReader( socket.getInputStream() ) );

    // Follow the HTTP protocol of GET <path> HTTP/1.0 followed by an empty line
    out.println( "GET " + path + " HTTP/1.0" );
    out.println();

    // Read data from the server until we finish reading the document
    String line = in.readLine();
    while( line != null )
    {
        System.out.println( line );
        line = in.readLine();
    }
```

Socket Client

```java
// Close our streams
        in.close();
        out.close();
        socket.close();
    }
    catch( Exception e )
    {
        e.printStackTrace();
    }
  }
}
```

Socket Client

Step 2: Run your socket client

C:\Windows\System32\cmd.exe

```
D:\2020-21_sem2\CN\Practical\Assignment\Ass9>java WClient localhost /
Loading contents of URL: localhost
HTTP/1.1 200 OK
Content-Type: text/html
Last-Modified: Sun, 11 Apr 2021 06:40:10 GMT
Accept-Ranges: bytes
ETag: "c94bbd849d2ed71:0"
Server: Microsoft-IIS/10.0
Date: Sun, 11 Apr 2021 07:34:40 GMT
Connection: close
Content-Length: 147

<!DOCTYPE html>
<html>
<body>

<h1>My First page from web server IIS</h1>

<p>My first paragraph from web server IIS.</p>

</body>
</html>

D:\2020-21_sem2\CN\Practical\Assignment\Ass9>_
```
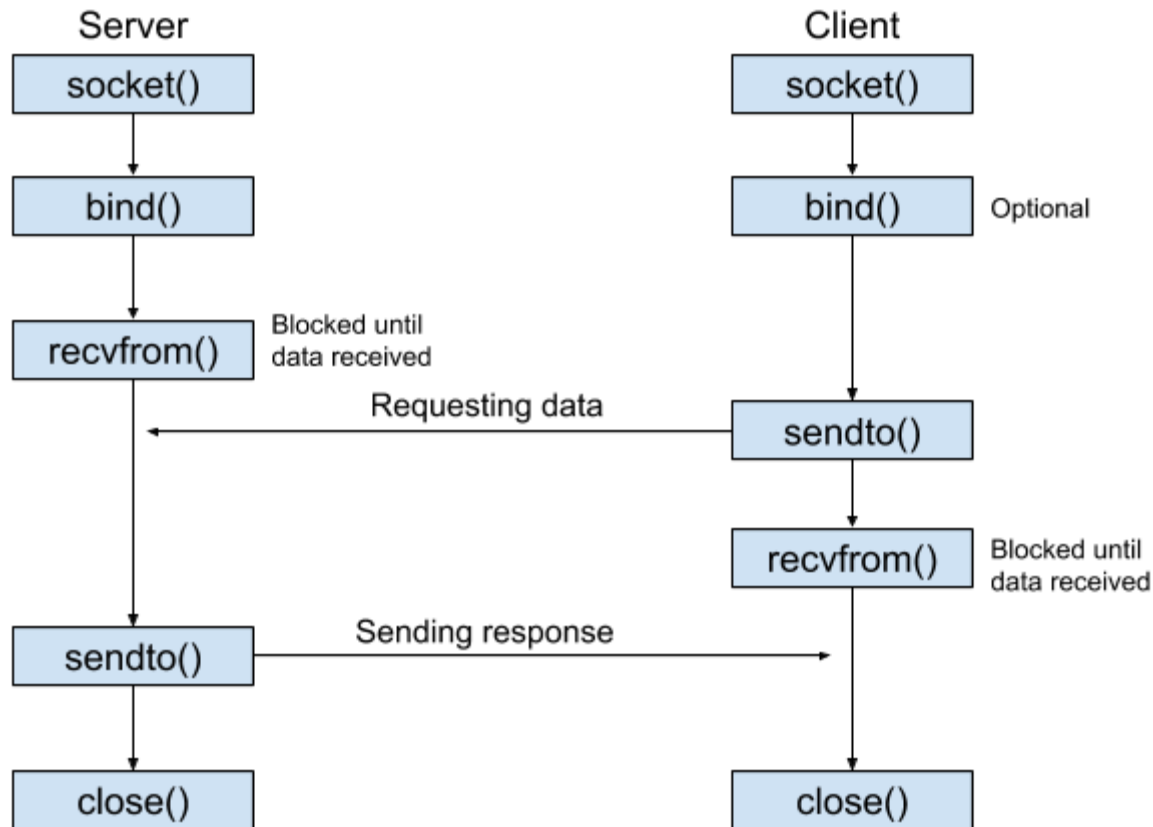
UDP Socket Programming

- Working of UDP Socket

UDP Socket in Java Example
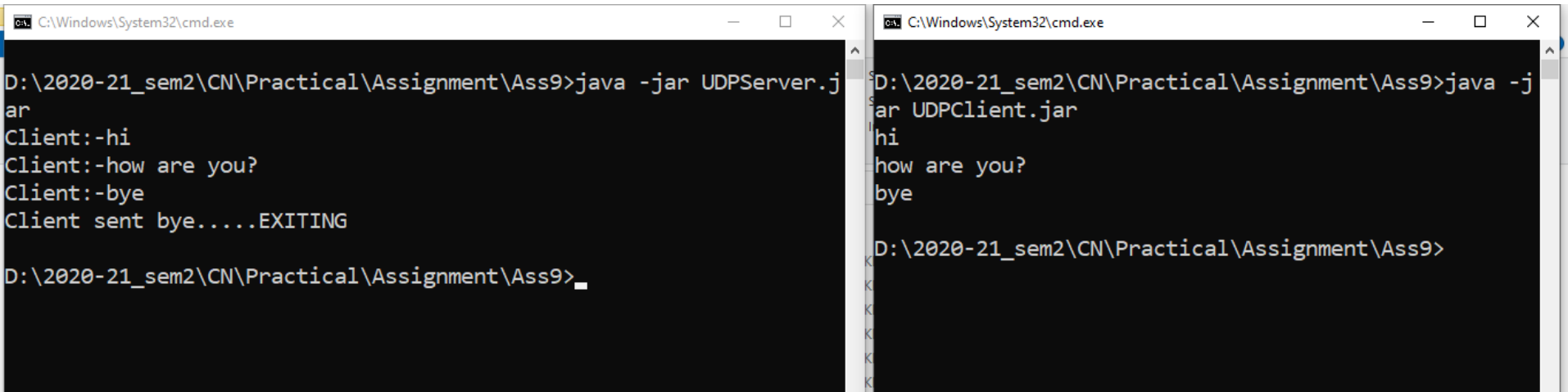
- UDP Server
- UDP Client

Run UDP Client and Server

Practice Statement

- Create your own web page for your profile, store it on web server and access the resources stored on web server using java socket client.

- Create a socket client for accessing resources from "[www.webcode.me\r\n](www.webcode.me)".

- Create a UDP client-server socket program, where client is requesting simple arithmetic operations (addition, subtraction, multiplication, and division) and expecting server to output result of operation.

Sources

- https://helpdeskgeek.com/windows-10/install-and-setup-a-website-in-iis-on-windows-10/

- https://www.codejava.net/java-se/networking/java-urlconnection-and-httpurlconnection-examples

- https://www.w3schools.com/html/

- https://medium.com/javarevisited/fundamentals-of-udp-socket-programming-in-java-4a6972370592

- https://www.geeksforgeeks.org/working-udp-datagramsockets-java/

Thank You!