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JAVA PROGRAM TO DEMONSTRATE MULTICAST USING UDP:

Receive.java:

```
// Multicast Program That Receives Multicast Messages
import java.net.DatagramPacket;
import java.net.InetAddress;
import java.net.MulticastSocket;
public class Receive {
    public static void main(String[] args) throws Exception {
        int mcPort = 12345;
        String mcIPStr = "230.1.1.1";
        MulticastSocket mcSocket = null;
        InetAddress mcIPAddress = null;
        mcIPAddress = InetAddress.getByName(mcIPStr);
        mcSocket = new MulticastSocket(mcPort);
        System.out.println("Multicast Receiver running at:"
            + mcSocket.getLocalSocketAddress());
        mcSocket.joinGroup(mcIPAddress);

        DatagramPacket packet = new DatagramPacket(new byte[1024], 1024);

        System.out.println("Waiting for a multicast message...");
        mcSocket.receive(packet);
        String msg = new String(packet.getData(), packet.getOffset(),
            packet.getLength());
        System.out.println("[Multicast Receiver] Received:" + msg);

        mcSocket.leaveGroup(mcIPAddress);
        mcSocket.close();
    }
}
```

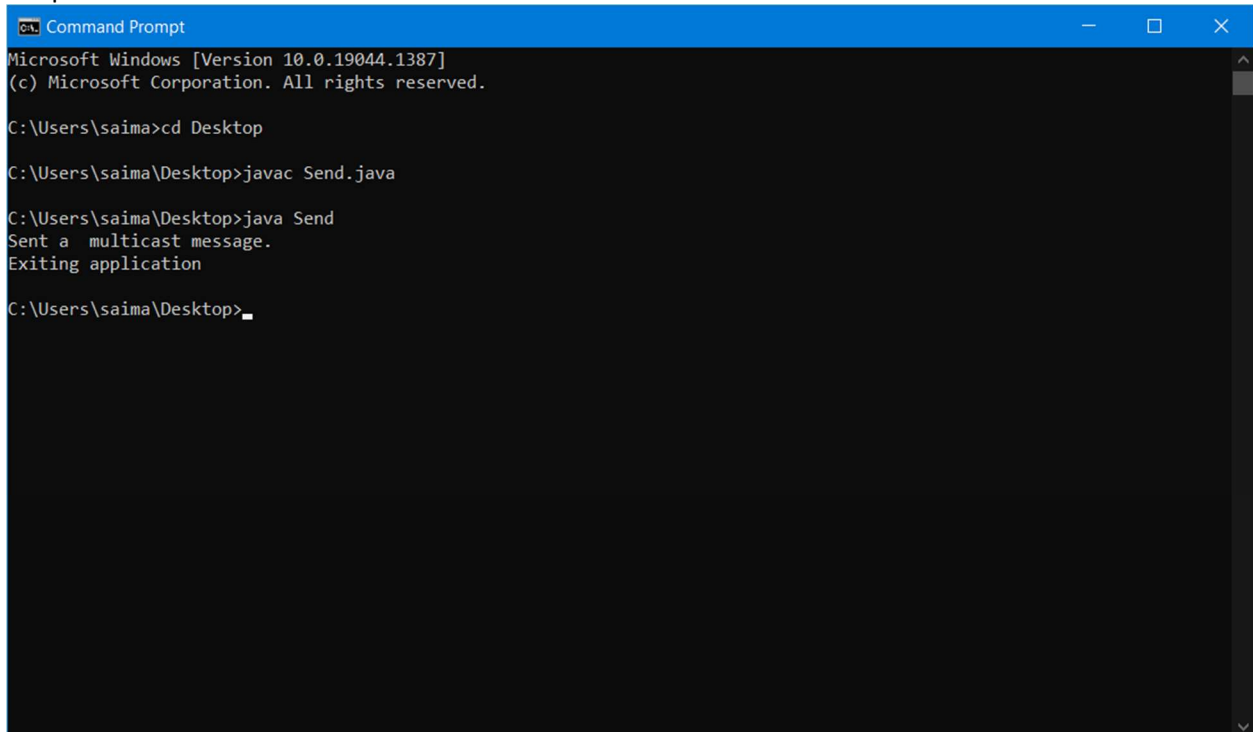
Send.java:

```
// Multicast Program That Sends Multicast Messages
import java.net.DatagramPacket;
import java.net.DatagramSocket;
import java.net.InetAddress;
public class Send {
    public static void main(String[] args) throws Exception {
        int mcPort = 12345;
        String mcIPStr = "230.1.1.1";
        DatagramSocket udpSocket = new DatagramSocket();

        InetAddress mcIPAddress = InetAddress.getByName(mcIPStr);
        byte[] msg = "Hello".getBytes();
        DatagramPacket packet = new DatagramPacket(msg, msg.length);
        packet.setAddress(mcIPAddress);
        packet.setPort(mcPort);
        udpSocket.send(packet);

        System.out.println("Sent a multicast message.");
        System.out.println("Exiting application");
        udpSocket.close();
    }
}
```

Output:

A screenshot of a Windows Command Prompt window. The title bar is blue and says "Command Prompt". The window content shows the following text: "Microsoft Windows [Version 10.0.19044.1387] (c) Microsoft Corporation. All rights reserved. C:\Users\saima>cd Desktop C:\Users\saima\Desktop>javac Send.java C:\Users\saima\Desktop>java Send Sent a multicast message. Exiting application C:\Users\saima\Desktop>". The text is white on a black background. There are scroll bars on the right side of the window.

```
Microsoft Windows [Version 10.0.19044.1387]
(c) Microsoft Corporation. All rights reserved.

C:\Users\saima>cd Desktop
C:\Users\saima\Desktop>javac Send.java
C:\Users\saima\Desktop>java Send
Sent a multicast message.
Exiting application
C:\Users\saima\Desktop>
```

```
Command Prompt

C:\Users\saima\Desktop>javac Receive.java
Note: Receive.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.

C:\Users\saima\Desktop>java Receive
Multicast Receiver running at:/[0:0:0:0:0:0]:12345
Waiting for a multicast message...
[Multicast Receiver] Received:Hello

C:\Users\saima\Desktop>
```