

CCA-104: Web Technologies

Assignment

Part 2

Q3. Write a Program to display count, from 5 to 15 using PHP loop as given below.

Ans. **Write a program to count 5 to 15 using PHP loop**

Description:

Write a Program to display count, from 5 to 15 using PHP loop as given below.

Rules & Hint

- You can use "for" or "while" loop
- You can use variable to initialize count
- You can use html tag for line break

View Solution/Program

```
<?php
$count = 5;
while($count <= 15)
{
    echo $count;
    echo "<br>" ;

    $count++;
}
?>
```

PHP

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5
6
7
8
9
10
11
12
13
14
15

Write a factorial program using for loop in php

Description:

Write a program to calculate factorial of a number using for loop in php.

```
<?php
$num = 3;
$factorial = 1;

for ($x=$num; $x>=1; $x--)
{
    $factorial = $factorial * $x;
}

echo "The factorial of $num is $factorial";
?>
```

PHP

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The factorial of 3 is 6

Write a program to create Chess board in PHP using for loop

Description:

Write a PHP program using nested for loop that creates a chess board.

Conditions:

- You can use html table having width="400px" and take "30px" as cell height and width for check boxes.

View Solution/Program

```
<table width="400px" cellspacing="0px" cellpadding="0px" border="1px">
<?php
for($row=1;$row<=8;$row++)
{
    echo "<tr>";
    for($column=1;$column<=8;$column++)
    {
        $total=$row+$column;
        if($total%2==0)
        {
            echo "<td height=35px width=30px
bgcolor=#FFFFFF></td>";
        }
        else
        {
            echo "<td height=35px width=30px
bgcolor=#000000></td>";
        }
    }
}
```

```
        echo "</tr>";
    }
?>
</table>
```

Write a Program to create given pattern with * using for loop

Description:

Write a Program to create following pattern using for loops:

```
*
**
***
****
*****
*****
*****
*****
*****
```

Rules

- You can use for or while loop
- You can use multiple (nested) loop to draw above pattern

View Solution/Program using two for loops

```
<?php
for($row=1;$row<=8;$row++)
{
    for ($star=1;$star<=$row;$star++)
    {
        echo "*";
    }
    echo "<br>";
}
?>
```

Q4. Write a program in javascript for Unit Conversion from Kilometer (km) to Centimeter (cm). use of message box is necessary.

Ans. Program to Convert Kilometer to cm

Here, we will learn how to convert the length value, which is given in Kilometer, to the length in centimeter.

If we want to convert the value of Kilometer into cm value, then we have to use the following formula:

$$1 \text{ km} = 100000 \text{ cm. cm} = 100000 * \text{Kilometer.}$$

Program 1: Write a Program in C for converting the length value of Kilometer into centimeter.

1. `#include<stdio.h>`
2. `int main()`
3. `{`
4. `double Kilometer = 4;`
5. `double centimeter;`
6. `centimeter = 100000 * Kilometer;`
7. `printf ("Value of 4 kilometer in Centimeter is:", centimeter);`
8. `return 0;`
9. `}`

Output:

```
Value of 4 kilometer in Centimeter is: 400000
```

Program 2: Write a Program in PHP for converting the value of Kilometer into cm.

1. `<?php`
2. `// This is a PHP program which converts the value of Kilometer into the value of cm`
3. `$Kilometer = 10.4;`
4. `$centimeter = 100000 * $Kilometer;`
5. `echo("Value of 10.4 Kilometer in Centimeter is " . $centimeter . "\n");`
6. `?>`

Output:

```
Value of 10.4 Kilometer in Centimeter is: 1040000
```

Program 3: Write a Program in Java for converting the value of Kilometer into cm.

1. `// This is a Java program which converts the value of Kilometer into the value in cm`
2. `import java.io.*;`
3. `class convert {`
4. `static double Conversion_Kilometer_to_cm(int Kilometer)`
5. `{`
6. `double centimeter;`
7. `centimeter = 100000 * Kilometer;`
8. `System.out.printf("Value in Centimeter is: %.2f \n", centimeter);`
9. `return 0;`
10. `}`
11. `public static void main(String args [])`
12. `{`
13. `int Kilometer = 2.008457;`
14. `Conversion_Kilometer_to_cm(Kilometer);`
15. `}`
16. `}`

Output:

```
Value in Centimeter is: 200845.70
```

Program 4: Write a Program in Python for converting the value of Kilometer into cm.

1. `# This is a Python program which converts the value of Kilometer into cm`
2.
3. `Kilometer=int(input("Enter the length in Kilometer:"))`
4. `#convert Kilometer to cm`
5. `centimeter = 100000 * Kilometer;`
6.
7. `print("The length in centimeter",round(centimeter,2))`

Output:

Enter the length in Kilometer: 25
The length in centimeter 2500000.00

Port Forwarding

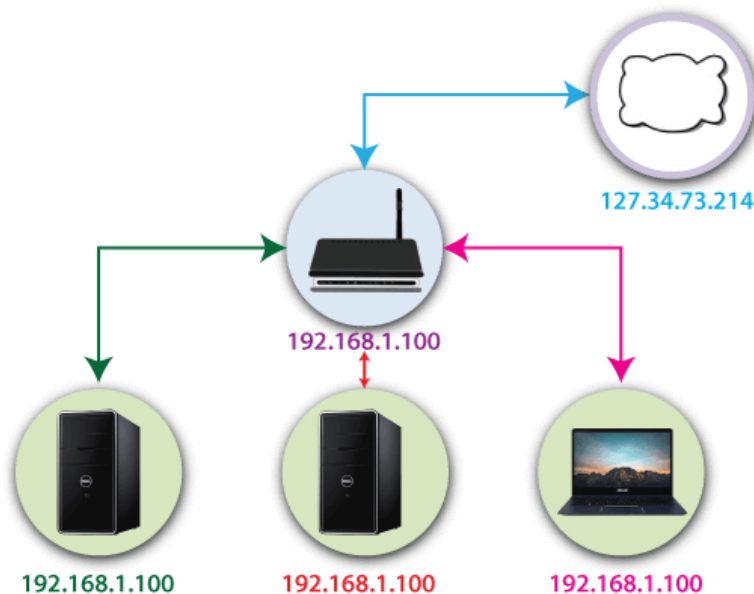
Port forwarding is the back-end process of the cut-off data traffic headed for a computer's IP/ port combination and redirects those traffic to a different IP and port. An application running on the client's computer usually causes the redirection, but sometimes it can be an intermediate hardware component, such as Router, proxy [server](#), or firewall. It is also called tunneling because anyone sending data to a server isn't aware of what's happening. The request made will still get to its ultimate destination.

The port forwarding has been started with the packets created when we transfer and data requests over the Internet. The header of the [IP](#) packet will be sent to a linked and appropriate interface after it gets examined by the network router, which transfers the data to the destination information available in the header.

The intercepting application reads the packet header, notes the destination in port forwarding and then the header information will be rewritten and sends it to another PC.

How the Requests will be handled, and ports will be used on our Router

Given the image below is a map of a simple home network. The greater Internet is represented by the cloud icon and our public, or forward-facing, Internet Protocol address. The address 192.168.1.1 written in red is the address of the Router of our network.



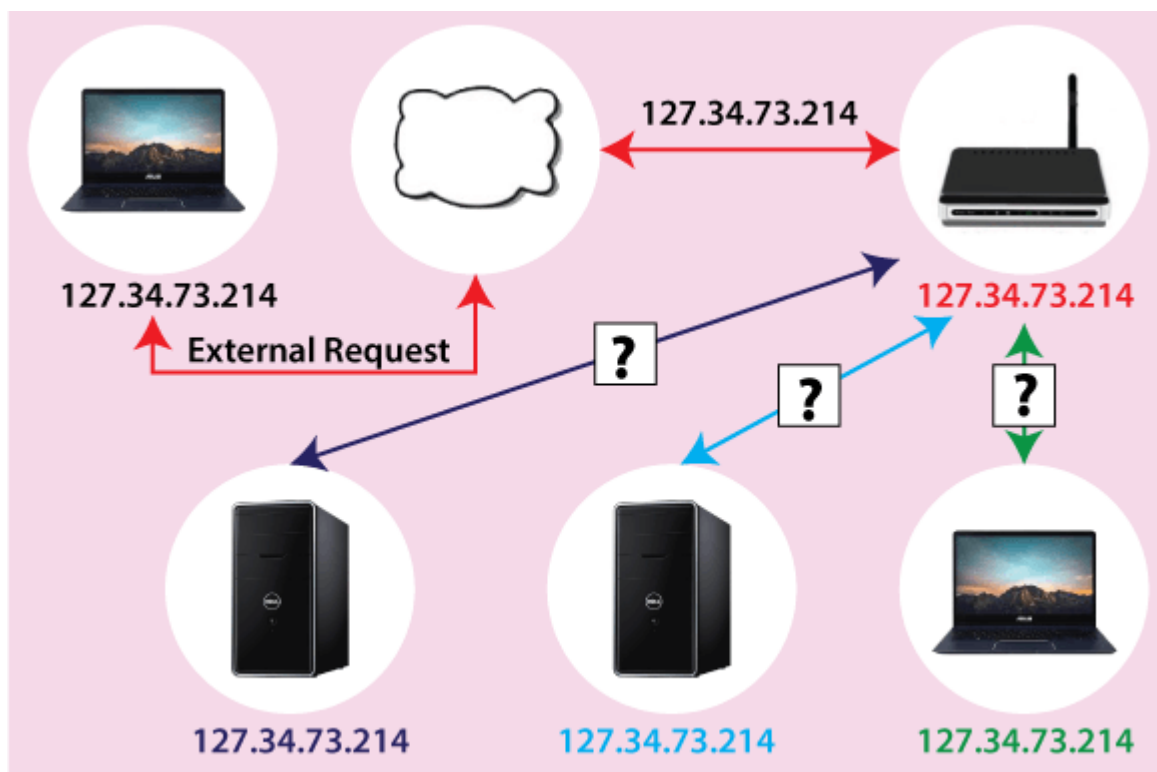
Let's understand how the information from the Internet gets to the right device inside the network. It can be done using NAT (Network Address Translation). It

occurs at the router level, where it acts like a traffic cop, which directs the flow through the Router of network traffic so that a single public IP can be shared among all the devices behind the Router.

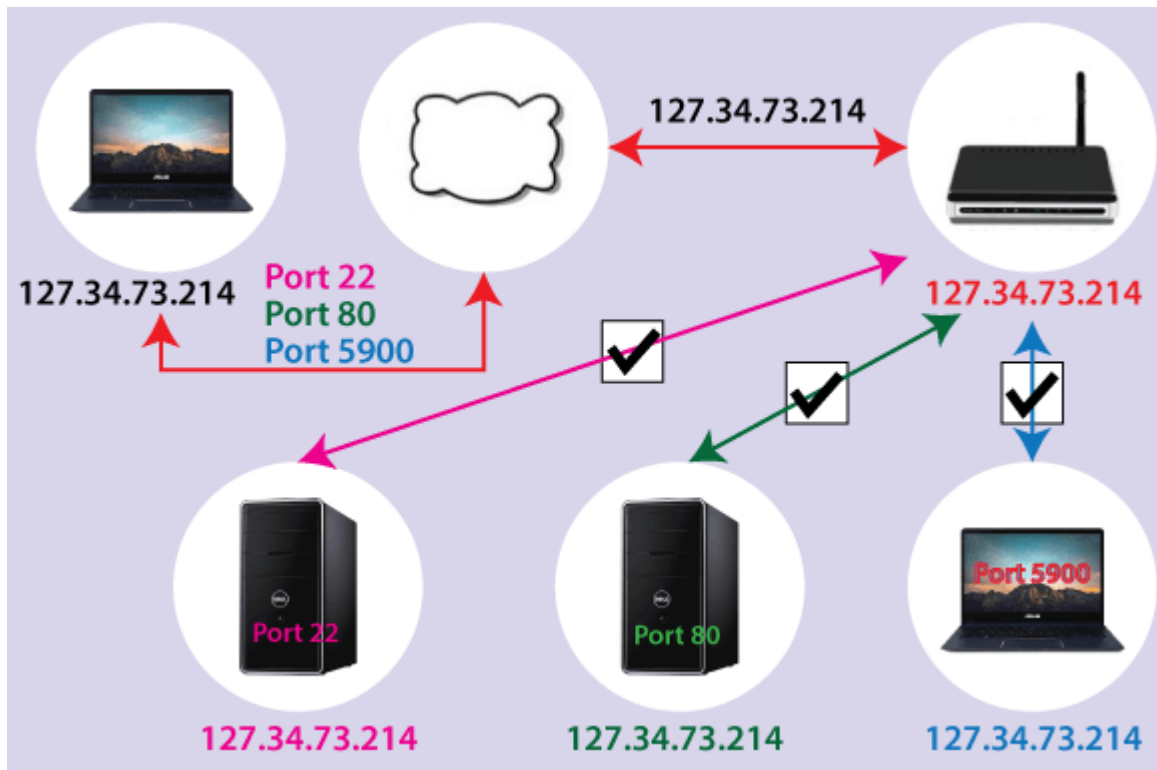
Role of ports: Ports have a specific application, which is standards throughout the computing industry. When we go to the web page, it uses port 80. The receiver computer's applications know that port 80 is used for serving http documents, so it is listening on port 80 and responds accordingly. If we send an http request to a different port, the web server won't recognize it because it's not listening there.

Why do we need port forwarding

The tunneling is an excellent way to conserve public IP. It will protect the server and client from unwanted access, limit access to and from a network, and hide the services and servers available on a network. It is transparent to the end-user and adds an extra layer of security to networks. In other words, it is used to keep unwanted traffic off networks. It is useful for the home network users that run a gaming server or Web server on one network. The diagram below shows a simple premises network. We are on our laptop somewhere globally, and we want to connect to our home network to access some data.



the image above, when we are out and about to use our pc, we use different ports to make our request. When we access our home network's IP address using port 22. Our Router at home knows that it should belong to 192.168.1.100 inside the network.



We can also use port forwarding to change existing services of port numbers for clarity and convenience. E.g., we have two servers running on our home network, and we want one to be ready and accessible, and the other web server is for a personal project. We can redirect the port of the Router to be reconfigured to use a different port for the second computer. But still, we can manage traffic effectively.

