

TASK 2

AIM:

To create a web application for Placement Cell.

DESCRIPTION:

Web Application Consists of College Details, Student Details, Company Details, And Placement Details.

It helps to get an overview of how many students are placed in different companies and which companies are recruiting the students etc.

PROGRAM:

Index.php:

```
<!DOCTYPE html>
<html>

<head>
<style>
body {
    font-size: 28px;
    margin: 0;
    padding: 0;
    background-color: #f7e6e6;
}

.img-box img {
    display: block;
}

.nav {
    left: 0;
    right: 0;
    width: 100%;
    background-color: orange;
    position: absolute;
    list-style: none;
    margin: 0;
    padding: 0;
    text-align: center;
}
```

```
.nav li {  
    display: inline-block;  
}  
  
.nav li a {  
    display: block;  
    color: black;  
    text-align: center;  
    padding: 14px 16px;  
    text-decoration: none;  
  
}  
  
li a:hover {  
    background-color: white;  
  
}  
  
.td {  
    padding: 90px;  
}  
  
table tr td {  
    border: 1px solid;  
}  
  
td a {  
    text-decoration: none;  
}  
</style>  
</head>  
  
<body>  
<div class="img-box">  
      
</div>  
<ul class="nav">  
    <li><a class="active" href="home.php">Home</a></li>  
    <li><a href="studentdetails.php">Student Details</a></li>  
    <li><a href="">Company Details</a></li>  
    <li><a href="">Placements Details</a></li>  
</ul>
```

Home.php:

```
<?php
include("index.php");
?>
<br>
<p><b>Velagapudi Ramakrishna Siddhartha Engineering College</b> or VRSEC was
the first private institution
to offer undergraduate education in engineering in Andhra Pradesh, India and first
private college
to offer PG Programmes in engineering in Andhra Pradesh in the year 1977.
The college was approved to be an autonomous institution by Acharya Nagarjuna
University in the year 1977</p>
<p>
<table>
<tr>
<td colspan="2">
<b>NBA Accreditation</b> The college has been putting in its sincere efforts to
maintain high quality in academics
and would like to ensure conducive learning environment on the campus. <br>The
spirit of the college is understood
in getting it accredited much before the state government's decision to accord
additional fee from the students
of the accredited departments. The college was accredited in the year 1998 for the
first time, and subsequently
in 2005 and 2009 & 2014. The NBA peer teams expressed their satisfaction over
almost all the facilities,
teaching-learning processes, student performance; motivation levels of the
teachers and thereby, the potential
of the college for excellence.</p>
</td>
<td>

</td>
</tr>

<tr>
<td width="100">

</td>
<td colspan="2">
```

<p>Regular ISO certification Instead of clamoring for ensuring quality management systems with

the age old or conventional methods of documentation and up gradation, the college has realized

the need for adapting internationally renowned and a multi dimensional quality management system being developed.

Hence, the college obtained ISO 9001:2000 certifications initially in the year 2004 and has been renewing it.

Consequent on the conferment of autonomy on the college, the institution scaled up its certification potential

by widening its domain by obtaining certification for the design process also.

As a result, the college secured

ISO 9001:2015 Certification.</p>

</td>

</tr>

<tr>

<td colspan="2">

<p>The National Assessment and Accreditation Council (NAAC) is a government organization in India that assesses and

accredits Higher Education Institutions (HEIs). It is an autonomous body funded by the University Grants Commission and

headquartered in Bangalore.

NAAC Accreditation Accredited by NAAC with A+ grade for a period of five years.</p>

</td>

<td> </td>

</tr>

</table>

</body>

</html>

Studentdetails.php:

```
<?php  
include("index.php");  
?>  
<br>  
<br>  
<center>  
<table>
```

```
<tr>
    <td class="td">
        <a href="cse.php">CSE</a>
    </td>
    <td class="td">
        <a href="ece.php">ECE</a>
    </td>
    <td class="td">
        <a href="it.php">IT</a>
    </td>
</tr>
<tr>
    <td class="td">
        <a href="eee.php">EEE</a>
    </td>
    <td class="td">
        <a href="mech.php">MECH</a>
    </td>
    <td class="td">
        <a href="civil.php">CIVL</a>
    </td>
</tr>

</table>
</center>
</body>

</html>
```

Department.php:

```
<?php
include("index.php");
$hostname = "localhost";
$username = "root";
$password = "";
$db_name = "students";

$display = "SELECT * FROM $table_name";
//Connecting to the server with login details
$con = new mysqli($hostname, $username, $password);
if ($con->connect_error) {
    die("Connection failed:" . $con->connect_error);
}
//Connect to server and select database.
```

```
$con = mysqli_connect($hostname, $username, $password, $db_name);
$result = $con->query($display);
$dep = strtoupper($table_name);
echo "<br><br><br><center>Student Details OF $dep DEPARTMENT</center>";
echo "<center><table border='1px solid black' cellpadding='3px'><tr><th>Name of
student</th><th>registration
Number</th><th>Section</th><th>Email</th><th>C.G.P.A</th></tr>" // start a table
tag in the HTML
while ($row = $result->fetch_assoc()) { //Creates a loop to loop through results
    echo "<tr><td>" . $row['name'] . "</td><td>" . $row['regnum'] . "</td><td>" .
    $row['sec'] . "</td><td>" . $row['email'] . "</td><td>" . $row['cgpa'] . "</td></tr>";
    // $row['index'] the index here is a field name
}
echo "</table></center></body></html>";
```

cse.php:

```
<?php
    $table_name="cse";
    include('department.php');
?>
```

ece.php:

```
<?php
    $table_name="ece";
    include('department.php');
?>
```

it.php:

```
<?php
    $table_name="it";
    include('department.php');
?>
```

eee.php:

```
<?php
    $table_name="eee";
    include('department.php');
?>
```

mech.php:

```
<?php
    $table_name="mech";
    include('department.php');
```

?>

civil.php:

```
<?php  
    $stable_name="civil";  
    include('department.php');  
?>
```

companydetails.php:

```
<?php  
include("index.php");  
?>  
<html>  
  
<head>  
  
</head>  
  
<body>  
    <br><br>  
    <table>  
        <tr>  
            <td class="td1">  
                <a href="amazon.php">Amazon</a>  
            </td>  
            <td class="td1">  
                <a href="microsoft.php">Microsoft</a>  
            </td>  
            <td class="td1">  
                <a href="it.php">TCS</a>  
            </td>  
            <td class="td1">  
                <a href="">Deloitte</a>  
            </td>  
            <td class="td1">  
                <a href="">Cisco</a>  
            </td>  
        </tr>  
        <tr>  
            <td class="td1">  
                <a href="">Deloitte</a>  
            </td>  
            <td class="td1">  
                <a href="">Accenture</a>  
            </td>  
            <td class="td1">  
                <a href="">Capgemini</a>  
            </td>  
            <td class="td1">
```

```
<a href="">Wipro</a>
</td>
<td class="td1">
    <a href="">Zen Systems</a>
</td>
</tr>

</table>
</html>
```

Company.php:

```
<?php
include("index.php");
$hostname = "localhost";
$username = "root";
$password = "";
$db_name = "company";

$display = "SELECT * FROM $table_name";
//Connecting to the server with login details
$con = new mysqli($hostname, $username, $password);
if ($con->connect_error) {
    die("Connection failed:" . $con->connect_error);
}
//Connect to server and select database.
$con = mysqli_connect($hostname, $username, $password, $db_name);
$result = $con->query($display);
$dep = strtoupper($table_name);
$res = mysqli_query($con, "SELECT MAX(package) FROM $table_name");
$row = mysqli_fetch_array($res);
echo "<br><br><br><center>Students placed in $dep</center>";
echo "<center>Highest Package is: $row[0] Lcs</center>";

echo "<center><table border='1px solid black' cellpadding='3px'><tr><th>Name of
student</th><th>registration Number</th><th>Email</th><th>Package(in
Lcs)</th></tr>"; // start a table tag in the HTML
while ($row = $result->fetch_assoc()) { //Creates a loop to loop through results
    echo "<tr><td>" . $row['name'] . "</td><td>" . $row['regnum'] . "</td><td>" .
    $row['email'] . "</td><td>" . $row['package'] . "</td></tr>"; // $row['index'] the index
here is a field name
}
echo "</table></center></body></html>";
```

Amazon.php:

```
<?php
$stable_name="amazon";
include('company.php');
?>
```

microsoft.php:

```
<?php
    $stable_name="microsoft";
    include('company.php');
?>
```

Tcs.php:

```
<?php
    $stable_name="tcs";
    include('company.php');
?>
```

Delloite.php:

```
<?php
    $stable_name="delloite";
    include('company.php');
?>
```

Wipro.php:

```
<?php
    $stable_name="wipro";
    include('company.php');
?>
```

Placementdetails.php:

```
<?php
include('index.php');
?>
<html>
<head>
<style>
div{
color:white
}
h1{
color:red
}

</style>
</head>
<body>
<br><br>
<center><table bgcolor="lightblue" width="100%">
<tr>
<td align="center" vaign="center">
<div>
<b><h2>2020-21||Total 861* On Going Year</h2></b>
</div>
```

```
</td>
</tr>
<tr>
    <td align="center" valign="center">
        B.Tech:&nbsp;CSE-236,&nbsp;&nbsp;&nbsp;IT-
        158,&nbsp;&nbsp;&nbsp;ECE-241,&nbsp;&nbsp;&nbsp;EEE-
        82,&nbsp;&nbsp;&nbsp;Me-56,&nbsp;&nbsp;&nbsp;CE-08,&nbsp;&nbsp;&nbsp;MCA-
        15,&nbsp;&nbsp;&nbsp;MBA-12,&nbsp;&nbsp;&nbsp;MTECH-11
    </td>
</tr>
<tr>
</tr>
<tr>
    </tr>
</table>
<br>
<br>
<br>
<table bgcolor="Skyblue" cellpadding="25" width="100%">
<tr>
    <td>
        <h2><b>2021<br>Quick<br>Facts</b></h2>
    </td>
    <td>
        <h1 ><b>56</b></h1>

        COMPANIES VISITED
    </td>
    <td>
        <h1><b>861</b></h1>
    </td>
</tr>
<tr>
    <td>
        OFFERS
    </td>
    <td>
        <h1><b>19.6</b></h1>
    </td>
</tr>
<tr>
    <td>
        HIGHPACKAGE
    </td>
    <td>
        <h1><b>4.3</b></h1>
    </td>
</tr>
<tr>
    <td>
        AVERAGE PACKAGE
    </td>
    <td>
        <h1><b>4.0</b></h1>
    </td>
</tr>
<tr>
    <td>
        MEDIAN
    </td>
</tr>
</table>
```

```
</center>
<font color="blue"><h2>PLACEMENTS GRAPH FOR LAST FIVE
YEARS</h2></font>

<center>

<style>
#canvas
{
background:white;
border:5px solid;
margin-bottom:7px;
}
</style>
<script type="text/javascript">

var canvas ;
var context ;
var Val_Max;
var Val_Min;
var sections;
var xScale;
var yScale;
var y;

// values of each item on the graph
var courseName = [ "2021", "2019", "2018", "2017" , "2016"];
var courseValue = [ 985, 950, 920, 900,880 ];

function init()
{
// intialize values for each variables
sections = 5;
Val_Max = 1000;
var stepSize = 100;
var columnSize = 50;
var rowSize = 60;
var margin = 10;
var header = "Number Of Students Got Placed"

canvas = document.getElementById("canvas");
context = canvas.getContext("2d");
context.fillStyle = "#000;"

yScale = (canvas.height - columnSize - margin) / (Val_Max);
xScale = (canvas.width - rowSize) / (sections + 1);

context.strokeStyle="#000;" // background black lines
context.beginPath();
// column names
```

```
context.font = "19 pt Arial";
context.fillText(header, 0,columnSize - margin);
// draw lines in the background
context.font = "16 pt Helvetica"
var count = 0;
for (scale=Val_Max;scale>=0;scale = scale - stepSize)
{
y = columnSize + (yScale * count * stepSize);
context.fillText(scale, margin,y + margin);
context.moveTo(rowSize,y)
context.lineTo(canvas.width,y)
count++;
}
context.stroke();

// print names of each data entry
context.font = "20 pt Verdana";
context.textBaseline="bottom";
for (i=0;i<5;i++)
{
computeHeight(courseValue[i]);
context.fillText(courseName[i], xScale * (i+1),y - margin);
}

// translate to bottom of graph inorder to match the data
context.translate(0,canvas.height - margin);
context.scale(xScale,-1 * yScale);

// draw each graph bars
for (i=0;i<5;i++)
{
context.fillRect(i+1, 0, 0.3, courseValue[i]);
}
}

function computeHeight(value)
{
y = canvas.height - value * yScale ;
}

</script>
</head>
<body onLoad="init()">

<canvas id="canvas" height="400" width="650"></canvas>

</center>
<h1>PLACEMENTS STAFF</h1><center>
<table border="1" cellpadding="10" cellspacing="5">
```

```
<tr>
<th>S.NO</th>
<th>Name of the Faculty</th>
<th>Email-Id</th>
<th>Mobile Number</th>
<th>Experience</th>
<tr>
<tr>
<td>1</td>
<td><b>V.VIJAY MARUTHI BABU</b><br>
Head-Industry Relations&Placements</td>
<td>placements@vrsiddhartha.ac.in</td>
<td>+91 9390688699</td>
<td>36 Years</td>
</tr>
<tr>
<td>2</td>
<td><b>V.SIRESHA</b><br>
Asst.T&P Officer</td>
<td>vsireesha@vrsiddhartha.ac.in</td>
<td>+91 9876547845</td>
<td>24 Years</td>
</tr>
<tr>
<td>3</td>
<td><b>G.Rajeswar Rao</b><br>
Asst.T&P Officer</td>
<td>rajeswar@vrsiddhartha.ac.in</td>
<td>+91 9786587845</td>
<td>14 Years</td>
</tr>
<tr>
<td>4</td>
<td><b>K.Vijay Sai</b><br>
Executive-Industry Relations&Placements</td>
<td>vijaysaik@vrsiddhartha.ac.in</td>
<td> +91 9234176890</td>
<td>10 Years</td>
</tr>
</table></center>
</body>
</html>
```

OUTPUT:

VELAGAPUDI RAMAKRISHNA SIDDHARTHA ENGINEERING COLLEGE
(Sponsored by Siddhartha Academy of General & Technical Education)

An Autonomous Institute
Approved by AICTE, New Delhi
Affiliated to JNTUK, Kakinada
ISO 9001:2015 Certified

Home Student Details Company Details Placements Details

Velagapudi Ramakrishna Siddhartha Engineering College or VRSEC was the first private institution to offer undergraduate education in engineering in Andhra Pradesh, India and first private college to offer PG Programmes in engineering in Andhra Pradesh in the year 1977. The college was approved to be an autonomous institution by Acharya Nagarjuna University in the year 1977

NBA Accreditation The college has been putting in its sincere efforts to maintain high quality in academics and would like to ensure conducive learning environment on the campus. The spirit of the college is understood in getting it accredited much before the state government's decision to accord additional fee from the students of the accredited departments. The college was accredited in the year 1998 for the first time, and subsequently in 2005 and 2009 & 2014. The NBA peer teams expressed their satisfaction over almost all the facilities, teaching-learning processes, student performance; motivation levels of the teachers and thereby, the potential of the college for excellence.

NBA
NATIONAL BOARD OF ACCREDITATION

ISO 9001:2015

Regular ISO certification Instead of clamoring for ensuring quality management systems with the age old or conventional methods of documentation and up gradation, the college has realized the need for adapting internationally renowned and a multi dimensional quality management system being developed. Hence, the college obtained ISO 9001:2000 certifications initially in the year 2004 and has been renewing it. Consequent on the conferment of autonomy on the college, the institution scaled up its certification potential by widening its domain by obtaining certification for the design process also. As a result, the college secured ISO 9001:2015 Certification.

VELAGAPUDI RAMAKRISHNA SIDDHARTHA ENGINEERING COLLEGE
(Sponsored by Siddhartha Academy of General & Technical Education)

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Home Student Details Company Details Placements Details

CSE	ECE	IT
EEE	MECH	CIVL

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Home Student Details Company Details Placements Details

Student Details OF CSE DEPARTMENT

Name of student	Registration Number	Section	Email	C.G.P.A
hussain	19W1A05IO	C	taj4357@gmail.com	9.0
Afrose	19W1A05G5	C	198w1a05g5@siddhartha.ac.in	9.45
Raj	198W1A05E5	B	198w1a05e5@vrsiddhartha.ac	9.2
Mohana	198W1A05J0	A	198w1a05j0@vrsiddhartha.ac	9.4
Suhita	198W1A05J3	A	198w1a05j3@vrsiddhartha.ac	8.7
Junaid	198W1A05G6	B	198w1a05g6@vrsiddhartha.ac	9.4

localhost/webdhs510/ece.php

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Home Student Details Company Details Placements Details

Student Details OF ECE DEPARTMENT

Name of student	registration Number	Section	Email	C.G.P.A
Kavya	198W1A05F8	C	198W1A05F8@vrsiddhartha.ac	9.5
Manoj	198W1A0567	A	198W1A0567@vrsiddhartha.ac	8.7
Sravya	198W1A05F0	B	198W1A05F0@vrsiddhartha.ac	9.6
Ooha	198W1A05E7	C	198W1A05e7@vrsiddhartha.ac	9.75
Sridhar	198W1A0597	A	198W1A0597@vrsiddhartha.ac	8.5
Tejaswini	198W1A05A1	B	198W1A05F1@vrsiddhartha.ac	9.1

localhost/webdhs510/cse.php

VELAGAPUDI RAMAKRISHNA SIDDHARTHA ENGINEERING COLLEGE
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ISO 9001:2015 Certified

Home Student Details Company Details Placements Details

Student Details OF IT DEPARTMENT

Name of student	registration Number	Section	Email	C.G.P.A
hussain	19W1A0510	C	taj4357@gmail.com	9.0
Afrose	19W1A05G5	C	198w1a05g5@siddhartha.ac.i	9.45
Raj	198W1A05E5	B	198w1a05e5@vrsiddhartha.ac	9.2
Mohana	198W1A05J0	A	198w1a05j0@vrsiddhartha.ac	9.4
Suhita	198W1A05J3	A	198w1a05j3@vrsiddhartha.ac	8.7
Junaid	198W1A05G6	B	198w1a05g6@vrsiddhartha.ac	9.4

localhost/webdhs510/companydetails.php

VELAGAPUDI RAMAKRISHNA SIDDHARTHA ENGINEERING COLLEGE
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Home Student Details Company Details Placements Details

Recent Recruiters

5 LPA	19 LPA	12 LPA	2 LPA	23 LPA
8 LPA	8 LPA	20.5 LPA	9.5 LPA	
8 LPA	8 LPA	8 LPA	8 LPA	8 LPA
8 LPA	8 LPA	8 LPA	8 LPA	8 LPA
8 LPA	8 LPA	8 LPA	8 LPA	

This screenshot shows a table of companies and their placement details. The companies listed are Amazon, Microsoft, TCS, Deloitte, Cisco, Deloitte, Accenture, Capgemini, Wipro, and Zen Systems.

Company	Placement Details
Amazon	Microsoft
TCS	Deloitte
Cisco	
Deloitte	Accenture
Capgemini	Wipro
Zen Systems	

This screenshot shows the placement details for Amazon. It states that students were placed at Amazon with the highest package being 21.6 Lacs. A table lists the student names, registration numbers, emails, and packages.

Students placed in AMAZON
Highest Package is: 21.6 Lcs

Name of student	registration Number	Email	Package(in Lcs)
Pratyusha	188W1A0578	188W1A0578@vrsiddhartha.ac	21.6
Sridhar	188W1A0505	188W1A0505@vrsiddhartha.ac	19.6
Suhana	188W1A05h6	188W1A05h6@vrsiddhartha.ac	19.6
Ram	188W1A0598	188W1A0598@vrsiddhartha.ac	19.6

This screenshot shows the placement details for Microsoft. It states that students were placed at Microsoft with the highest package being 14 Lacs. A table lists the student names, registration numbers, emails, and packages.

Students placed in MICROSOFT
Highest Package is: 14 Lcs

Name of student	registration Number	Email	Package(in Lcs)
Priyanka	188W1A0577	188W1A0577@vrsiddhartha.ac	14
Vedha Vyas	188W1A0507	188W1A0507@vrsiddhartha.ac	14
Srihitha	188W1A05h9	188W1A05h9@vrsiddhartha.ac	12
Sindhu	188W1A0599	188W1A0599@vrsiddhartha.ac	12

The screenshot shows a web page for the college's placements. At the top, it displays the college's name and logo. Below that, a banner for the academic year 2020-21 states "Total 861* On Going Year". A table provides quick facts: 56 companies visited, 861 offers, 19.6 average package, 4.3 median package, and 4.0 average package. A bar chart titled "Number Of Students Got Placed" shows data for five years, with values around 500-550. A table lists the placement staff members with their names, roles, email IDs, mobile numbers, and experience.

S.NO	Name of the Faculty	Email-Id	Mobile Number	Experience
1	V.VIJAY MARUTHI BABU Head-Industry Relations&Placements	placements@vrsiddhartha.ac.in	+91 9390688699	36 Years
2	V.SIRESHA Asst.T&P Officer	vsiresha@vrsiddhartha.ac.in	+91 9876547845	24 Years
3	G.Rajeswar Rao Asst.T&P Officer	rajeswar@vrsiddhartha.ac.in	+91 9786587845	14 Years
4	K.Vijay Sai Executive-Industry Relations&Placements	vijaysai@vrsiddhartha.ac.in	+91 9234176890	10 Years

TASK 3

AIM:

To Generate Captcha Using JavaScript

DESCRIPTION:

It Prompts the user to enter Captcha by seeing the generated one(Which is generated randomly by the system) if the user enters corrects it shows correct message else shows try again

PROGRAM:

```
<!DOCTYPE html>

<html>
<head>
<title>Captcha Generator</title>
<script type="text/javascript">
/* Function to Generat Captcha */

function GenerateCaptcha() {
    document.getElementById('success').innerHTML = "";
    document.getElementById('fail').innerHTML = "";
    document.getElementById('txtCompare').innerHTML="";
    var chr1 = Math.ceil(Math.random() * 10) + "";
    var chr2 = Math.ceil(Math.random() * 10) + "";
    var chr3 = Math.ceil(Math.random() * 10) + "";

    var str = new Array(4).join().replace(/(.|$/g, function () { return ((Math.random() * 36) | 0).toString(36)[Math.random() < .5 ? "toString" : "toUpperCase"](); });

    var captchaCode = str + chr1 + '' + chr2 + '' + chr3;
    document.getElementById("txtCaptcha").value = captchaCode
}

/* Validating Captcha Function */

function ValidCaptcha() {
    var str1 = removeSpaces(document.getElementById('txtCaptcha').value);
    var str2 = removeSpaces(document.getElementById('txtCompare').value);
    if(str1 == str2){
        document.getElementById('success').innerHTML = "Captcha is validated Successfully";
    }
}
```

```
        return true;
    }
else{
    document.getElementById('fail').innerHTML = "Enter valid Captcha";
    return false;
} }

/* Remove spaces from Captcha Code */

function removeSpaces(string) {
    return string.split(' ').join("");
}

</script> </head>

<body onload="GenerateCaptcha();" style="padding:50px">

<center><div style="border: 2px solid gray; width: 700px;">
<h2>Captcha Generator </h2> Enter the Captcha Text:
<input type="text" id="txtCompare" />
<input type="text" id="txtCaptcha" style="text-align: center; border: none; font-weight: bold; font-size: 20px; font-family: Modern; color: blue" />
<input type="button" id="btnrefresh" value="Refresh" onclick="GenerateCaptcha();"/>
<input id="btnValid" type="button" value="Check" onclick="ValidCaptcha();"/> <br>
<span id="success" style="color: green"></span><br>
<span id="fail" style="color: red"></span>
<br /> <br /> </div> </center>

</body>
</html>
```

OUTPUT:

A screenshot of the "Captcha Generator" application window. The title bar says "Captcha Generator". Inside, there's a text input field with the placeholder "Enter the Captcha Text:" and a value "03Au5410". Next to it is the generated Captcha code "03Au5 4 10". Below the input field, a message says "Captcha is validated Successfully". At the bottom right are "Refresh" and "Check" buttons.

TASK 5

AIM:

Defining XML and basic building blocks of DTD and Design a DTD for Letter Writting

DESCRIPTION:

Creation of DTD for Letter Writing which Consists of From Addres,To Address, Greetings, Message Paragraph,Closing and Signature)

PROGRAM:

- Xml (eXtensible Markup Language) is a **mark up language**.
- XML is designed to store and transport data.
- It is created to provide an easy to use and store self describing data.
- XML is platform independent and language independent.

Basic Building Blocks of DTD:

- Elements
- Attributes
- Entities
- PCDATA
- CDATA

➤ Elements

Elements are the main building blocks of both XML and HTML documents.

Examples of HTML elements are "body" and "table". Examples of XML elements could be "note" and "message". Elements can contain text, other elements, or be empty. Examples of empty HTML elements are "hr", "br" and "img".

Examples:

<body>some text</body>

<message>some text</message>

➤ Attributes

Attributes provide **extra information about elements**.

Attributes are always placed inside the opening tag of an element. Attributes always come in name/value pairs. The following "img" element has additional information about a source file:

The name of the element is "img". The name of the attribute is "src". The value of the attribute is "computer.gif". Since the element itself is empty it is closed by a "/".

➤ **Entities**

Some characters have a special meaning in XML, like the less than sign (<) that defines the start of an XML tag.

Most of you know the HTML entity: " ". This "no-breaking-space" entity is used in HTML to insert an extra space in a document. Entities are expanded when a document is parsed by an XML parser.

The following entities are predefined in XML:

Entity References	Character
<	<
>	>
&	&
"	"
'	'

➤ **PCDATA**

PCDATA means parsed character data.

Think of character data as the text found between the start tag and the end tag of an XML element.

PCDATA is text that WILL be parsed by a parser. The text will be examined by the parser for entities and markup.

Tags inside the text will be treated as markup and entities will be expanded.

However, parsed character data should not contain any &, <, or > characters; these need to be represented by the &; < and > entities, respectively.

➤ **CDATA**

CDATA means character data.

CDATA is text that will NOT be parsed by a parser. Tags inside the text will NOT be treated as markup and entities will not be expanded.

DTD for LetterWritting:

```
<?xml version = "1.0" encoding = "UTF-8" standalone = "yes" ?>
<!DOCTYPE letter [
<!ELEMENT letter (fromAddress,greetings,body,closing,signature)>
<!ELEMENT fromAddress (doorNo,street,district,state)>
<!ELEMENT ToAddress (doorNo,street,district,state)>
<!ELEMENT greetings (#PCDATA)>
<!ELEMENT body (#PCDATA)>
<!ELEMENT closing (#PCDATA)>
<!ELEMENT signature (#PCDATA)>
]>

<letter>
  <fromAddress>
    <doorNo></doorNo>
    <street></street>
    <district></district>
    <state></state>
  </fromAddress>
  <ToAddress>
    <doorNo></doorNo>
    <street></street>
    <district></district>
    <state></state>
  </ToAddress>
  <greetings>Respected/Dear</greetings>
  <body>Letter body</body>
  <closing>Thanking You</closing>
  <signature>XXXXXXX</signature>
</letter>
```