

COMPUTER ETHICS AND CYBER SECURITY

CHAPTER | S

Tamil Computing



18.1 Introduction

" பிறநாட்டு நல்லறிஞர் சாத்திரங்கள் தமிழ்மொழியிற் பெயர்த்தல் வேண்டும்; இறவாத புகழுடைய புதுநூல்கள் தமிழ்மொழியில் இயற்றல் வேண்டும்; மறைவாக நமக்குள்ளே பழங்கதைகள் சொல்வதிலோர் மகிமை இல்லை; திறமான புலமையெனில் வெளிநாட்டோர்; அதை வணக்கஞ் செய்தல் வேண்டும்."

- மகாகவி பாரதி

Human civilization developed with the innovation of computer in the twentieth century. Computer development began as a early calculating tool and has now become a essential ingredient for gigantic growth for the existence of human life without computers.

It is true that any language will be outdated when it does not have the ability to adapt itself to the changing technologies. Tamil is a living language for thousands of years. Development of modern technologies, does not affect the growth of classical Tamil as it is ready to adopt the growing technological changes. Tamil is not just a language, it is our identity, our life and our sense.

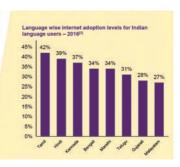
18.2 Tamil in Internet

We know that the internet today plays a vital role in every man's life. Internet is the best information technological device, through which we get know information.

In 2017 a study conducted by KPMG a Singapore based organization along with google, reported that, Tamil topped the list, among the most widely used languages in India, where 42% are using the Internet in Tamil

68%^[9] Internet users consider local language digital content to be more reliable than English

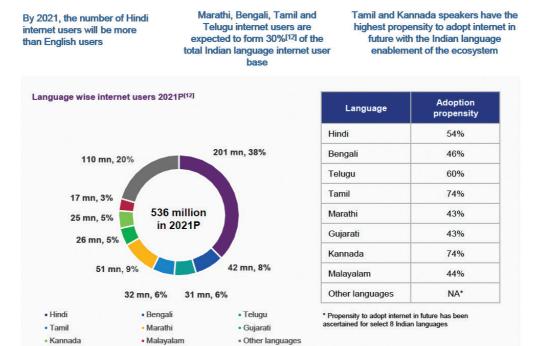
Currently, Tamil (42%[9]) has the highest internet adoption levels followed by Hindi and Kannada among the Indian language users



[&]quot;எங்கள் வாழ்வும், எங்கள் வளமும் மங்காத தமிழென்று சங்கே முழங்கு" – புரட்சி கவி.



As per study, by 2021, 74% of people in India will access internet using Tamil and it will be in the top usage of Internet in India.



These statistical data will be useful to improve internet services in Tamil.

18.3 Search Engines in Tamil

The "Search Engines" are used to search any information from the cyber space. Although there are many search engines, but only a few of them are frequently in use. In the top ten search engines, Google, Bing and Yahoo take first three places respectively. Google and Bing provide searching facilities in Tamil, which means you can search everything through Tamil. The Google search engine gives you an inbuilt Tamil virtual keyboard.



Figure 18.1(a) Google Search Engine (India)



Figure 18.1(b) Google Search Engine (Singapore)

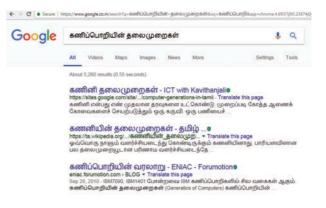


Figure 18.2 Searching in Tamil

18.4 e – Governance:

Getting Government services through internet is known as e-Governance. Govt. of Tamilnadu has been giving its services through Internet. One can communicate with Govt. of Tamilnadu from any corner of the World. One can get important announcements, government orders, and government welfare schemes from the web portal of Govt. of. Tamilnadu.



Figure 18.3 Official Website of Govt. of Tamilnadu

E-Governance through Tamil	Web Address
Official Website of Govt. of Tamilnadu	http://www.tn.gov.in/ta
Department of Agricultural Engineering	http://www.aed.tn.gov.in/
Department of Environment	http://www.environment.tn.nic.in/
Directorate of Govt. Examinations	http://www.dge.tn.nic.in/
Tamilnadu Health Department	http://www.tnhealth.org/
Tamilnadu Micro, Small and Medium Enterprises Department	http://www.msmeonline.tn.gov.in/
Rural Development and Panchayat Raj Department	http://www.tnrd.gov.in/
Backward, Most Backward and Minorities Welfare Department	http://www.bcmbcmw.tn.gov.in/
Tamilnadu Forest Department	https://www.forests.tn.gov.in/
Hindu Religious and Charitable Endowments Department.	http://www.tnhrce.org/
Tamil Nadu Public Service Commission (TNPSC)	http://www.tnpsc.gov.in/tamilversion/index.
Official Website of Govt. of Srilanka	https://www.gov.lk/index.php

Outside India, Government of Srilanka provides all their services through the official website in Tamil.

18.5 e-Library

E-Libraries are portal or website of collection of e-books. Tamil e-Library

services provide thousands of Tamil Books as ebooks mostly at free of cost. It is the most useful service to Tamil people who live far away from their home land.



Tamil e-Library	Website address
Tamilnadu School Education	
and Teacher Education Training	http://www.textbooksonline.tn.nic.in/
Textbooks and Resource Books	
Tamil Virtual Academy	http://www.tamilvu.org/library/libindex.htm
Connemara Public Library	http://connemarapubliclibrarychennai.com/
Conneniara Fublic Library	Veettukku_oru_noolagam/index.html
Tamil Digital Library	http://tamildigitallibrary.in/
Chennai Library	http://www.chennailibrary.com/
Thomizhagam	http://www.thamizhagam.net/parithi/
Thamizhagam	parithi.html
Draiget Madurai	http://www.projectmadurai.org/pmworks.
Project Madurai	html
Old Rooks and Manuscripts	http://www.tamilheritage.org/old/text/
Old Books and Manuscripts	ebook/ebook.html
Noolaham	http://www.noolaham.org/wiki/index.php/
Anna Centenary Libraray	http://www.annacentenarylibrary.org/

18.6 Tamil Typing and Interface software

Tamil is mostly used to type documents in word processors and search information on the internet. Typing Tamil using Tamil interface software is a familiar one among the different methods of typing. This is the simplest method of typing Tamil in both Computer and Smart phones.

18.6.1 Familiar Tamil Keyboard Interface:

- NHM Writer, E-Kalappai and Lippikar

 are familiar Tamil keyboard interfaces
 software that is used for Tamil typing
 which works on Tamil Unicode, using phonetics.
- Sellinam and Ponmadal are familiar Tamil keyboard layouts that works on Android operating system in Smart phone using phonetics.



Figure 18.4 eKalappai Opening screen

18.7 Tamil Office Automation Applications

Famous Office automation software like Microsoft Office, Open Office etc., provides complete Tamil interface facility. These softwares are downloadable and installed in your computer. After installation, your office automation software environment will completely change to Tamil. Menu bars, names of icons, dialog boxes will be shown in Tamil. Moreover, you can save files with Tamil names and create folders with Tamil names.





Figure 18.5 Libra Office Writer Environments in Tamil

Apart from that Tamil Libra Office, Tamil Open Office, Azhagi Unicode Editor, Ponmozhi, Menthamiz, Kamban, Vani are office automation software working exclusively for Tamil. You can use these applications to work completely in Tamil.

18.8 Tamil Translation Applications

Thamizpori (தமிழ்பொறி) is a Tamil tranlation application having more than 30000 Tamil words equalent to English words. Using this application, we can translate small english sentences into Tamil. Google also gives an online translation facility.

18.9 Tamil Programming Language

Programming languages to develop software in computers and smart phones are available only in English. Based on Python programming language, the first Tamil programming language "Ezhil" (எழில்) is designed.

18.10 Tamil Information Interchange Coding Systems

TSCII (Tamil Script Code for Information Interchange)

Computers handle data and information as binary system. Computers use ASCII encoding system to handle data and information. The ASCII encoding system is applicable only for handling English language. Therefore, TSCII (Tamil Script Code for Information Interchange) is the first coding system to handle our

Tamil language. This encoding scheme was registered in IANA (Internet Assigned Numbers Authority) a unit of ICANN. ISCII (Indian Script Code for Information Interchange)

This is one of the encoding schemes specially designed for Indian languages including Tamil. It was unified with Unicode. **Unicode:**

Unicode is an encoding system, designed to handle various world languages, including Tamil. Its first version 1.0.0 was introduced in October 1991. Unicode is the best suitable to handle Tamil.

18.11 Tamil Operating System

An operating system is needed to access electronic systems such as computer and smart phone. Microsoft Windows is very popular operating system for personal computers. Linux is another popular open source operating system. Operating systems are used to access a computer easily. An operating system should be easy to work and its environment should be in an understandable form. Thus, all operating systems used in computers and smart phones are offered in Tamil environment.

Windows Tamil Environment interface should be downloaded and installed from the internet. It displays all window elements such as Taskbar, desktop elements, names of icons, commands in Tamil.

18.12 Organisation and projects to develop Tamil

Tamil Virtual Academy:

With the objectives of spreading Tamil to the entire world through internet, Tamil Virtual University was established on 17th February 2001 by the Govt. of

Tamilnadu. Now, this organisation functions with the name of "Tamil Virtual Academy". It offers different courses in Tamil language, Culture, heritage etc., from kindergarten to

Website: http://www.tamilvu.org/index.php Tamil Language Council, Singapore

With the objectives of promoting the awareness and greater use of Tamil among the Singaporeans, in வளர்தமிழ் இயக்கம் 2001 the council of Tamil

under graduation level.



Language was formed by the ministry of Information Communications and Arts, Govt. of Singapore. The council is called as "வளர்தமிழ் இயக்கம்".

Website: http://tamil.org.sg/ta

Madurai Project

Project Madurai is an open and voluntary initiative to collect and publish free electronic editions of ancient tamil literary classics. This means either typing-in or scanning old books and archiving the text is one of the most readily accessible formats for use on all popular computer platforms.

Since its launch in 1998, Project Madurai etexts released are in Tamil script form as per TSCII encoding. Since 2004 we have started releasing etexts in Tamil unicode as well.

Web Site: http://www.projectmadurai.org/

Tamil Wikipedia:

Wikipedia is a open encyclopedia where any person can write an article about any subject. There are more than One lakh articles in Tamil Wikipedia.

Web Site: https://ta.wikipedia.org/

In order to make Tamil as a living language, it is the duty of every Tamilian to actively use Tamil in the development of technology.

Points to Remember:

- Tamil topped the list of the most widely used regional languages in India by the end of 2016, among 42% are using the Internet.
- Google and Bing provide searching facilities in Tamil.
- Getting Government services through internet is known as e-Governance.
- Tamil e-Library services provide thousands of Tamil Books as ebooks mostly at free of
- Thamizpori (தமிழ்பொறி) is a Tamil tranlation application having more than 30000 Tamil words equalent to English words.
- The first Tamil programming language is "Ezhil" (எழில்)
- Unicode is an encoding system, designed to handle various world languages, including
- Windows Tamil Environment interface should be downloading and install from internet.

Evaluation

Very Short Answers

- 1. List the search engines supported by Tamil language.
- 2. What are the keyboard layouts used in Android?
- 3. Write a short note about Tamil Programming Language.
- 4. What is TSCII?

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5. Write a short note on Tamil Virtual Academy.



COMPUTER APPLICATION

(11)

Practical Programs – Hand Book

Instructions:

- 1. One exercise from **Writer, Calc** and **CSS,** Three exercises from **HTML**, and Four exercises from **JavaScript** are to be practiced in the practical classes.
- 2. Ansewer to any one question from Practical Book with internal choice
- 3. Distribution of Marks

I. Internal Assessment: 5 Marks	
Record Book	5 Marks
II. External Assessment: 15 Marks	
(a) Writer or Calc – Procedure HTML or CSS or JavaScript – Coding	10 Marks
(b) Execution & Output	5 Marks
Total	20 Marks

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5	CA5	HTML – Nested List
6	CA6	CSS – Formatting Webpage
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8	CA8	JavaScript – Multiplication Table
9	CA9	JavaScript – Display Weekdays in Words
10	CA10	JavaScript – Login Form

CA1 - FORMATTING INVOICE

Type the following Invoice in OpenOffice Writer and apply the formatting features as given below:

Invoice

SAIRAM MEDICAL STORES

Mobile No : 9002416000 P.B.No: 617

Mail Address: sairam@gmail.com 70, New Avadi Road,

Chennai 600 010.

No: 70/162

M/s. Eswari Medical Stores, 23rd Nov 2017

No: 72, N.S.C. Bose Road, Puduchery - 6210110

Quantity (Nos)	Particulars	Rate	Amount
20	Johnson Baby Powder	25	500
10	Nestle Milk Powder	100	1000
5 Wood Wards Gripe Water		70	350
	Total		
	Add: GST @ 3%		
	Net Payable		

For Sriram Medical Stores

Sales Manager

• Use formula to calculate Total and Net Payable

Procedure

- **Step-1.** OpenOffice Writer and choose Text document or $File \rightarrow New \rightarrow Text$ **Document.**
- **Step-2.** Type the text and apply the format as per the given format.

Note: Select the required text before formatting.

Text	Format	Method
INVOICE	Center and apply red	Ctrl + E and choose Red color from font color pallete or any method.
SAIRAM MEDICAL STORES	Center and apply blue	Ctrl + E and Blue color from font color pallete or any method.
Eswari Medical Stores	Bold	Ctrl + B or any method.



- **Step-3** Create a table using any one of the method **Ctrl** + **F12** or **Insert** \rightarrow **Table** or **Table** or **Insert** \rightarrow **Table** or **Insert Table** icon from toolbar. with 4 columns and 7 rows
 - **Step-4.** Enter the data as per the given format.
 - **Step-5.** Select first three columns in 5th Row and **Right Click** \rightarrow **Cell** \rightarrow **Merge** and type as "Total"
 - **Step-6.** Repeat Step-5 for 7th Row, and type as "Net payable"
 - **Step-7.** To find the Total, Enter the following formula at Total \rightarrow Amount Column as =<D2>+<D3>+<D4> OR = Sum (<D2:D4>)
 - **Step-8.** To find the GST @ 3% Enter the formula as = <B5> *0.03
 - **Step-9.** To calculate Netpayable amount, Enter the formula as =<B5>+<D6>

Invoice

SAIRAM MEDICAL STORES

Mobile No : 9002416000 P.B.No: 617

Mail Address: sairam@gmail.com
70, New Avadi Road,
Chennai 600 010.

No: 70/162

M/s. **Eswari Medical Stores,** 23rd Nov 2017

No: 72, N.S.C. Bose Road, Puduchery - 6210110

Quantity (Nos)	Particulars	Rate	Amount
20	20 Johnson Baby Powder		500
10	Nestle Milk Powder	100	1000
5	Wood Wards Gripe Water	70	350
Total			1850
Add: GST @ 3%		55.5	
Net Payable			1905.5

For Sriram Medical Stores

Sales Manager

CA2 - INTEREST CALCULATION

CR-2 Create statement of interest using OpenOffice Calc with the following particulars:

Sara Ltd., sells goods. Their policy is to charge interest @ 2% p.a., for the number of days. From the following data, find out the amount to be collected from each customer. Assume 365 days in the year.

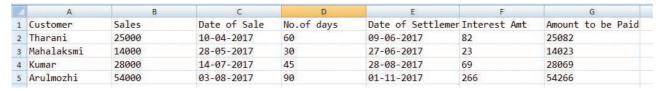


Customer	Sales	Date of Sale	NO. of days	Date of settlement
Tharani	25000	10/04/2017	60	
Mahalakshmi	14000	28/05/2017	30	
Kumar	28000	14/07/2017	45	
Arulmozhi	54000	03/08/2017	90	

Procedure

- Step -1. Open OpenOffice Calc and choose Spreadsheet or File \rightarrow New \rightarrow Spreadsheet.
- Step -2. Type the Headings in cell **A1 to E1** (*Customer, Sales, Date of Sale, Number of days and Date of settlement*) as per the given data.
- Step -3. In cell **F1** and **G1** type (*Interest Amt* and *Amount to be paid*) respectively.
- Step -4. In cell **E2** enter the formula = C2 + D2 to arrive the date of settlement and to the remaining cells (**E2** to **E5**). Use Edit \rightarrow Fill \rightarrow Down command
- Step -5. In cell F2 enter the formula =ROUND((B2*2/100)*D2/365) to arrive the Interest amount to the remaining cells (F2 to F5). Use Edit \rightarrow Fill \rightarrow Down command
- Step -6. In cell **G2** enter the formula = B2 + F2 to arrive the Amount to be paid to the remaining cells (**G2** to **G5**). Use Edit \rightarrow Fill \rightarrow Down command

Output



CA3 - FORM DESIGN

CA-3 Write an HTML code to design a form like the one shown below.





Coding

```
<html>
<head>
<title> User Registration </title>
</head>
<body>
<h1 align = center> Registration Form </h1>
<form id=reg_form method = post action = " ">
User Name: <input type = text name=uname > <br><br>
Password: <input type = password name=pword1 > <br><br></
Re-type Password: <input type = password name=pword2 > <br><br></ri>
Gender:
<input type = radio name=male value="M" > Male
<input type = radio name=female value="F" > Female
<h2 align=center> Additional Information </h2>
Optional Subject:
<select name=subj>
      <option value = CT> Computer Technology
      <option value = Paint> Painting
      <option value = SG> Sports and Games
</select>
<br>><br>>
<input type = checkbox name=mail > Put me on mail list <br> <br/> <br/>
<input type = reset value=Reset >
<input type = submit value=Submit >
</form>
</body>
</html>
```

Output





CA4 - HEIGHT AND WEIGHT TABLE

(

CA-4 Write an HTML code to display the following.

Height and Weight

Name	Class	Height	Weight
Mani	XII - G	5'0"	45
Vasu	XI - H	5'4"	49
Murali	XI - B	5'1"	51
Pallavai	XII - D	4'5"	50

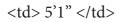
Coding

- <html>
- <head>
- <title> Height and Weight Table </title>
- <head>
- <body>
- <caption> Height and Weight </caption>
- Name
- Class
- Height
- Weight

- Mani
- <td> XII G </td>
- 5'0"
- 45

- Vasu
- XI H
- 5'4"
- 49

- Murali
- XI B



51

Pallavai

<td>> XII - D </td>

4'5"

50

</body>

</html>

Output

Height and Weight			
Name	Class	Height	Weight
Mani	XII - G	5'0"	45
Vasu	XI - H	5'4"	49
Murali	XI - B	5'1"	51
Pallavai	XII - D	4'5"	50

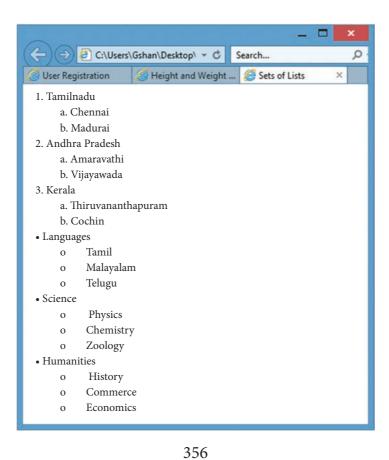
CA5 - NESTED LIST

CA-5 Write an HTML code to create a webpage to display the following sets of lists:

1. Tamilnadu a. Chennai b. Madurai	Languages o Tamil o Malayalam o Telugu
2. Andhra Pradesh a. Amaravathi b. Vijayawada	Science o Physics o Chemistry o Zoology
3. Kerala a. Thiruvananthapuram b. Cochin	Humanities O History O Commerce O Economics



Coding	
County	
<html> <head> <title> Sets of Lists </title> </head> <body> Tamilnadu <ol type="a"> Chennai Madurai Andhra Pradesh <ol type="a"> Amaravathi Vijayawada Kerala <ol type="a"> Thiruvananthapuram</body></html>	 Languages <ul type="circle"> Tamil Malayalam Telugu Science <ul type="circle"> Chemistry Zoology Humanities <ul type="circle"> History Commerce Economics
 Cochin	





CA6 - FORMATTING WEBPAGE

CA-6 Create a webpage as given description using CSS

Tamil

Tamil is a Dravidian language predominantly spoken by the Tamil people of India and Sri Lanka, and by the Tamil diaspora, Sri Lankan Moors, Burghers, Douglas, and Chindians. Tamil is an official language of two countries: Sri Lanka and Singapore.

It has official status in the Indian state of Tamil Nadu and the Indian Union Territory of Puducherry. It is used as one of the languages of education in Malaysia, along with English, Malay and Mandarin.

Tamil is spoken by significant minorities in the four other South Indian states of Kerala, Karnataka, Andhra Pradesh and Telangana and the Union Territory of the Andaman and Nicobar Islands. It is one of the 22 scheduled languages of India.

Description:

Element	Font	Style	Alignment	Color
H1	Arial Black	-	Center	Border 2px solid blue
P1	Century	Bold	-	Red
P2	Boockman Old Style	Italic	-	Blue
Р3	Century Gothic	-	-	Green

Note: Create two files. 1. Mystyle.css and 2. CA6.html

```
color : Red;
Coding -1
Mystyle.css
                                                  P2
H1
                                                  font-family: "Bookman Old Style";
                                                  font-style: Italic;
 font-family: "Arial Black";
                                                  color: Blue;
 text-align:center;
 border: 2px solid blue;
                                                  P3
}
P1
                                                  font-family: "Century Gothic";
                                                  color : Green;
font-family: "Century";
font-style: Bold;
```

Computer Application Practical.indd 357 3/20/2020 4:36:19 PM

Coding -2

CA6.html

<html>

<head>

<title> Tamil </title>

rel="stylesheet" type="text/css"
href="mystyle.css">

</head>

<body>

<H1> Tamil </H1>

<P1>

Tamil is a Dravidian language predominantly spoken

by the Tamil people of India and Sri Lanka, and by the

Tamil diaspora, Sri Lankan Moors, Burghers, Douglas,

and Chindians. Tamil is an official language of two countries:

Sri Lanka and Singapore.

</P1>
> <P2>

It has official status in the Indian state of Tamil Nadu

and the Indian Union Territory of Puducherry.

It is used as one of the languages of education in Malaysia,

along with English, Malay and Mandarin.

</P2>
 <P3>

Tamil is spoken by significant minorities in the four other

South Indian states of Kerala, Karnataka, Andhra Pradesh

and Telangana and the Union Territory of the Andaman and

Nicobar Islands. It is one of the 22 scheduled languages of

India.

</P3>

</body>

</html>

Output



Tamil is a Dravidian language predominantly sopken by the Tamil people of India and SriLankan Moors, Burghers, Douglas, and Chindians. Tamil is an official language of two countries: Sri Lanka and Singapore.

It has official status in the Indian state of Tamil Nadu and the Indian Union Territory of Puducherry. It is used as one of the languages of educatiooon in Malaysia, along with English, Malay and Mandarin.

Tamil is spoken by significant minorities in the four other south Indian states of Kerala, Karnataka, Andhra Pradesh and Telangana and the Union Territory of the andaman and Nicobar Islands. It is one of the 22 scheduled languages of India.

CA7 - DISPLAY TEXT

CA-7 Create a webpage using JavaScript to display the following text.

Welcome to JavaScript
State Council of Educational Research and Training (SCERT),
Tamilnadu, Chennai.

Coding

```
<html>
<head>
<title> Display text using JavaScript </title>
</head>
<body align=center>

<script>
document.write ("<h1 align=center>Welcome to JavaScript <br>");
document.write ("State Council of Educational Research and Training (SCERT),<br>");
document.write ("Tamilnadu, Chennai. </h1>");
```

</script>

</body>

</html>

Output



CA8 - MULTIPLICATION TABLE

CA-8 Create a webpage using JavaScript to display multiplication table by prompting number of rows and columns.

Coding

<html>

<head>

<title>Multiplication Table</title>

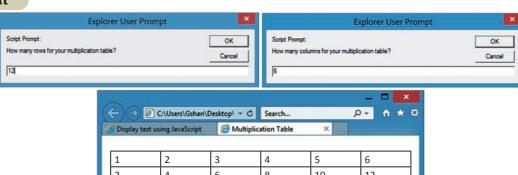
<script type="text/javascript">

var rows = prompt("How many rows for your multiplication table?");

var cols = prompt("How many columns for your multiplication table?");



```
if(rows == "" || rows == null)
                                                    output = output + "" + i*j + "</
       rows = 10;
                                               td>":
  if(cols== "" || cols== null)
                                                       j = j+1;
       cols = 10;
  createTable(rows, cols);
                                                       output = output + "";
  function createTable(rows, cols)
                                                       j = 1;
                                                  output = output + "";
   var j=1;
                                                  document.write(output);
var output ="<table border='1' width='500'
cellspacing='0'cellpadding='5'>";
   for(i=1;i \le rows;i++)
                                                 </script>
                                                </head>
   output = output + "";
                                                <body>
    while(j<=cols)
                                                </body>
                                                </html>
```



CA9 - DISPLAY WEEKDAYS IN WORDS

CA-9 Create a webpage using JavaScript to display Weekday in words by getting input as a number using switch.

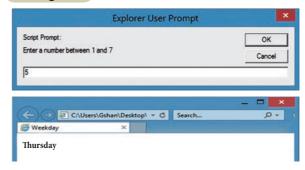
```
Coding
<html>
<head>
<title> Weekday </title>
<script type="text/javascript">
var n=prompt("Enter a number between 1 and 7");
switch (n)

{
    case (n="1"):
    document.write("Sunday");
    break;
    case (n="2"):
    document.write("Monday");
    break;
    case (n="3"):
```



```
document.write("Tuesday");
break;
case (n="4"):
document.write("Wednesday");
break;
case (n="5"):
document.write("Thursday");
break;
case (n="6"):
document.write("Friday");
break;
case (n="7"):
document.write("Saturday");
break;
default:
document.write("Invalid Weekday");
```

```
break;
}
</script>
</head>
</html>
```



CA10 - LOGIN FORM

CA-10 Create a Form using JavaScript to get username, password and address, validate the inputs.

Coding

```
<html>
<head>
<script type="text/javascript">
function sub()
if(document.getElementById("t1").
value == "")
alert("Please enter your name");
else if(document.getElementById("t2").
value == "")
alert("Please enter a password");
else if(document.getElementById("t2").
value != document.getElementById("t3").
value)
alert("Please enter correct password");
else if(document.getElementById("t4").
value == "")
alert("Please enter your address");
alert("Form has been submitted");
</script>
</head>
<body>
<form>
```

```
User Name:<input type="text"
id="t1"><br><br>
Password:<input type="text"
id="t2"><br><br>
Confirm Password:<input type="text"
id="t3"><br><br>
Address:<textarea rows="2" cols="25"
id="t4"></textarea><br><br>
<input type="button" value="Submit" on-
click="sub()">
<input type="reset" value="Clear All">
</form>
</body>
</html>
```

Output







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