Focus Area

Computer Application

Short Note – All chapters

1. Review of C++

- **Tokens**
- **Data Types**
- **Control Statements**
- **Simple program**

Tokens

Basic building block of C++ language / Word in C++ Language

There are five types of tokens

- Keywords
- Identifiers
- Literals
- Punctuators
- Operators

Keywords

Reserved words

Identifiers

User defined names

Literals(Constants)

Tokens that do not change their value.

Punctuators

Used for the perfection of syntax/Separating tokens

Operators

Symbols for representing an operation

Types of Literals(Constants)

Integer	Eg: 123,-45,1500
Floating point	Eg: 2.5, 0.0012, 25.3455,-34.6
Character	Eg: 'a', '6', '+'
String	Eg: “a”, “anil”, “123”

Operators

- Arithmetic operators +,-,*,/,%
- Relational operators <,>,<=,>=,==,!=
- Logical operators !,&&,||
- Increment/Decrement ++,--
- Assignment operator =
- Arithmetic Assignment +=,-=,*=,/=,%=
- Input/Output operators >>,<<
- Conditional operator (Ternary operator) ?:

Data types

To identify the type of data and associated operations

Three types

- Fundamental
- User defined
- Derived

Fundamental Data types

- int
- float
- double
- char
- void

Data type void represents an empty set of data and hence its size is zero.

Control Statements

Used for changing sequential flow of execution

Selection/Decision

Executing some statements based on a condition

- if statements (Simple if,if..else, elseif ladder, Nested if)
- switch statement

Loop/Iterative

Executing some statements repeatedly based on a condition

- while
- for
- do..while

If statements

Simple if

```
if (mark>=30)
 {
        cout<<”passed”;
  }
```

if..else

```
if (mark>=30)
    {
          cout<<”passed”;
     }
 else
    {
        cout<<”failed”;
     }
```

Nested if

```
if(attend>=80)
{
   if (mark>=30)
             cout<<”passed”;
 }
```

elseif ladder

```
if (n==1)
      cout<<”one”;
       else if(n==2)
              cout<<”two”;
               else if(n==3)
                     cout<<”three”;
                      else
                          cout<<”invalid”;
```

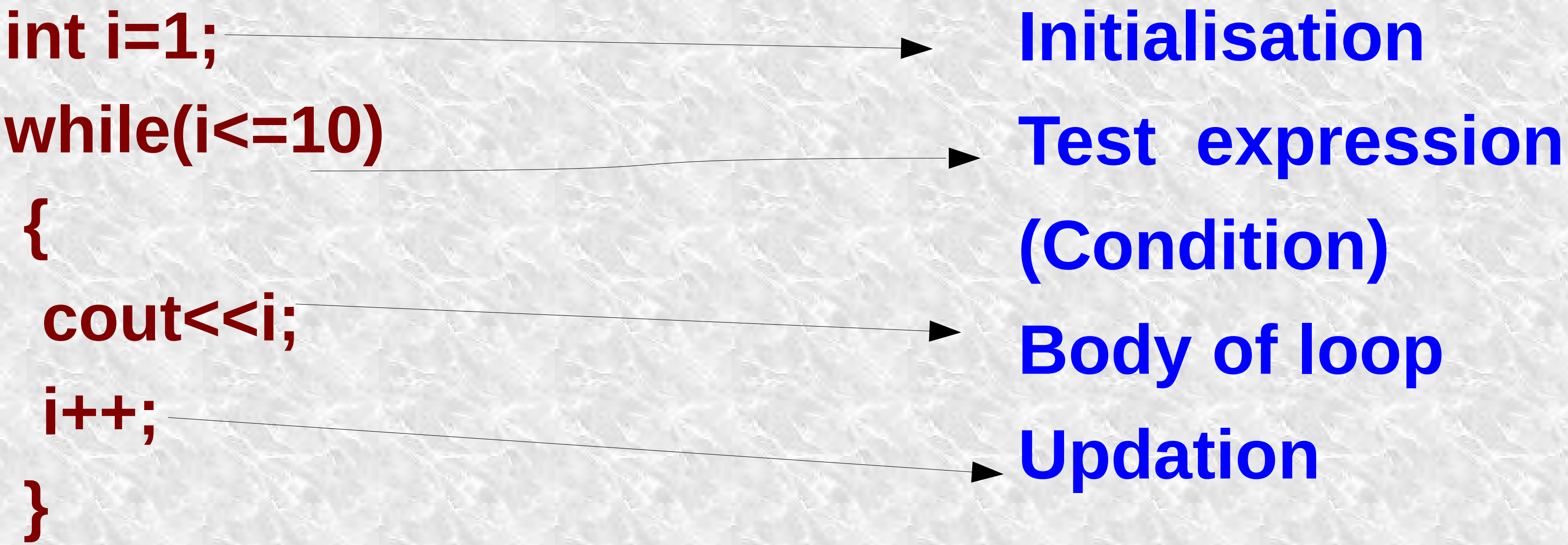
switch statement

Is a multi branching statement

```
if (n==1)
        cout<<”one”;
         else if(n==2)
                  cout<<”two”;
                   else if(n==3)
                            cout<<”three”;
                             else
                                  cout<<”invalid”;
```

```
switch(n)
{
  case 1:
       cout<<”one”;
       break;
case2:
       cout<<”two”;
       break;
case 3:
       cout<<”three”;
       break;
default:
       cout<<”invalid”
       }
```

Components of Loop



```
int i=1;
while(i<=10)
 {
  cout<<i;
  i++;
 }
```

Initialisation

Test expression

(Condition)

Body of loop

Updation

Three Loops

while

```
int i=1;
while(i<=10)
 {
  cout<<i;
  i++;
 }
```

do..while

```
int i=1;
do
 {
  cout<<i;
  i++;
 }while(i<=10)
```

for

```
for(int i=1;i<=10;i++)
{
  cout<<i;
}
```

Simple Program

```
#include<iostream>
using namespace std;
int main()
{
 int n1,n2,s;
 cin>>n1>>n2;
 s=n1+n2;
 cout<<s;
}
```

3. Arrays

- Syntax to declare array
- Accessing of elements
- String handling
- Input Output Functions to handle strings

Array

Array is collection of same type of elements.
Elements are stored in contiguous memory locations.

Declaring arrays

Syntax

Data Type ArrayName[Size];

Eg:

```
int a[10];
float avg[50];
char name[25];
short age[65];
```

Accessing Array Elements

```
int a[5]={10,20,30,40,50};
```

a[0]	a[1]	a[2]	a[3]	a[4]
10	20	30	40	50

Position of an array element is represented using index/subscript.
Array index starts from 0 and ends at size-1
The element is specified by the array name with the subscript/index.

```
a[0]; ----> 10
a[1]; ----> 20
a[2]; ----> 30
a[3]; ----> 40
a[4]; ----> 50
```

Array elements can be accessed and displayed using a loop as shown below

```
int a[5],i;
for(i=0;i<5;i++)
    {
      cin>>a[i];
    }
for(i=0;i<5;i++)
   {
     cout<<a[i];
   }
```

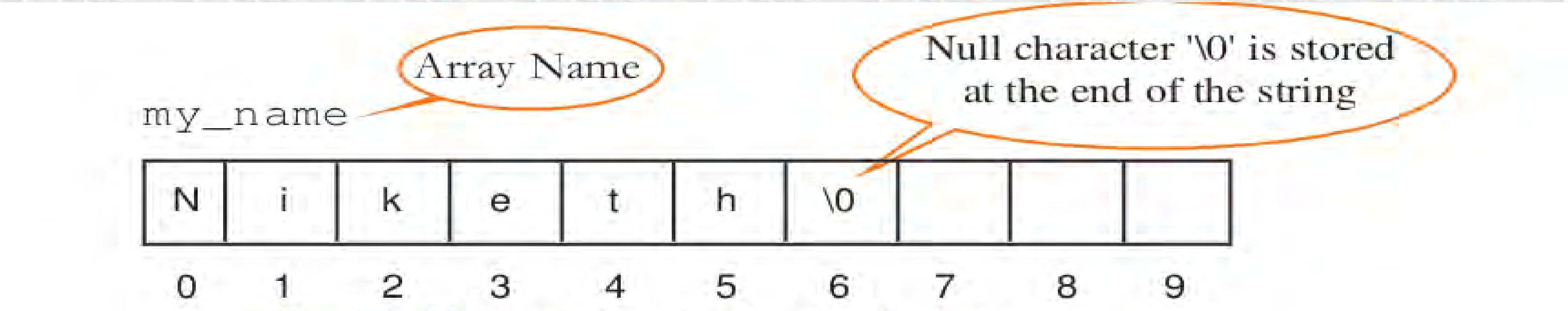
String Handling

Group of characters or Character Array

char name[25] ;

Then name can store 25 characters (string)

Every string is terminated by null character('\0')



Null character '\0' is stored at the end of the string

Fig. 2.4 : Memory allocation for the character array

Input / Output operations on strings

```
#include<iostream>
using namespace std;
int main()
   {
     char nam[25];
     cin>>name;
     cout<<name;
    }
```

anil kumar

anil

cin>>name can't accept a string with white space

gets() , puts()

```
#include<cstdio>
using namespace std;
int main()
  {
       char nam[25];
       gets(name);
       puts(name);
   }
```

gets() for reading a string
puts() for displaying a string
Both are defined in <cstdio>

```
anil kumar
anil kumar
```

gets() can accept a string with white space

3. Functions

- **Built in Functions(Name and Use Only)**
- **Call by Value and Call by reference**

Function is a named unit of statements in a program to perform a specific task

Predefined/Built-in Function	User Defined Function
Ready to use functions defined in header file	Functions defined by the programmer based on his task

Types of Predefined Functions

- Console Functions
- Stream Functions
- String Functions
- Mathematical Function
- Character Functions

Console Functions

defined in <cstdio>

Function	Use
getchar()	To read character
putchar()	To display a character

Stream Functions

defined in <iostream>

Functions	Use
get()	To read character/string
getline()	To read a string
put()	To display a character
write()	To display a string

String Functions

defined in <cstring>

Functions	Use
strlen()	To find length of a string
strcpy()	To copy one string to another
strcat()	To add one string to the end of another
strcmp()	To compare two strings
strcmpi()	To compare two strings by ignoring case

Mathematical Functions

defined in <cmath>

Functions	Use
abs()	To find absolute value of a integer number
fabs()	To find absolute value of a floating point number
sqrt()	To find square root of a number
pow()	To find power of a number

Character Functions

defined in <cctype>

Functions	Use
isupper()	To check whether a character is upper case or not
islower()	To check whether a character is lower case or not
isalpha()	To check whether a character is alphabet or not
isdigit()	To check whether a character is digit or not
isalnum()	To check whether a character is alphanumeric or not
toupper()	To convert a given character to uppercase
tolower()	To convert a given character to lowercase

Methods of calling functions

(Argumnet Passing Methods)

Call by Value	Call by Reference
Copy of the actual argument is passed.	Reference (Address)of the actual argument is passed
Actual and formal arguments are stored in different memory	Actual and formal arguments are stored in same memory
Changes in formal argument will not reflect on actual arguments	Changes in formal argument will reflect on actual arguments

4. Web Technology

- Static and Dynamic Web Page
- Client and Server side script
- Structure of HTML Code
- Container and empty tags
- <BODY> tag attributes
- Important tags-<h1> to <h6>,<br>,<p>,<hr>
  Text formating tags,<marquee>,<font>,<img>
  (Only important attributes of above tags)

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Static and Dynamic Web Page

Static web page	Dynamic web page
The content and layout is fixed	The content and layout may change
Never use databases.	Uses database
Easy to develop	More skill needd
Directly runs on browser	Runs on server

Script

Is a program attached with a webpage. Language used for writing script is called scripting language. Two types of scripts- client side and server side

Scripting Languages

• Java Script	- Client side
• VB Script	- Both client and server side
• PHP	- Server side
• ASP	- Server side
• JSP	-Server side

Client and Server side Scripts

Client side script	Server side script
Is executed from browser	Is executed from server
Used for validating data	Used to connect to database and returns result
User can block	User can’t block
Browser dependent	Not browser dependent

Structure of HTML document

```
<HTML>
        <HEAD>
                <TITLE> This is the title of web page </TITLE>
        </HEAD>
        <BODY>
                Hello, Welcome to the world of web pages!
        </BODY>
</HTML>
```

Container tag and Empty tag

- A tag which requires both opening and closing tag is called container tag .

  Eg:-<HTML>,<HEAD>,<BODY>,<B>,<H1>,<OL>......

- A tag which requires only opening tag is called empty tag

  Eg:- <BR>,<HR>,<IMG>,<INPUT>,<FRAME>

A tag is a command written inside ‘<’ and ‘>’
Attribute is the additional information given to a tag.

Attributes of <BODY>

- **bgcolor:- For setting background color**
- **background:- For setting background image**
- **text:- For specifying text color**
- link :- For link color
- alink :- For active link color
- vlink :- For visited link color
- leftmargin:- For setting left margin
- rightmargin:- For setting right margin

Some Important Tags

<HEAD>: To specify head section .
<TITLE>: To specify title of a web page
<BODY>: To specify body section.
<HTML>: To start an HTML document.

Heading Tags

<H1>,<H2>,<H3>,<H4>,<H5>,<H6> are heading tags. Attribute is align.

<BR>

Is an empty tag for line break.

<P>

To define a paragraph. Its attribute is align

<HR>

To draw horizontal line . Attributes:size,color,width

Text Formatting Tags

Tag	Use
<B>,<STRONG>	To make text bold
<I>,<EM>	To make text italics
<U>	To underline
<S>,<STRIKE>	To strike through text
<SMALL>	To decrease size of text
<BIG>	To increase size of text
<SUP>	To set superscript text
<SUB>	To set subscript text
<Q>	To enclose in double quotation
<BLOCKQUOT>	To indent the content

Some more Tags

<MARQUEE>

To display a scrolling text or image in a web page.

Attributes:height,width,direction,bgcolor

<FONT>

To change font size, color and style of a text.

Attributes: size,color,face

<IMG>

Is an empty tag for inserting an image in a web page.

Attributes:src,height,width

Eg:- <img src=”bird.jpg”>

5. Web Designing Using HTML

- Lists in HTML
- <A> tag and Href attribute
- Internal and external linking
- Table related tags
- Listing and use of input controls in form

(Coding questions from simple list and simple tables)

Lists in HTML

Three types of lists:

- Ordered List :- Is a numbered list

  <OL>,<LI> tags are used for creating this list

- Unordered List :- No number for list items

  <UL>,<LI> tags are used for creating this list

- Definition List : List of terms and definitions

  <DL>,<DT>,<DD> tags are used for creating this list

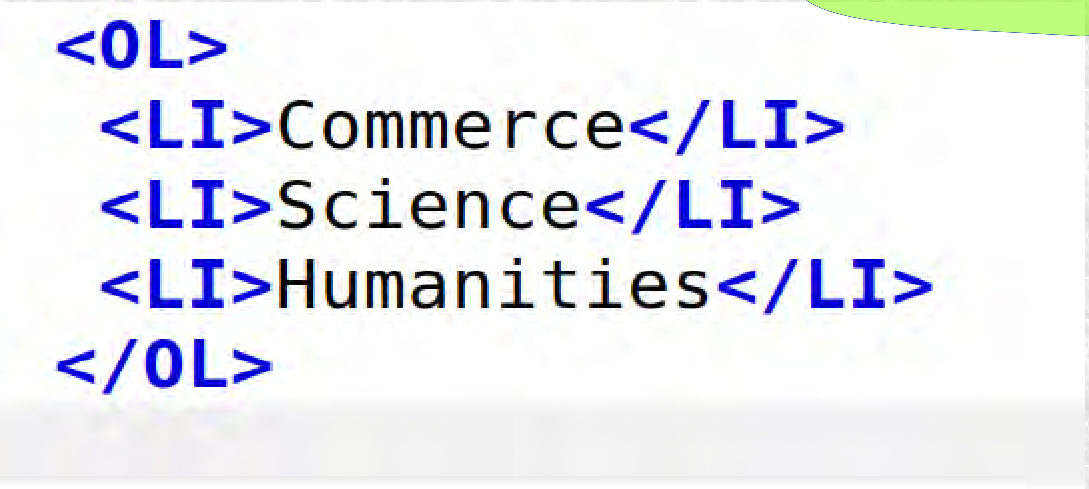
Ordered List

Tags used:<OL> - To define ordered list <LI> - To specify list item

Write HTML code for the following list

1. Commerce
2. Science
3. Humanities

Attributes of <OL> are
Type: To specify numbering type(1,A,a,i,I)
Start: To specify starting number



```
<OL>
 <LI>Commerce</LI>
 <LI>Science</LI>
 <LI>Humanities</LI>
</OL>
```

Unordered List

Tags used:<UL> - To define unordered list <LI> - To specify list item

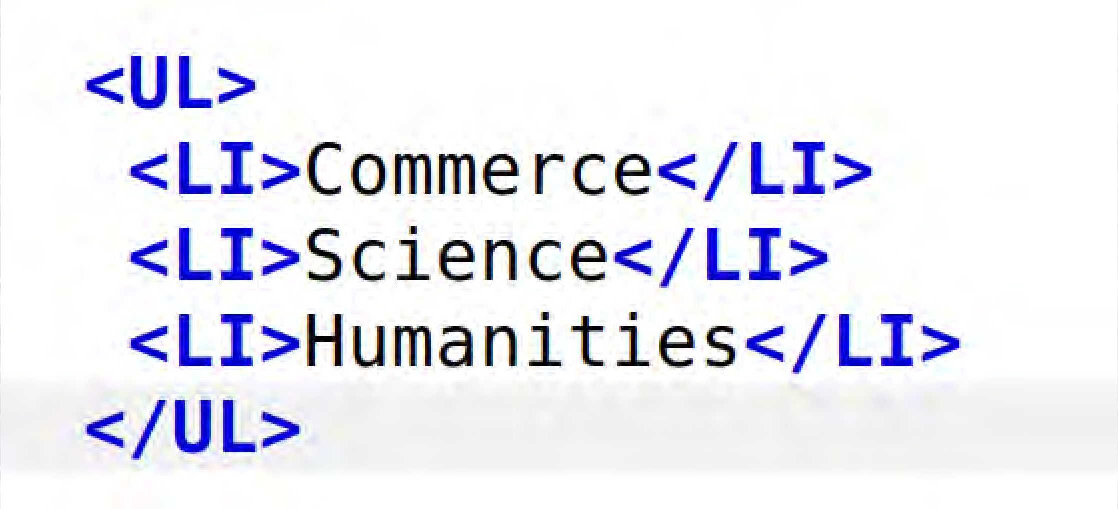
Write HTML code for the following list

.commerce

.Science

. Humanities

Attribute of <UL> is
Type: To specify type of bullet
(Disc,Circle,Square



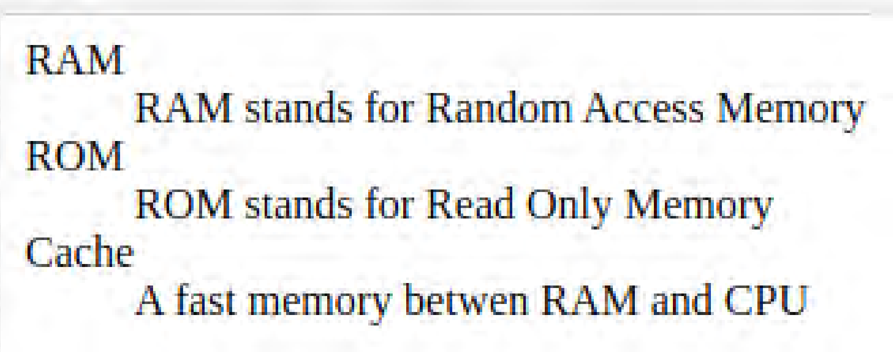
```
<UL>
 <LI>Commerce</LI>
 <LI>Science</LI>
 <LI>Humanities</LI>
</UL>
```

Definition List

Tags used: <DL> - To define definition list

<DT> - To specify definition Term

<DD>- To specify definition description



RAM

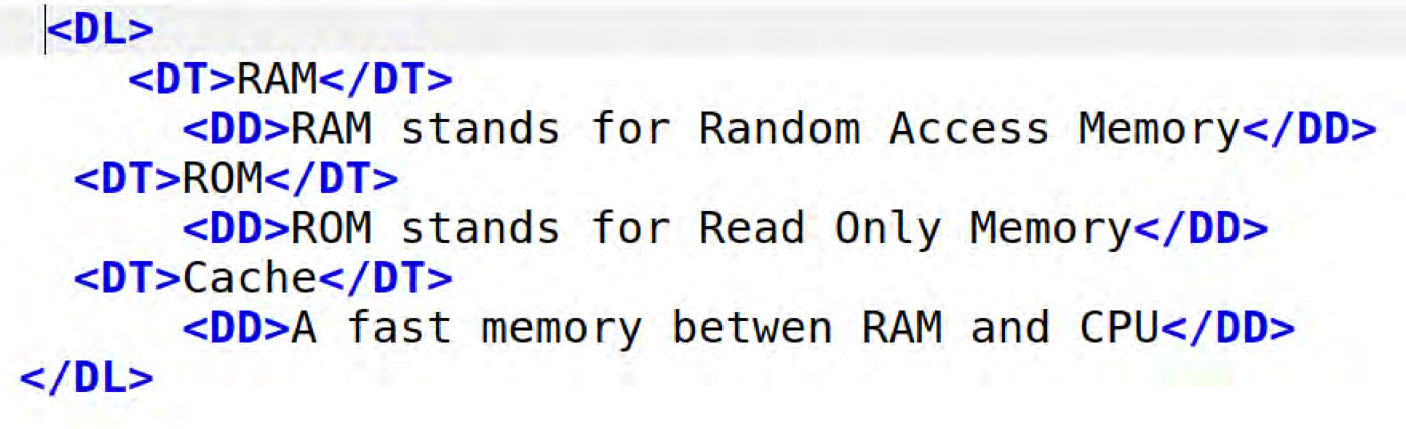
RAM stands for Random Access Memory

ROM

ROM stands for Read Only Memory

Cache

A fast memory betwen RAM and CPU



```
 <DL>
    <DT>RAM</DT>
      <DD>RAM stands for Random Access Memory</DD>
  <DT>ROM</DT>
      <DD>ROM stands for Read Only Memory</DD>
  <DT>Cache</DT>
      <DD>A fast memory betwen RAM and CPU</DD>
</DL>
```

Links in HTML

Hyper link is a text or media which points to another web page or to another section of same web page.

<A> is used for creating a hyper link

HREF is the main attribute of <A> which specifies the file name to be opened when we click on link.

Eg:-<A HREF=”address.html”> Click Me</A>

Two types of link

Internal:- It points to another section of same web page

External:- It points to another web page

Table in HTML

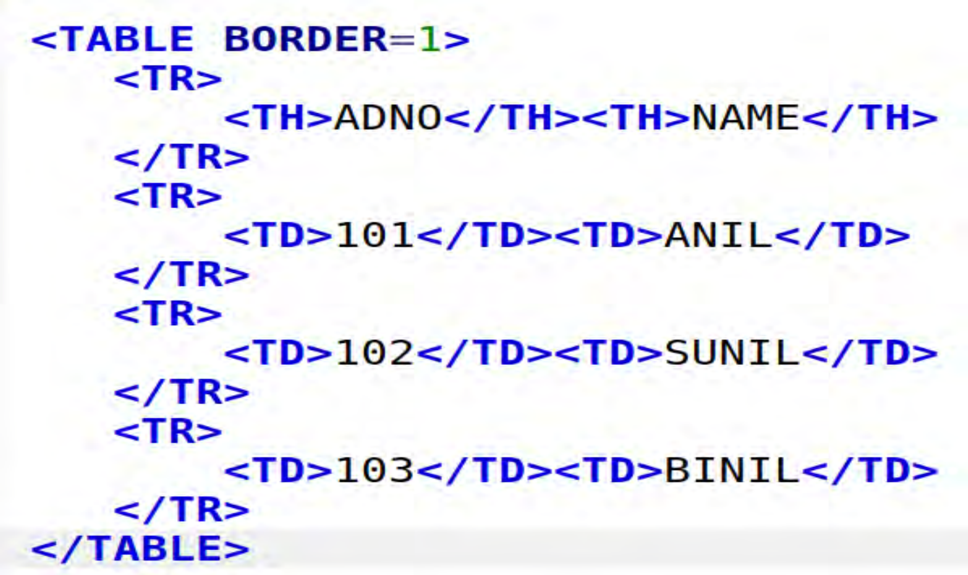
Tags used

- <TABLE>: To define a table
- <TR> : To define a table row
- <TH> : To define a table heading
- <TD>: To define table data

Attributes of <TABLE>
Border,bgcolor,background,height,width

Write HTML code for below table

ADNO	NAME
101	ANIL
102	SUNIL
103	BINIL



```
<TABLE BORDER=1>
    <TR>
        <TH>ADNO</TH><TH>NAME</TH>
    </TR>
    <TR>
        <TD>101</TD><TD>ANIL</TD>
    </TR>
    <TR>
        <TD>102</TD><TD>SUNIL</TD>
    </TR>
    <TR>
        <TD>103</TD><TD>BINIL</TD>
    </TR>
</TABLE>
```

Input Controls in Form

<INPUT> is used for creating different types of controls in a form.

Type attribute of <INPUT> can take the following values

Text	: For textbox
Password	: For password textbox
Checkbox	: For checkbox
Radio	: For radio button(Option button)
Submit	: For submit button
Reset	: For reset button

<TEXTAREA> is used for multiple line text box
<SELECT> is used for select box/drop down list

6. Client side scripting using JavaScript

- <SCRIPT> tag
- Data types
- var keyword
- Operators
- Control statements
- Built in Functions

<SCRIPT>

Used for including JavaScript code in an HTML document.

Language is the main attribute. It can take the value “JavaScript”

```
<SCRIPT Language=”JavaScript>

    .......

</SCRIPT>
```

Data Types in JavaScript

Number   :- For any type of number
String   :- For group of characters
Boolean   :- For True/False value

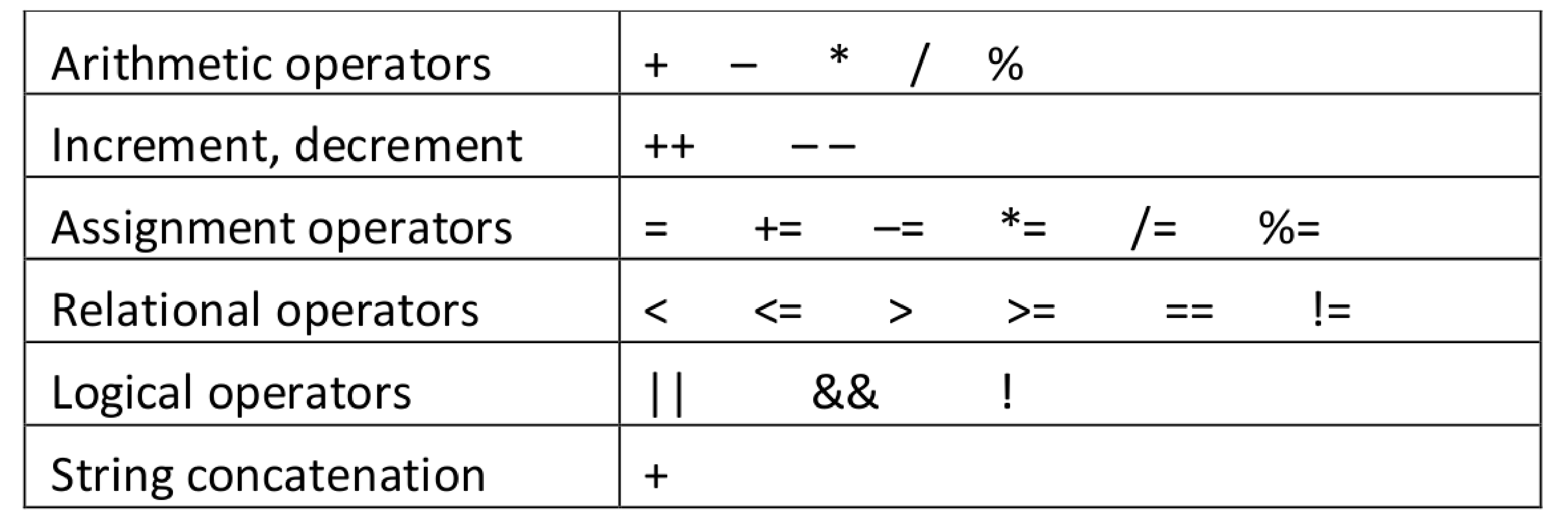
var Keyword

Used for declaring a variable. Variable is used for storing a value.

Example:- var x;

Then x can store any type of value.

Operators



Arithmetic operators	+ – * / %
Increment, decrement	++ – –
Assignment operators	= += –= *= /= %=
Relational operators	< <= > >= == !=
Logical operators	|| && !
String concatenation	+

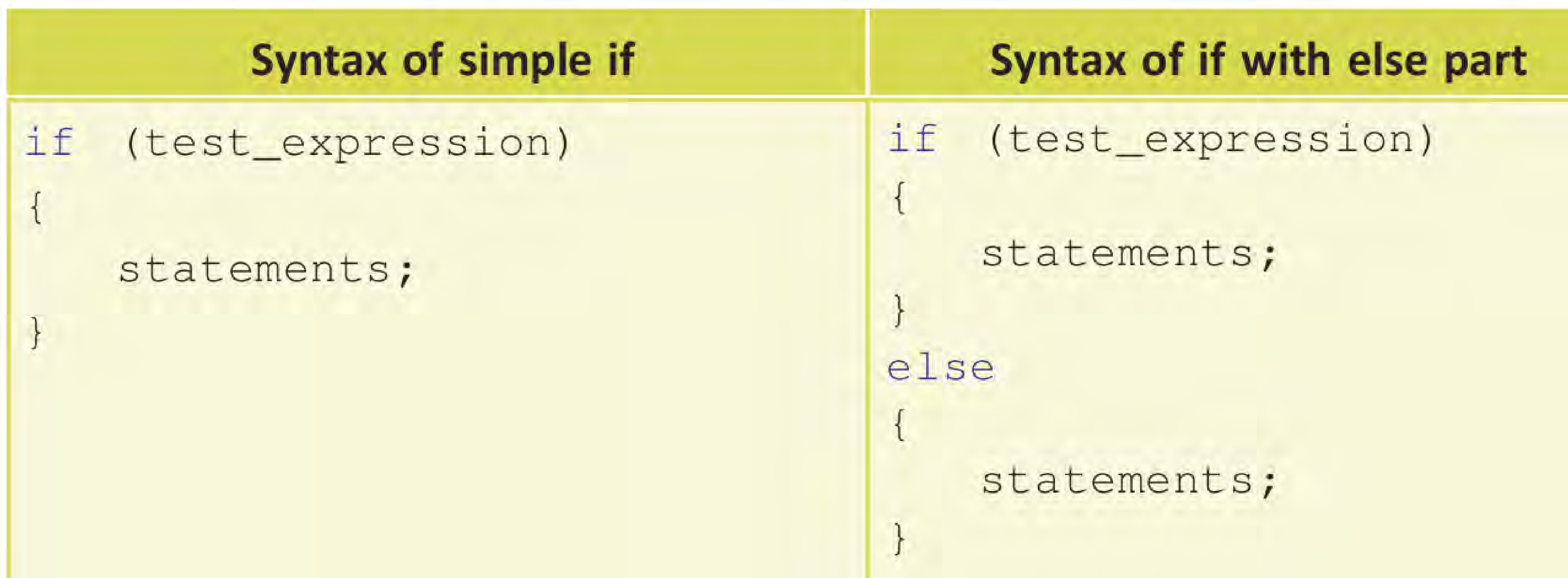
Control Statements

Used to change the sequential flow of execution in a program.

Following are some control statements in JavaScript.

- **if**
- **switch**
- **for**
- **while**

If statements



Syntax of simple if	Syntax of if with else part

if (test_expression)
{
    statements;
}
	if (test_expression)
	{
	    statements;
	}
	else
	{
	    statements;
	}

switch:

is a multi branching statement.

Syntax

```
switch(expression)
{
    case value1:
        statement;
        break;
    case value2:
        statement;
        break;
        ......
    default:
        statement;
}
```

for loop

Used for executing some statements repeatedly.

Syntax

```
for(initialisation;test expression; updation)
{
      body of the loop;
}
```

while loop

Used for executing some statements repeatedly.

Syntax

```
initialisation;
while(text expression)
      {
            Body of loop;
            Updation;
      }
```

Built in Functions

Alert(): Is used for displaying a message.

Example:- alert(“Welcome “)

isNaN() : To to check whether a given value is number or not?

isNaN stands for ***is Not a Number .***

isNaN(“anil”) returns True

isNaN(123) returns False

toUpperCase() : Converts a string in to capital letter

Example: “apple”.toUpperCase() returns APPLE

toLowerCase() : Converts a string in tosmall letter

Example: “APPLE”.toLowerCase() returns apple

charAt(): Gives a character at a position

Example: “WELCOME”.charAt(2) returns L

length property

Displays number of character in a string. “welcome”.length displays 7

7. Web Hosting

- Types of web hosting
- FTP Client software
- Free Hosting

Web Hosting

It is the process of providing storage space in web server for a web site.

There are three types of web hosting

- Shared hosting
- Dedicated hosting
- Virtual private server

Shared Hosting

In thi s type , more than one web sites are stored in a single web server.

Characteristics

Suitable for small web sits.

Cheaper and easy to use

Less service/performance

Dedicated Hosting

In thi s type , single web site is stored in a single web server

Characteristics

Suitable for secure and high performance web sits.

Expensive

More service/fast service

Virtual Private Server(VPS)

A server is virtually partitioned into several servers.

Virtualization technology is used for partitioning. Ex:Vmware,FreeVPS

This type of hosting provides less performance than dedicated hosting, but more performance than shared hosting.

FTP Client software

It is used to transfer file from client computer to server computer.

Examples for FTP client software are : Filezilla, SmartFTP,CuteFTP

For security nowadays SFTP uses SSH(SecureShell) protocol.

Free Hosting

Web hosting service in free of charge is called free hosting (No money).

Limitations:

Limited size of file can be uploaded.

Advertisements from the service provider

Audio/video may not be permitted

8. Database Management System

- Advantages of DBMS
- Components of DBMS
- Types of Users
- RDBMS Terminologies
- Relational Operators(Select,Project,Union,Intersection)

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Database is an organized collection of inter-related data.

DBMS is a software for storage, retrieval and management of database.

Example: Oracle,MySQL,MS Access,...

Advantages of DBMS

- Data duplication(Data redundancy) is reduced ഡാറ്റ ആവർത്തനം കുറച്ചു.
- Data inconsistency is avoided.ഡാറ്റ പൊരുത്തക്കേട് ഒഴിവാക്കുന്നു.
- Data are efficiently accessed.ഡാറ്റ കാര്യക്ഷമമായി ആക്സസ് ചെയ്യുന്നു
- Data security . ഡാറ്റ സുരക്ഷ
- Data can be shared.ഡാറ്റ പങ്കിടാം
- Data integrity is maintained.ഡാറ്റ സമഗ്രത നിലനിർത്തുന്നു.
- Crash recovery. തകര്ച്ച വീണ്ടെടുക്കൽ

Components of DBMS

- **Hardware**
- **Software**
- **Users**
- **Data**
- **Procedures**

Organization of Data

- **Field:** Smallest unit of data
- **Record:** Collection of fields
- **File:** Collection of Record

Database Users

- **Database Administrator (DBA):**

  The person responsible for the over all control of database.

  ഡാറ്റാബേസിന്റെ എല്ലാ നിയന്ത്രണത്തിനും ഉത്തഉത്തരവാദിയായ വ്യക്തി.

- **Application Programmer:**

  A program who write application program

  ആപ്ലിക്കേഷൻ പ്രോഗ്രാമുകൾ എഴുതുന്ന ഒരു വ്യക്തി

- **Naive Users:**

  They are not concerned with details of the DBMS.

  DBMS വിശദാംശങ്ങളെക്കുറിച്ച് അറിവില്ലാത്ത ഉപയോക്താക്കൾ

- **Sophisticated Users:**

  They interact with the database through their own queries.

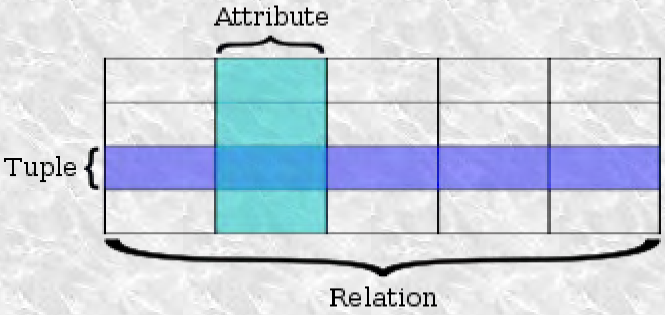
  അവർ സ്വന്തം ചോദ്യങ്ങളിലൂടെ ഡാറ്റാബേസുമായി സംവദിക്കുന്നു.

Terminologies of RDBMS

RDBMS- Relational Database Management System.

Here Data are organized in the form of rows and columns(Table)

- Relation: A Table is also called Relation
- Tuple: The rows (records) of a relation are known as tuples.
- Attribute: The columns of a relation are called attributes.
- Degree: The number of attributes in a relation .
- Cardinality: The number of rows (records) or tuples in a relation.
- Domain: It is a pool of values in a given column of a table.
- Schema: The structure / definition of a database
- Instance: An instance of a relation is a set of tuples in it.
- Entity: Any thing or a person



Relational Algebra

Set of operations performed on relation/table is called relational algebra

- Selection : Used to select rows from a relation that satisfies a given conditions.
- This operation is denoted using lower case letter sigma (σ).
- Project: Selects some attributes from the table. It is denoted by lower case letter π .
- Union:It is a binary operation which displays all the tuples from both relation.

  It is denoted by ∪
- Intersection:It is a binary operation which displays all the common tuples from both relation. It is denoted by ∩ .

9. Structured Query Language(SQL)

- SQL Components
- SQL Data types
- Constraints
- Use of Commands(CREATE TABLE,DROP TABLE,INSERT, SELECT,UPDATE,DELETE)

SQL is a Language for managing data in RDBMS.
It uses some commands for managing data in a DBMS

Components of SQL

- **DDL(Data Definition Language)**

  Provides commands to deal with the schema (structure) of the RDBMS.

  RDBMS ഘടന കൈകാര്യം ചെയ്യുന്നതിനുള്ള കമാൻഡുകൾ നൽകുന്നു.

  Example:- CREATE TABLE,DROP TABLE,ALTER TABLE

- **DML(Data Manipulation Language)**

  Provides commands to manipulate data in a database.

  ഒരു ഡാറ്റാബേസിലെ ഡാറ്റ കൈകാര്യം ചെയ്യുന്നതിനുള്ള കമാൻഡുകൾ നൽകുന്നു.

  Example:- INSERT,SELECT,UPDATE,DELETE

- **DCL(Data Control Language)**

  Is used to control access(security) of the database.

  ഡാറ്റാബേസിന്റെ സുരക്ഷ നിയന്ത്രിക്കാൻ ഉപയോഗിക്കുന്നു.

  Example:- GRANT,REVOKE

Data Types in SQL

- **Numeric Data Types**

  INT or INTEGER :- For storing a number without fractional part

  DEC or DECIMAL:- For storing a number with fractional part

- **String Data Types**

  CHAR :- For storing any character. It is a fixed length string data type

  VARCHAR :- For storing any character. It is a variable length string data type

- **Date and Time Data Types**

  DATE:- For storing date value

  TIME:- For storing time value

Data Types are:
INT,DEC,CHAR,VARCHAR,DATE ,TIME

Column Constraints

- **NOT NULL:**

  To avoid null value in a column

- **UNIQUE:**

  To avoid duplicate value in a column

- **PRIMARY KEY:**

  For setting a column as primary key

- **DEFAULT:**

  For setting default value for a column

- **AUTOINCREMENT:**

  For setting automatic incrementing columns

SQL Commands

- **DDL Commands**

  CREATE TABLE:- To create a new table

  ALTER TABLE:- To modify a table

  DROP TABLE:- To delete a table

- **DML Commands**

  INSERT:- To insert data into the table

  SELECT:- To retrieve data from a table

  DELETE: To delete data from a table

  UPDATE: To modify data in a table

Example commands

To create a new Table

```
CREATE TABLE STUD(AdNo INT,Name Varchar(30));
```

To insert data

```
INSERT INTO STUD VALUES(101,'Fathima');
```

To retrieve data

```
SELECT Adno,Name FROM STUD;
```

To modify the table

```
ALTER TABLE STUD ADD Mark INT;
```

To modify the data

```
UPDATE STUD SET Mark=50 WHERE Adno=101;
```

To delete data

```
DELETE FROM STUD WHERE Adno=101;
```

To delete the table

```
DROP TABLE STUD;
```

10. Enterprise Resource Planning(ERP)

- Functional Units of ERP(Listing Only)
- Examples of ERP Packages
- Benefits of ERP

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ERP system is a fully integrated business management system

പൂർണമായും സംയോജിത ബിസിനസ് മാനേജ്മെന്റ് സിസ്റ്റമാണ് ERP

Functional Units of ERP

- Financial module
- Manufacturing module
- Production planning module
- HR module
- Inventory control module
- Marketing module
- Sales and distribution module
- Quality management module

Examples of ERP Packages

- Oracle

  Oracle is one of the most popular ERP package.

- SAP

  SAP stands for Systems, Applications and Products for data processing

- Odoo

  Odoo is an open source ERP.

- Microsoft Dynamics

  Microsoft Dynamics is part of Microsoft business solutions.

- Tally

  Tally solutions Pvt Ltd is a Bangalore based Software Company in India.

Benefits of ERP

- Improved resource utilization. മെച്ചപ്പെട്ട വിഭവ വിനിയോഗം
- Better customer satisfaction.മികച്ച ഉപഭോക്തൃ സംതൃപ്തി
- Provides accurate information.കൃത്യമായ വിവരങ്ങൾ നൽകുന്നു
- Decision making capability.തീരുമാനമെടുക്കാനുള്ള കഴിവ്
- Increased flexibility.വർദ്ധിച്ച വഴക്കം
- Information integrity.വിവര സമഗ്രത

11. Trends and Issues in ICT

- Mobile communication Services
- Short Note on Mobile OS
- Cyber crimes against individuals

ICT stands for Information and Communication Technology.

It is the synonym of Information Technology.
വിവരസാങ്കേതികവിദ്യയുടെ പര്യായമാണിത്

Mobile Communication Services

Short Message Service(SMS) :

Allows exchanging short text messages.

ഹ്രസ്വ വാചക സന്ദേശങ്ങൾ കൈമാറാൻ അനുവദിക്കുന്ന സേവനമാണിത്

Multimedia Messaging Service(MMS):

Is a standard way to send and receive messages that consists of - multimedia content(sound,video,image...) using mobile phones

മൾട്ടിമീഡിയ ഉള്ളടക്കം (ശബ്ദം, വീഡിയോ, ഇമേജ് ...)സന്ദേശങ്ങൾ അയയ്ക്കുന്നതിനും സ്വീകരിക്കുന്നതിനുമുള്ള ഒരു സ്റ്റാൻഡേർഡ് മാർഗമാണ്

SIM- Subscribers Identity Module

Global Positioning System(GPS):

Is a satellite based navigation system that is used to locate a geographical position anywhere on earth

ഭൂമിയിലെവിടെയും ഭൂമിശാസ്ത്രപരമായ സ്ഥാനം കണ്ടെത്താൻ ഉപയോഗിക്കുന്ന സാറ്റലൈറ്റ് അധിഷ്ഠിത നാവിഗേഷൻ സംവിധാനമാണ

Smart cards

A smart card is a plastic card embedded with a computer chip / memory that stores and transacts data.

ഡാറ്റ സംഭരിക്കുകയും ഇടപാട് നടത്തുകയും ചെയ്യുന്ന ഒരു കമ്പ്യൂട്ടർ ചിപ്പ് / മെമ്മറി ഉൾക്കൊള്ളുന്ന ഒരു പ്ലാസ്റ്റിക് കാർഡാണ് സ്മാർട്ട് കാർഡ്.

Mobile Operating System

- A mobile operating system is the operating system used in a mobile device (smartphone, tablet, etc.)

  ഒരു മൊബൈൽ ഉപകരണത്തിൽ (സ്മാർട്ട്ഫോൺ, ടാബ്‌ലെറ്റ് മുതലായവ) ഉപയോഗിക്കുന്ന ഓപ്പറേറ്റിംഗ് സിസ്റ്റമാണ് മൊബൈൽ ഓപ്പറേറ്റിംഗ് സിസ്റ്റം

- A mobile OS manages the hardware and software components of a mobile device

  ഒരു മൊബൈൽ ഉപകരണത്തിലെ ഹാർഡ്‌വെയർ,സോഫ്റ്റ്‌വെയർ ഭാഗങ്ങളെ നിയന്ത്രിക്കുന്നത മൊബൈൽ ഓപ്പറേറ്റിംഗ് സിസ്റ്റം ആണ്

- Popular mobile operating systems are Android , iOS , BlackBerry and Windows

Android OS

- Android is a Linux-based operating system designed mainly for touch screen mobile devices such as smart phones and tablet computers.
- പ്രധാനമായും ടച്ച് സ്ക്രീൻ ഉപകരണങ്ങൾക്കു വേണ്ടി(സ്മാർട്ട് ഫോണുകൾ, ടാബ്‌ലെറ്റ് കമ്പ്യൂട്ടറുകൾ എന്നിവ പോലുള്ള) രൂപകൽപ്പന ചെയ്തിരിക്കുന്ന ലിനക്സ് അടിസ്ഥാനമാക്കിയുള്ള ഓപ്പറേറ്റിംഗ് സിസ്റ്റമാണ് Android
- The acceptance of Android is due to factors like its open source nature and user friendly.
- Android- ന്റെ സ്വീകാര്യത അതിന്റെ ഓപ്പൺ സോഴ്സ് സ്വഭാവം, ഉപയോക്തൃ സൗഹാർദ്ദം തുടങ്ങിയ ഘടകങ്ങൾ മൂലമാണ്

Cyber crimes against individuals

- **Identity theft**

  Identity theft occurs when someone uses another person's identifying information, like their name, credit card number, etc. without their permission

  മറ്റൊരാളുടെ തിരിച്ചറിയൽ വിവരങ്ങൾ, അവരുടെ പേര്, ക്രെഡിറ്റ് കാർഡ് നമ്പർ മുതലായവ് അവരുടെ അനുമതിയില്ലാതെ ഉപയോഗിക്കുമ്പോഴാണ് ഐഡന്റിറ്റി മോഷണം നടക്കുന്നത്

- **Harassment**

  Posting humiliating comments focusing on gender, race, religion,nationality at specific individuals in chat rooms, social media, e-mail, etc. is harassment.

  ചാറ്റ് റൂമുകൾ, സോഷ്യൽ മീഡിയ, ഇ-മെയിൽ മുതലായവയിലെ പ്രത്യേക വ്യക്തികളിൽ ലിംഗഭേദം, വംശം, മതം, ദേശീയത എന്നിവ കേന്ദ്രീകരിച്ച് അപമാനകരമായ അഭിപ്രായങ്ങൾ പോസ്റ്റുചെയ്യുന്നത് ഉപദ്രവമാണ്

Cyber crimes against individuals

- **Impersonation and cheating:**

  Impersonation is an act of pretending to be another person for the purpose of harming the victim.ഉപദ്രവത്തിനായി ഒരാൾ മറ്റൊരാളായി നടിക്കുന്ന പ്രവൃത്തി.

- **Violation of privacy:**

  Violation of privacy is the intrusion into the personal life of another, without a valid reason.സാധുവായ കാരണമില്ലാതെ വ്യക്തിജ്ജീവിതത്തിലേക്കുള്ള കടന്നുകയറ്റമാണ് .

- **Dissemination of obscene material:**

  The posting of obscene material is one of the important cyber crimes today.

  അശ്ലീല കാര്യങ്ങൾ പോസ്റ്റ് ചെയ്യൽ പ്രധാന സൈബർ കുറ്റ കൃത്യമാണ്

FULL
MARK
A+

All the very best

100/100

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