

Certificate

This is to Certify that

Mr/ Miss shashikiran murti

Studying in SECS-II

 has performed set of experiments
of the subject mobile computing

Satisfactorily in the year 2020

Date :

Head of Dept.

Sec. Incharge

BECSEII MOC FILE

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Date :

Experiment - 01

Aim → Write a simple program for displaying "Hello World" on your mobile application using J2ME coreless toolkit.

Theory →

↳ J2ME stands for Java 2 micro edition, J2ME allows programmers to use the Java programming language and related tools to develop programs for mobile coreless information devices such as cellular phones and PDAs.

J2ME consists of programming specifications and a special virtual machine, the Virtual Machine allows run program on mobile devices.

Devices with systems that exploit J2ME are already available

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Date :

J2ME Hello World ; -

↳ This is a simple "Hello world" application. In this, example we are creating a form ~~name~~ name "Hello World" and creating a string message "Hello World" as below:

Form form = new Form ("Hello World");

String msg = "Hello World";

↳ In this application, To display the message we are using append method with the Form as below:

form.append(msg);

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Date :

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NAME : FURKHAN MUJIBODDEN SHAIKH

ROLL_NO: 63

CLASS: BECSEII

AIM: WRITE A PROGRAM TO PRINT HELLO WORLD

```
package helloworld;

import javax.microedition.lcdui.*;
import javax.microedition.midlet.*;

public class HelloWorld extends MIDlet{

    private Form form;
    private Display display;

    public HelloWorld(){
        super();
    }

    public void startApp(){
        form = new Form("Hello World");
        String msg = "Hello World!!!!!!";
        form.append(msg);
        display = Display.getDisplay(this);
        display.setCurrent(form);
    }

    public void pauseApp(){}
    public void destroyApp(boolean unconditional){
        notifyDestroyed();
    }
}
```

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Experiment → 02

Date :

API → Write a program to draw arc & line using Graphics class in J2ME coress toolkit.

Theory →

↳ J2ME has two programming specifications;

1. Connected Limited Device Configuration (CLDC).
2. mobile Information Device profile (MIDP).

↳ CLDC lays out the application program interface (API) and virtual machine features needed to support mobile devices.

ARC MIDlet EXAMPLE

In the previous draw an example, we have explained how to draw an arc on the screen. But in this example we

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Date :

arc at different locations.

Following are some methods:

1. setColor();
2. fillRect();
3. setColor();
4. fillArc();
5. setColor();
6. drawRect();
7. setStrokeStyle();

SIMPLE LINE CANVAS

↳ This is a simple example of drawing lines using canvas class J2ME. In this example we are creating three different lines at different locations and forms.

In the source code

~~CanvasLine class extends the canvas class to draw these lines.~~

↳ Following methods are used:

1. drawLine()
2. fillRect()
3. setColor()

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Conclusion →

thus we have drawn

line & arc using same compass
toolkit.

BECSEII MOC FILE

NAME: FURKHAN SHAIKH

CLASS: BECSEII

AIM: WRITE A PROGRAM TO DISPLAY LINE,
ARC

```
package exp2;

import javax.microedition.midlet.*;
import javax.microedition.lcdui.*;

public class LineCanvas extends MIDlet{
    private Display display;

    public void startApp(){
        Canvas canvas = new CanvasLine();
        display = Display.getDisplay(this);
        display.setCurrent(canvas);
    }

    g.setColor(0xFFFF00);
    g.drawLine(0, height/4, width - 1, height/4);

    g.setColor(0, 0, 255);
    g.setLineStyle(Graphics.SOLID);
    g.drawLine(0, 0, width - 1, height - 1);
}
```

```
public void pauseApp(){}
}
```

```
public void destroyApp(boolean unconditional){}
}
```

```
class CanvasLine extends Canvas {
    public void paint(Graphics g){
        int width = getWidth();
        int height = getHeight();
    }
}
```

```
    g.setColor(255, 162, 117);
    g.fillRect(0, 0, width, height);
}
```

```
    g.setColor(0, 0, 255);
    g.drawLine(0, height/2, width - 1, height/2);
}
```

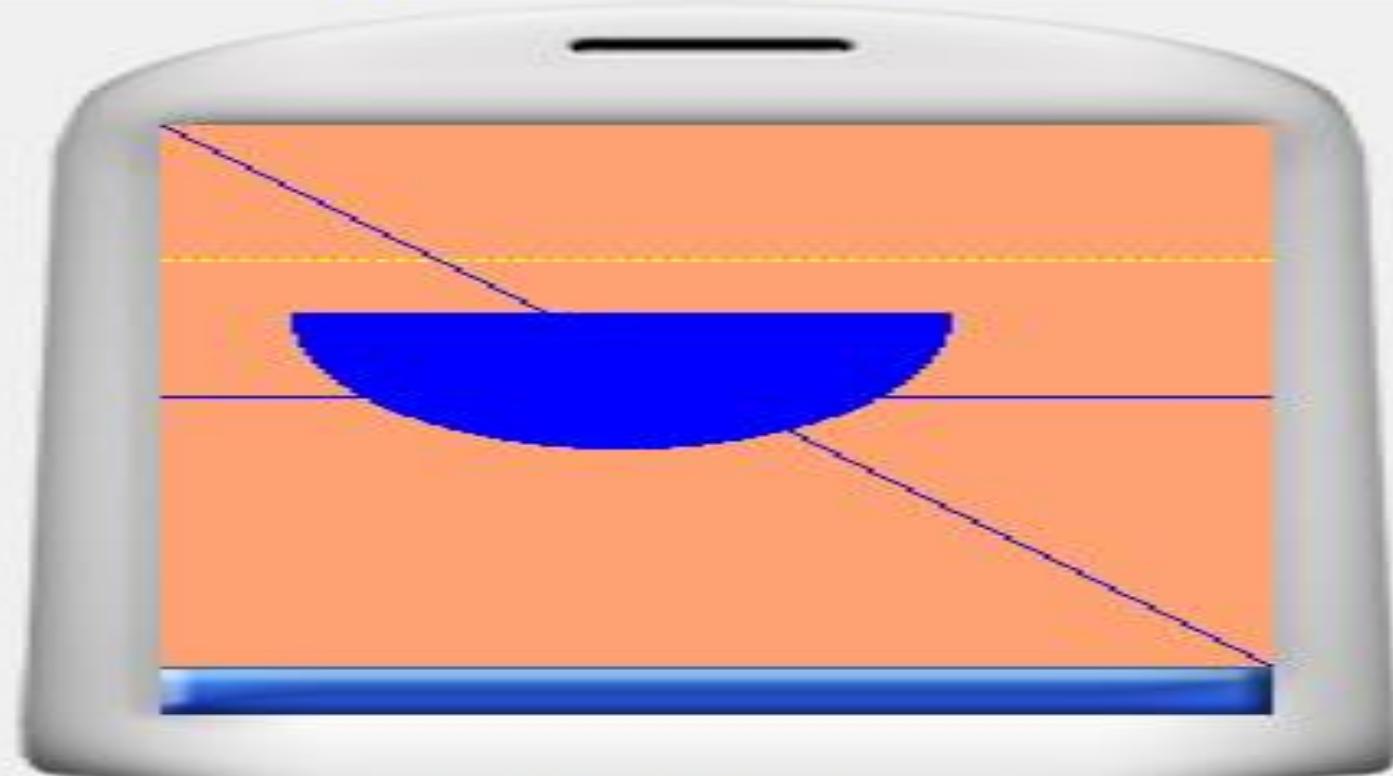
```
    g.setStrokeStyle(Graphics.DOTTED);
}
```

```
    g.fillArc(20, 20, 100, 100, 180, 180);
}
}
```

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ClamshellCldc... Application View Help

Phone number: 123456789



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Date :

Experiment - 03

Aim → Write a program for creating image using Image class using J2ME wireless toolkit.

Theory →

→ Image class defines the images. To instantiate Image, we have to specify the path name of an image file. Images must be stored in PNG format. J2ME supports the manipulation too in BMP format only.

Steps:

1. Download an Image.
2. Store it as PNG.
3. Instantiate Image class.
4. Specify path of Image.
5. Image will be loaded to screen.

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Date :

Image class constructor;

Image img = new Image(path);

path → location where actual
image exists.

↳ The constructor creates an
Image object and passes it to
UI component for display. Notice
that the path specification
for the image is relative to
the resource directory of this
project under the J2ME address
toolkit installation.

↳ The program below demonst-
rates the use of the ImageItem
MIDP UI component class.

↳ We can use other formats
of images as well but J2ME
wireless toolkit allows
manipulation of "PNG" images
only.

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Page No. (

Conclusion →

thus we have implemented
a program to use Images To
J2ME wireless toolkit.

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NAME : FURKHAN SHAIKH

ROLL: 63

AIM: WAP TO DISPLAY IMAGE

```
package image;

import javax.microedition.lcdui.*;
import javax.microedition.midlet.*;

public class SlidelImage extends MIDlet{
    private Display display;
    private SimpleSlidingCanvas canvas;

    public void startApp(){
        canvas = new SimpleSlidingCanvas();
        display = Display.getDisplay(this);
        display.setCurrent(canvas);
    } public void pauseApp(){}

    public void destroyApp(boolean unconditional){
        notifyDestroyed();
    }

    class SimpleSlidingCanvas extends Canvas implements Runnable{
        Image image = null;

        public SimpleSlidingCanvas(){
            try{
                this.image = Image.createImage("/SATYAMEV.jpg");
                new Thread(this).start();
            }catch(Exception e){
                e.printStackTrace();
            }
        }
    }
}
```

```
}

}

public void run(){
    while(true){
        repaint();
        try{ synchronized(this){
            wait(50L);
        } }catch(Exception e){ e.printStackTrace(); } }
    protected void paint(Graphics g){
        g.setColor(0xffffffff);
        g.fillRect(0, 0, getWidth(), getHeight());

        if(image != null){
            g.drawImage(image, getWidth() / 2, getHeight() / 2,
Graphics.HCENTER | Graphics.VCENTER);
        } else {
            g.setColor(0x000000);
            g.drawString("No image available", getWidth() / 2,
getHeight() / 2, Graphics.HCENTER | Graphics.BASELINE);
        }
    }
}
```

BECSEII MOC FILE

BECSEII MOC FILE

ClamshellCldc... — X
Application View Help

Phone number: 123456789



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Experiment - 04

Aim → Write a simple program for design of calendar for any given month & year J2ME.

Theory →

- ↳ Creating a calendar is very basic example to learn any programming language.
- ↳ In the example we have implemented, we have imported Java.util.TimeZone, that is required to create the calendar.
- ↳ TimeZone is a class that provide us with date and time, which we will use as calendar.
- ↳ To do so, we will use a constructor named "CalendarMidlet", and call it as object.

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```
*****  
Ex.  
public calendarMIDlet<>{  
    cal = new DateField("date:",  
        DateField.DATE,  
        DateField.TimeZone("GMT"))  
}  
}  
*****
```

↳ The output of above code
may vary. It is because of the
version of J2ME or sometimes
hardware change.

↳ We can modify calendar by
using Font class, Color class, etc.

BECSEII MOC FILE

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Conclusion →
thus we have

Implemented a ~~task~~ calendar
using J2ME wireless toolkit.

BECSEII MOC FILE

ClamshellCldc... — X
Application View Help

Phone number: 123456789

Calender

Date In: mmm dd, yyyy



Jan 1970

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Cancel

Set

 Sun
microsystems

1

2 abc

3 def

4 ghi

5 jkl

6 mno

7 pqrs

8 tuv

9 wxyz

Experiment - 05

Aim → Write a program for writing & formatting of text to WML.

Theory →

↪ WML PS is an ~~as~~ XML language used to specify content & UI for WAP devices like PDA and mobile phones.

↪ WML PS based on HTML and PS modified so that it can be compared with HTML.

↪ WML files have the extension ".wml".

↪ WML supports client side scripting & language PS called WMLScript.

Following are text formatting tags in HTML:

1. `
`

→ This tag is used to break the line and moves the cursor to new line.

2. `<p></p>`

→ This tag is used to add a paragraph to a web page.

3. `<table></table>`

→ This tag is used to format the data in tabular manner.

4. `<pre></pre>`

→ It is used to add a text in webpage in the same format as it is typed.

BECSEII MOC FILE

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Conclusion →

thus we have created
a first webpage using HTML.

BECSEII MOC FILE

Name: Furkhan Shaikh

Class: BECSEII

Aim: Write a program for writing and formatting of text in WML.

CODE:

```
<?xml version="1.0"?>  
<!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML 1.1//EN"  
"http://www.wapforum.org/DTD/wml_1.1.xml"  
">
```

```
<wml>  
  
<card title="Formatting">  
  
<p>  
  
<em>An old man lived in the village</em>.   
<strong>He was one of the most  
</strong>unfortunate people in the world.  
The whole village was tired of him; he was  
always gloomy, he constantly complained and  
was always in a bad mood.
```

```
<b>The longer </b>he lived, <i>the more  
</i>bile he was <u>becoming and </u>the  
more poisonous were his words. People  
avoided him, because his misfortune became  
contagious. It was even unnatural and  
insulting to be happy next to him.
```

```
<big>He created</big> the feeling  
<small>of unhappiness in </small>others  
  
<br>  
<br>  
<pre> Following Tags are used</pre>
```

1.em

2.Strong

3. Bold(b)

<i>4. Italic(i)</i>

<u>5. Underlined(u)</u>

<big>6. Big(big)</big>

<small>7. Small text</small>

</p>

</card>

</wml>

BECSEII MOC FILE

|

BECSEII MOC FILE



Following Tags are used

1. em
2. Strong
3. Bold(b)
4. Italic(i)
5. Underlined(u)
6. Big(big)
7. Small text

Experiment → 06

Aim → Write a program for navigating between cards & deck in WML.

Theory →

- ↳ The main difference b/w HTML & WML is the basic unit of navigation.
- ↳ The basic unit of Navigation in WML is a card, while in HTML it is a page.
- ↳ A WML file can contain multiple cards and they form a deck.
- ↳ When WML page is accessed from mobile phone, all the cards in the page are downloaded from WAP server.

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- ↳ so the If user goes to another card, then browser need not to send another request.
- ↳ You can put links, text, Programmes, Input fields and many other elements in a card.

Program Structure:

```
<com1>
```

```
  <card Id="1">
    <!-- body -->
  </card>
```

```
  <card Id="2">
    <!-- body -->
  </card>
```

```
</com1>
```

BECSEII MOC FILE

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Conclusion →
thus we have
navigated betw the cards of

BECSEII MOC FILE

NAME: FURKHAN MUJIBODDEN SHAIKH

CLASS: BECSEII

ROLL: 63

AIM: WRITE A PROGRAM FOR NAVIGATION BETWEEN CARDS AND DECK IN WML.

CODE:

```
<wml>
<template>
  <do type="accept" label="Pick">
    <prev/>
  </do>
</template>
```

```
<card id="card1">

  <do type="accept" label="Black">
    <go href="#card2"/>
  </do>
  <do type="options" label="White">
    <go href="#card3"/>
  </do>
  <p>
    Pick a color:
  </p>
</card>
<card id="card2">
```

<p>

You picked black.

</p>

</card>

<card id="card3">

<p>

You picked white.

</p>

</card>

</wml>

BECSEII MOC FILE

|

BECSEII MOC FILE



Pick a color:

BECSEII MOC FILE

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Experiment → 07

Aims → Write a program for displaying Images using WML.

Theory →

- ↳ The <Image> tag is used to include an image in WAP card. WAP enabled mobile devices only supported the wbmp format.
- ↳ wbmp images can only contain 2 colors:
 1. Black
 2. White.
- ↳ The file extension of wbmp image is ".wbmp".
- ↳ Now, you can also use "wbmp" with jpg & png images.

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→ following are options we can use with tag;

1. /height/

option

Value

1. align

1. top

2. middle

3. bottom

2. alt

Alternative Text

3. height

1. px.

2. %

4. hspace

1. px.

2. %

5. localsrc

cdata

6. src

Image URL

7. width

1. px.

2. %

BECSEII MOC FILE

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Conclusion →

thus we have Propor-

BECSEII MOC FILE

NAME: FURKHAN MUJIBODDEN SHAIKH

CLASS: BECSEII

ROLL: 63

AIM: WRITE A PROGRAM FOR DISPLAYING OF IMAGE USING WML.

CODE:

```
<wml>

<card id="card1" title="Image in WML">

<p>

<br/>

<br>

<br>

<big>HE IS GOD OF THUNDER.</big>

</p>

<p>

<br/>

<br>

<br>

<big>HE IS GOD OF AVENGERS.</big>

</p>

</card>

</wml>
```

BECSEII MOC FILE

BECSEII MOC FILE

File Edit View Go Bookmarks Help



Address file:///C:/Furkhan/BE/SEM 8/MOC/PRACTICALS/EXP 7/index.wml



HE IS GOD OF THUNDER.



HE IS GOD OF AVENGERS

Experiment → 08

Aim →

Write a program for
table properties in HTML.

Theory →

→ A table allows web authors
to arrange data as text, Images,
Pic, other tables, etc into rows
and columns of cells.

→ The `<table>` tag along with
`<tr>`, `<td>` tags are used to
create a table in web page.

→ The `<table>` element should be
put within `<p>` tag (Pps)

`<p>`

`<table>`

`</table>`

BECSEII MOC FILE

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→ The <table> tag is not responsive like an HTML table.

Following options can be used with <table> tag.

Attribute	Value
1. columns	Number.
2. align	1. L 2. R 3. C
3. class	class data
4. id	element ID
5. xml:lang	Language used to element.

BECSEII MOC FILE

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Conclusion →
thus we have arranged
our data in a tabular format.

BECSEII MOC FILE

NAME: FURKHAN MUJIBODDEN SHAIKH

CLASS: BECSEII

ROLL: 63

AIM: WRITE A PROGRAM FOR TABLE PROPERTIES OF
WML

CODE:

```
<wml>
```

```
<card title="WML Tables">
```

```
<p>
```

```
<table columns="3" align="LCR">
```

```
    <tr>
```

```
        <td>NAME</td>
```

```
        <td>CLASS</td>
```

```
        <td>ROLL</td>
```

```
    </tr>
```

```
    <tr>
```

```
        <td>FURKHAN MUJIB SHAIKH</td>
```

```
        <td>BECSEII</td>
```

```
        <td>63</td>
```

```
    </tr>
```

```
    <tr>
```

```
        <td>PRASHANT MANOJ PHULARI</td>
```

```
        <td>BECSEII</td>
```

```
        <td>51</td>
```

```
    </tr>
```

```
<tr>
```

```
    <td>SANTOSH VINAYAK SURYAWANSI</td>
```

```
    <td>BECSEII</td>
```

```
    <td>71</td>
```

```
</tr>
```

```
<tr>
```

```
    <td>MAYURESH GAJANAN POPHAL</td>
```

```
    <td>BECSEII</td>
```

```
    <td>52</td>
```

```
</tr>
```

```
<tr>
```

```
    <td>ANUJA TEHRA</td>
```

```
    <td>BECSEII</td>
```

```
    <td>72</td>
```

```
</tr>
```

```
<tr>
```

```
    <td>RUPALI BHANGE</td>
```

```
    <td>BECSEII</td>
```

```
    <td>05</td>
```

```
</tr>
```

```
<tr>
```

```
    <td>PRIYANKA JADHAV</td>
```

```
    <td>BECSEII</td>
```

```
    <td>79</td>
```

```
</tr>
```

```
</table>
```

BECSEII MOC FILE

</p>

</wml>

</card>

WML Tables - WinWAP for Windows

File Edit View Go Bookmarks Help



Address file:///C:/Furkhan/BE/SEM 8/MOC/PRACTICALS/EXP 8/index.wml

NAME	CLASS	ROLL
FURKHN MUJIB SHAIKH	BECSEII	63
PRASHANT MANOJ PHULARI	BECSEII	51
SANTOSH VINAYAK SURYAWANSHI	BECSEII	71
MAYURESH GAJANAN POOPHAL	BECSEII	52
ANUJA TEHRA	BECSEII	72
RUPALI BHANGE	BECSEII	05
PRIYANKA JADHAV	BECSEII	79

BECSEII MOC FILE

Experiment → 09

Ques → Write a program to accept user inputs to HTML.

Theory →

→ HTML provides various options to let a user enter information through web application.

■ I. <select> Tag :

→ This tag is used to define a select list and the <option> tags are used within select tag.

<select>

<option> ... </option>

:

</select>

BECSEII MOC FILE

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2. <input> tag:

↳ The <input> element is used to create input fields and input fields are used to obtain alphanumeric data from users.

3. <fieldset>;

↳ This tag is used to group various input fields or lists.

4. <optgroup>;

↳ This element is used to group various options together inside a selectable list.

option

Values

1. title

text

2. class

class Data

3. id

element ID

BECSEII MOC FILE

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Conclusion →

thus we have created
a form using com1 <Project> tag.

BECSEII MOC FILE

NAME: FURKHAN MUJIBODDEN SHAIKH

CLASS: BECSEII

ROLL: 63

**AIM: WRITE A PROGRAM FOR TABLE PROPERTIES OF
WML**

<wml>

<card title="Selectable List">

<p> Select Your Class :

<select>

<option value="BECSEII">BECSEII</option>

<option value="BECSEI">BECSEI</option>

</select>

First Name:

<input name="name" size="12"/>

Age :

<input name="age" size="12" format="*N"/>

Roll :

<input name="roll" size="12" format="*N"/>

<anchor>

<go method="get" href="process.php">

<postfield name="name" value="\${name}"/>

<postfield name="age" value="\${age}"/>

<postfield name="roll" value="\${roll}"/>

</go>

Submit Data

</anchor>

</p>

</card>

</wml>

BECSEII MOC FILE

Selectable List - WinWAP for Windows

File Edit View Go Bookmarks Help

Back Forward Home Reload Stop Search Bookmarks

Address file:///C:/Furkhan/BE/SEM 8/MOC/PRACTICALS/EXP 9/index.wml

Select Your Class : BECSEII

First Name: Furkhan

Age : 20

Roll : 63

[Submit Data](#)



BECSEII MOC FILE

Experiment → 10

Aim → Write a program for WML Script Basics.

Theory →

↪ WML script is very similar to a programming language of WML.

↪ A Scripting language is similar to a programming language, but is for lighter weight.

Components :

1. operators;

Following operators are supported by wml script;

a) Arithmetic

b) Logical

2. Control Statements:

1. If - else block.
2. for
3. while
4. break.
5. Continue.

3. Comments:

1. single line comments < // >
2. multi-line comments < /* ... */ >

↳ The WMLScript is a case-sensitive language. semi-colon is a terminator.

BECSEII MOC FILE

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)*****

Conclusion →

thus we have

performed Arithmetical operations
using WML & WMLScript.

BECSEII MOC FILE

NAME: FURKHAN MUJIBODDEN SHAIKH

CLASS: BECSEII

ROLL: 63

AIM: WRITE A PROGRAM FOR TABLE PROPERTIES OF
WML

INDEX.WML:

```
<wml>

<card id="card1" title="prompt() Example">

<p>
    ENTER VALUE OF A:
    <br>
    <input name="A" size="12" />
    <br><br>

    ENTER VALUE OF B:
    <br>
    <input name="B" size="12" />
    <br><br>

    <a href="index.wmls#add(${A},${B})">Click Here To
    Execute Script</a><br/>
    ${add}
</p>
</card>
```

</wml>

INDEX.WMLS

extern function add(A,B)

{

WMLBrowser.setVar("add", "Concatenation: " + A+B);

WMLBrowser.refresh();

}

BECSEII MOC FILE

