





Conversion of Mathematics Grade III workbook

Introduction

A hands on training was conducted during September 15- October 05, 2010 to create interactive workbook pages. Five participants drawn from three different organisations from Maldives viz.

- Muhyiddin School
- Centre for Continuing Education
- Educational Development Centre

attended the workshop. The Participants detail is as follows:

Ser No.	Name	Organisation	eMail	Photograph
001	Ms Fathimath Hilmy	Muhyiddin School	fathhilmy0203@hotmail.com	
002	Ms Fathimath Zumeena	Muhyiddin School	theangel-87@hotmail.com	
003	Mr Ibrahim Rasheed	Professional Development Section, Centre for Continuing Education	iburasheed@hotmail.com	
004	Mr Abdulla Zaki	Educational Development Centre	abdullazaki.09@gmail.com zaki@edc.edu.mv	
005	Mr Ibrahim Sunil	Education Development Centre	sun_neel@hotmail.com	

The Objective

The workshop objectives are:

- To find out a method of creating interactive work book
- To try out one full workbook of Mathematics to test out the feasibility
- To evolve suitable computer language to make the system work in Mini Laptops, in regular laptops and desktops
- To automate the process, otherwise impossible to carry out the work in two weeks

The Participants Technical Exposure

The participants had a good working knowledge in Window operations, Net issues, page generations, picture creation and in-depth knowledge in teaching/learning issues.

Some of them had lesser exposure to Programming Logic, and languages suitable for such work.

The Technical Solutions

To start with it was decided to create the soft copies of the entire book by re-entering, but this process of re-entering tried out for 10 pages and these pages could not be operated in Mini Laptops due to technical limitations.

With experts in programming various languages were tried out finally, JAVA SCRIPT language has been arrived at after 4 weeks intense research by the author. This approach can help experienced programmers to generate Interactive Workbook, but it may be difficult for non-computer programmers to quickly learn and create pages. A boot strap technique has been adapted to generate pages by creating Java scripted Program that can create Java scripted interactive pages.

Recreation of 126 Pages for the use

A desktop publishing team services has been drawn out to create 126 pages, the reason being

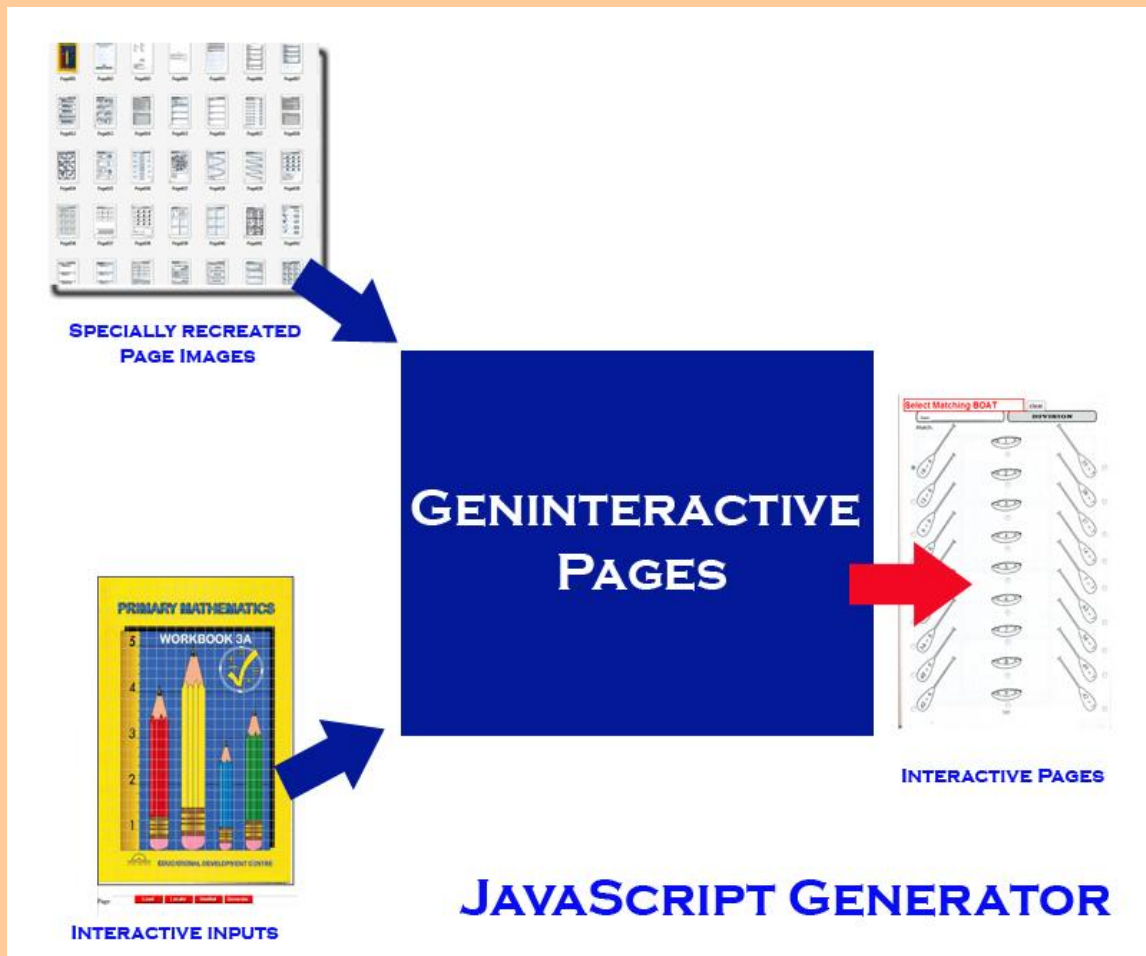
- ➔ The original pages created by scanning had different sizes
- ➔ The input cells got turned due to pages not being straight during scanning
- ➔ back images of pages disturbing current pages

A various techniques have been adapted to clean the pages and to unify the sizes.

GENINTERACTIVE SYSTEM

A system of automatic generation pages has been created and it works as follows.

- ◆ The cleaned out pages are fed to the GenInteractive system
- ◆ by simply giving the page location, input location and check button location the system automatically generates JAVASCRIPT embedded html pages
- ◆ The user has to re-change conditional codes embedded in the system



In this way pages are generated automatically.

The program is presented here.

Automated approach:

GenInteractive JAVASCRIPTED Program;

```
<html>
<head>
<title>
EduFrame Project Interactive JavaScript Generator
</title>
<style type='text/css'>
body {background-image:url('pages/page001.jpg');background-repeat:no-
repeat;margin:0; padding:0; background-position:xpos:0px; ypos:0px;z-index:-1;}
</style>
<script type="text/javascript">
/
*****
*
This Product is developed by V. Krishna Moorthy,
ICT Consultant for Mini Laptop systems
The Product automatically generates Interactive pages
This product is provided free of cost for Teachers of Maldives
to produce interactive WorkBooks
Reach Krishna Moorthy at +91-9312284255, 91-11-40545057
vkrishnamoorthy2003@gmail.com for clarifications and help
*****/
var scout = 0;
var bcount =0;
var i;
var XarrayNow,YarrayNow;
var sXarray= new Array();
var sYarray= new Array();
var bXarray= new Array();
var bYarray= new Array();
var locflag=0;
var butflag=0;
var nfile ="";
var pfile="";
var tempX = 0;
var tempY = 0;
var simage ="";
var loaditflag=0;
var geninpflag=0;
var genbutflag=0;
var genhtmflag=0;
```

```

function PageNow()
{
c = document.getElementById('PageNo').value
c = parseFloat(c)
s = c + 1000
s = "+s
s= s.substr(1,3)
simage= "pages/page"+s+".jpg"
pfile = simage;
nfile = "page"+s+".htm" ;
document.body.style.backgroundImage = "url("+simage+ ")";
scount=0;
loaditflag=1;
}

function PageGet()
{
if (loaditflag == 0)
{document.getElementById('Message').value ="Load a New Page before Location";
return;
}
document.getElementById('Message').value ="Start Locating Input Cell";
locflag=1;
geninpflag=1;
}

function getDirPath(URL) {
    var result = unescape(URL.substring(0,(URL.lastIndexOf("/") + 1))
    return result
}

function PageGen()
{
if (loaditflag == 0 )
{document.getElementById('Message').value ="Load a New Page before Button
Pos";
return;
}
if (geninpflag == 0 )
{document.getElementById('Message').value ="Locate Input Before Button
generation";
}
}

```

```

return;
}

if (genbutflag == 0 )
{document.getElementById('Message').value ="Locate Buttons before html
generation";
return;
}
var fpath = getDirPath(window.location.href);
fpath = fpath.substring(8)
filehtm = fpath +nfile
//var filehtm = "G:\MathsGenerator/"+nfile;
var fso = new ActiveXObject("Scripting.FileSystemObject");
var file = fso.CreateTextFile(filehtm, true);

file.WriteLine("<html>");
file.WriteLine("<head>");
file.WriteLine("<title>");
file.WriteLine("CEMCA EduFrame Project: Book: "+ nfile);
file.WriteLine("</title>");

file.WriteLine("<style type='text/css'>");
//scount = scount -1;

bcount = bcount -1;
file.WriteLine("body {background-image:url("+simage +");background-
repeat:no-repeat;background-position:xpos:0px; ypos:0px; margin:0;padding:0;z-
index:-1;}");
for (i=0;i<=scount;i=i+1)
{
s = i + 100 ;
s = "+s ;
s = s.substr(1,2) ;
file.WriteLine(" .text"+ s +"{ position:absolute; top:" + sYarray[i] + "px; left:"+
sXarray[i] + "px; } " );
}

for (i=0;i<=bcount;i=i+1)
{
s = i + 100
s = "+s
s = s.substr(1,2)

file.WriteLine(" .Button"+ s +"{ position:absolute; top:" + bYarray[i] + "px;

```

```

left:"+ bXarray[i] + "px;} " );
}

file.WriteLine(".formField, select {");
file.WriteLine("border: 2px solid #ff0000; back-ground: #666666; color: #ff0000;
font-family: arial, verdana, ms sans serif; font-weight: bold; font-size: 14pt }");
file.WriteLine("</style>");
file.WriteLine("<script "+ "type=" + "text/javascript" + ">")
file.WriteLine("<!--")
file.WriteLine("var Iright=0;")
file.WriteLine("var right = new
Array('sounds/right01.wav','sounds/right02.wav','sounds/right03.wav','sounds/right0
4.wav');");
file.WriteLine("var wrong = new
Array('sounds/wrong01.wav','sounds/wrong02.wav','sounds/wrong03.wav','sounds/
wrong04.wav');");
file.WriteLine("function EvalSound(soundobj) {");
file.WriteLine("var thissound=document.getElementById(soundobj);");
file.WriteLine("thissound.Play();");
file.WriteLine("}");
for (i=0;i<=bcount;i=i+1)
{
s = i + 100 ;
s = "+s;
s = s.substr(1,2);
file.WriteLine("function checkbut(Que)");
file.WriteLine(" {");
file.WriteLine("Iright = 0;");

for (i=0;i<=scount;i=i+1)
{
s = i + 100 ;
s = "+s;
s = s.substr(1,2);
file.WriteLine( "c"+s+"text=" +
"document.getElementById('text"+s+"').value ;");
}

file.WriteLine("switch(Que)");
file.WriteLine(" {");
for (i=0;i<=bcount;i=i+1)
{
s = i + 100 ;
s = "+s;
s = s.substr(1,2);

```

```

        file.WriteLine( "case "+s+":");
        file.WriteLine("if (c" + s + "text == xx && c" + s + "text == xx )
{ Iright=1;}");
        file.WriteLine("break;");
    }

    file.WriteLine("{}");
    file.WriteLine("checkAnswer()" );
    file.WriteLine("{}" );

}
file.WriteLine("function checkAnswer()" );
file.WriteLine("{}" );
    file.WriteLine("randno = Math.random();");
    file.WriteLine("randno = randno*4;");
file.WriteLine("randno =randno+1;");
    file.WriteLine("randno = parseInt(randno);");
    file.WriteLine("document.getElementById('Message').value = " +"";");
    file.WriteLine("if (Iright == 1)");
file.WriteLine("{}");
    file.WriteLine("document.getElementById('Message').value ='You are
Right;");
    file.WriteLine("document.all['BGSOUND_ID'].src=right[randno];");
    file.WriteLine("{}");
    file.WriteLine("else");
    file.WriteLine("{}");
        file.WriteLine("document.getElementById('Message').value = 'You are
Wrong;");
    file.WriteLine("document.all['BGSOUND_ID'].src=wrong[randno];")
    file.WriteLine("{}" );
    file.WriteLine("{}" );

file.WriteLine("-->")
file.writeLine("<+/'+'script>")
    file.WriteLine("</head>");
    file.WriteLine("<body>");
    file.WriteLine( "<BGSOUND ID='BGSOUND_ID' LOOP=1 VOLUME='-600'
SRC='jsilence.mid'>" );
    file.WriteLine("<form>");

for (i=0;i<=scount;i=i+1)
{
    s = i + 100 ;
    s = "+s;

```

```

    s = s.substr(1,2);
    file.WriteLine("<div class= 'text' + s + ""><input name='text' + s + "" size=1 " +
" id='text'+ s + ""></div>" );
    }

    for (i=0;i<=bcount;i=i+1)
    {
        s = i + 100 ;
        s = "+s;
        s = s.substr(1,2);
        file.WriteLine("<div class= 'button' + s + "">" + "<a href = 'javascript:checkbut("
+ s + ")' ><img src= 'pages/cbutton.gif' id= 'button'+ s + "" border=0
></a></div>" );
    }

    file.WriteLine("<input class= 'formField' name='Message' type='text' id='Message'
size=25 >");
    file.WriteLine("<input type='reset' value='clear' >");
    file.WriteLine("</form>");
    file.WriteLine("</body>");
    file.WriteLine("</html>");
    file.Close();

    document.getElementById('Message').value = "Generated: "+nfile+" "+scount;
    locflag=2;
    location.href="viewValues.htm?"+"page="+nfile;
}

function PageBut()
{
if (loaditflag == 0 )
{document.getElementById('Message').value ="Load a New Page before Button
Pos";
return;
}
if (geninpflag == 0 )
{document.getElementById('Message').value ="Locate Input Before Button
generation";
return;
}
document.getElementById('Message').value ="Start Locating Buttons";
scount=scount-1
butflag=1;

```

```

locflag=0;
genbutflag=1;

}

function getMouseXY(e) {
var el = e.target || e.srcElement;

// Get mouse click co-ords
var ePos = {x:0, y:0};
if ('number' == typeof e.pageX){
ePos.x = e.pageX;
ePos.y = e.pageY;
} else if ('number' == typeof e.clientX){
ePos.x = e.clientX + document.body.scrollLeft
+ document.documentElement.scrollLeft;
ePos.y = e.clientY + document.body.scrollTop
+ document.documentElement.scrollTop;
}
if (ePos.y < 40)
{return;}

YarrayNow =parseInt(ePos.y);
XarrayNow =parseInt(ePos.x);

if (ePos.y < 730)
{
if (locflag == 1)
{
sXarray[scount]=XarrayNow-5;
sYarray[scount]=YarrayNow-5;
butflag=0;
sacount = scount+1;
document.getElementById('Message').value
=document.getElementById('Message').value +"Input Location: "+sacount;
scount=scount+1;
}
}

if (butflag == 1)
{bYarray[bcount]= YarrayNow;
bXarray[bcount]= XarrayNow;
locflag=0
sbcount= bcount+1
document.getElementById('Message').value

```

```
=document.getElementById('Message').value ="Buttons Loc: " + sbcount;
bcount=bcount+1

}
}
}

</script>
</head>
<body onclick='getMouseXY(event);' >

<form name="PAGE" >
Page: <input name="PageNo" type="text" size=4 id="PageNo">
<a href='javascript:PageNow()' ><img src='pages/load.gif' border=0> </a>
<a href='javascript:PageGet()' ><img src='pages/locate.gif' border=0> </a>
<a href='javascript:PageBut()' ><img src='pages/genbut.gif' border=0> </a>
<a href='javascript:PageGen()' ><img src='pages/generate.gif' border=0>
<input name='Message' type='text' id='Message' size=30 ></a>
</form>

</body>
</html>
```

The difficulties

There were around 2000 inputs in the workbook, needing positing, Logical relation specification . There were few difficulties faced, which were sloved and few points need clarifications.

- The numbers when written words example shown make them start with upper cases (capital letters) such as e.g. Three thousand, four hundred and twenty-eight
- one thousand

There are punctuations like comma, dash etc.

Programing techniques have been taught to overcome these issues. Somewhere the currency information is included in the answers like Rf. 2.40

The answers can be checked with multiple supports like

Ignoring extra blanks, punctuations, upper cases etc.

A typical page looks like this:

NUMBERS TO 9999

Date: _____

Study the example and complete the rest.

Write 1428 in words.

1000 one thousand

400 four hundred

28 twenty - eight

1428 One thousand, four hundred and twenty - eight

Write 3162 in words.

3000

100

62

3162

Other Issues

Multiple audio input creations, ODL formats and other issues were discussed solutions provided. Animation basics have been taught. The procedures for Audio file creations, editing conversions to mp3, and attaching them to interactive pages has been taught. Creating online supports for LIVE CLASSROOM conduction supporting both Audio and Video has been shown using freely available sites on the net.

The LIVE demonstrations have been carried out for the same.

JAVA APPLET coding has been discussed general routines were provided to carry out painting :

Date: _____

ADDITION

Add.

Rf. L 3.50 $+ 3.50$ _____ Check	Rf. L 2.25 $+ 4.05$ _____ Check	Rf. L 2.50 $+ 3.70$ _____ Check
Rf. L 6.50 $+ 3.00$ _____ Check	Rf. L 5.25 $+ 4.60$ _____ Check	Rf. L 2.60 $+ 4.25$ _____ Check
Rf. L 1.25 $+ 4.75$ _____ Check	Rf. L 3.50 $+ 6.25$ _____ Check	Rf. L 4.45 $+ 5.54$ _____ Check

Colour the spaces that contains the answers by the Mouse Click

Teacher's Answer: _____

←
Addition problems
→

The Uploading and WEBSITE supports

An OPENSOURCE Product FILEZILLA, for uploading has been taught

All files have been uploaded to URL:

<http://eduframe.net>



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Mini Laptop Solutions (Research Project: A Laptop for Every Learner)

- [Maldives Mini Laptop Experiments](#)
- [Interactive Mathematics Workbook](#)
- [Suggested Approach for interactive Pages For Mini Laptops](#)

The Interactive book has been made at:

<http://eduframe.net/MALDIVES/interactive.htm>

Suggestions

It is suggested that because of the small sizes of the screen multiple pages should be created as suggested. This can handle arithmetic operations from right to left etc.



Conclusion

Hands on experiences have been provided to create INTERACTIVE books. The participants should try out creating other books, if need be further training on various issues can be taught, as MALDIVES EDUCATION MINISTRY has requested our services, in conducting workshops for a group of teachers, for 4 weeks in Male.