MINI PROJECT

On

“Basic Calculator”

Submitted in partial fulfillment

of The requirement for the degree

of

COMPUTER ENGINEERING

SUBMITTED BY:

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UNDER THE GUIDENCE OF:

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DEPARTMENT OF COMPUTER ENGINEERING

HSBPVT’s FACULTY OF ENGINEERING, KASHTI

(Approved by AICTE &Affiliated to Savitribai Phule Pune University)

Year of Submission:2023-2024

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CERTIFICATE

This is to certify that **Shaikh Shanzey Adil** from **Third Year Computer Engineering** has successfully completed her mini project report titled Mini Project **on "Basic Calculator"** at Parikrama Faculty of Engineering, Kashti in the partial fulfillment of the Bachelor's Degree in Engineering of Savitribai Phule Pune University.

Prof. Kanade Renuka	Prof. Hiranwale S.B	Principal
Guide Name	Head of the Department	

ACKNOWLEDGEMENT:

As I write this acknowledgement, I must clarify that this is not just a formal acknowledgement but also a sincere note of thanks and regard from my side. I feel a deep sense of gratitude and affection for those who were associated with this course. Without theirs-operation and guidance this report could not have been conducted properly.

A student of a university will have to write the acknowledgement for their project or research paper stating that the submission is done and is not copied. The acknowledgement sample for the university project is mostly attached after the dedication page thanking all the faculty members of the department, HOD, the Dean and the mentor.

I would like to express my profound gratitude to Mr. Prof. Sachin Hiranwale (name of the HOD), of Computer (designation and department name) department, and Mr. Prof. Mahadik(Dean) of Savitri Bhai Phule Pune university for their contributions to the completion of my project titled Leadership and Personality development.

I would like to express my special thanks to our mentor Mrs. Prof. Kande Renuka for her time and efforts she provided throughout the year. Your useful advice and suggestions were really helpful to me during the project's completion. In this aspect, I am eternally grateful to you.

I would like to acknowledge that this project was completed entirely by me and not by someone else.

Signature

Your name

ABSTRACT:

The main objective of this internship was **WEBSITE DESIGN AND DEVELOPMENT**. Several programming languages that are in use to develop a web based application or software. Some of them are only used for the UI and the frontend of the application, some are used for the backend design of the software.

For example- HTML3, HTML4, HTML5, CSS, Bootstrap Framework etc. are some programming languages to develop the frontend of an application. PHP, Java,Asp.Net etc are used at the backend. Nowadays there are also some framework' s that use vastly.

Frameworks are basically structured programming by using Model, View, and Controller. It is also called as MVC. If we develop web based application that is very useful for us because we can access it from anywhere of the world. It is very helpful for our daily life.

That is why I choose subject of my report **is "WEBSITE DESIGN AND DEVELOPMENT".**. Solving real life problems was another key issue. This report takes us through all the details of WEBSITE DESIGN AND DEVELOPMENT knowledge and experience gathered during this internship period..

Contents

1. Introduction

An electronic calculator is typically a portable electronic device used to perform calculations, ranging from basic arithmetic to complex mathematics.

The first solid-state electronic calculator was created in the early 1960s. Pocket-sized devices became available in the 1970s, especially after the Intel 4004, the first microprocessor, was developed by Intel for the Japanese calculator company Busicom.

Modern electronic calculators vary from cheap, give-away, credit-card-sized models to sturdy desktop models with built-in printers. They became popular in the mid-1970s as the incorporation of integrated circuits reduced their size and cost. By the end of that decade, prices had dropped to the point where a basic calculator was affordable to most and they became common in schools.

Computer operating systems as far back as early Unix have included interactive calculator programs such as dc and hoc, and interactive BASIC could be used to do calculations on most 1970s and 1980s home computers. Calculator functions are included in most smartphones, tablets and personal digital assistant (PDA) type devices.

In addition to general purpose calculators, there are those designed for specific markets. For example, there are scientific calculators which include trigonometric and statistical calculations. Some calculators even have the ability to do computer algebra. Graphing calculators can be used to graph functions defined on the real line, or higher-dimensional Euclidean space. As of 2016, basic calculators cost little, but scientific and graphing models tend to cost more.

With the very wide availability of smartphones and the like, dedicated hardware calculators, while still widely used, are less common than they once were. In 1986, calculators still represented an estimated 41% of the world's general-purpose hardware capacity to compute information. By 2007, this had diminished to less than 0.05

2. Basic function

The following keys are common to most pocket calculators. While the arrangement of the digits is standard, the positions of other keys vary from model to model; the illustration is an example.

Usual basic pocket calculator layout

MC	MR	M−	M+
C	±	%	√
7	8	9	÷
4	5	6	×
1	2	3	−
0	.	=	+

Calculator buttons and their meanings

MC or CM	**M**emory **C**lear
MR, RM, or MRC	**M**emory **R**ecall
M−	**M**emory **Subtraction**
M+	**M**emory **Addition**
C or AC	**A**ll **C**lear
CE	**C**lear (last) **E**ntry; sometimes called CE/C: a first press clears the last entry (CE), a second press clears all (C)
± or CHS	Toggle positive/negative number aka **CH**ange **S**ign
%	Percent
÷	Division
×	Multiplication
−	Subtraction
+	Addition

.	Decimal point
√	Square root
=	Result

The arrangement of digits on calculator and other numeric keypads with the 7-8-9 keys two rows above the 1-2-3 keys is derived from calculators and cash registers. It is notably different from the layout of telephone Touch-Tone keypads which have the 1-2-3 keys on top and 7-8-9 keys on the third row.

3. System requirements specifications

3.1 System configurations

The software requirement specification can produce at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refinedby established a complete information description, a detailed functional description, a representation of system behavior, and indication of performance and design constrain, appropriate validate criteria, and other information pertinent to requirements.

3.2 Software requirements:

Operating System: Windows

Coding Language: HTML, CSS,JavaScript,

Tools used:Visual studio Code

3.3 Hardware Requirements:

Processor	: Intel core i5
Memory	: 16GB RAM
Hard Disk	: 512GB

4.Technology

4.1 HTML

HTML is the standard mark-up language for creating Web pages. HTML stands for Hyper Text Mark-up Language.HTML describes the structure of Web pages using mark-upHTML elements are the building blocks of HTML pages HTML elements are represented by tags

HTML tags label pieces of content such as "heading", "paragraph", "table", and so onHTML standsfor Hyper Text Markup Language.HTML is the most widely used language to write web pages.Hypertext refers to the way in which web pages are linked together. Thus, the link available on a webpage is called Hypertext.

As its name suggests, HTML is a Markup language which means you use HTML to simply mark-up a text document with tags that tell a web browser how to structure it to display.HTML was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers.HTML is a markup language and makes use of various tags to format the content. These tags are enclosed within angle braces „<tag name>“. Except some tags, most of the tags have their corresponding closing tags.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects, such as interactive from, may be embedded into the rendered page. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other item document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript which affect the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997

4.2 CSS

CSS means “Cascading Style Sheets”.

CSS was invented by Harken Whim Lie on October 10, 1994 and maintained through a group of people within the W3C called the CSS working group.It is a simple language intended to simplify the process of making web pages presentable. It handles the part of Look and Feel of webpage.

CSS is a style sheet language used for describing the presentation of a document written in a mark-up language. Although most often used to set the visual style of web pages and user interfaces written in HTML and XHTML, the language can be applied to any XML document, including plain XML, SVG and XUL, and is applicable to rendering in speech, or on other media. Along with HTML and JavaScript, CSS is a cornerstone technology used by most websites to create visually engaging webpages, user interfaces for web applications, and user interfaces for many mobile applications.

CSS is designed primarily to enable the separation of presentation and content, including aspects such as the layout, colours, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, and enable multiple HTML pages to share formatting by specifying the relevant CSS in a separate. CSS file, and reduce complexity and repetition in the structural content.

Separation of formatting and content makes it possible to present the same mark-up page in different styles for different rendering methods, such as on-screen, in print, by voice, and on Braille-based tactile devices. It can also display the web page differently depending on the screen size or viewing device. Readers can also specify a different style sheet, such as a CSS file stored on their own computer, to override the one the author specified.

Changes to the graphic design of a document can be applied quickly and easily, by editing a few lines in the CSS file they use, rather than by changing mark up in the documents.The CSS specification describes a priority scheme to determine which style rules apply if more than one rule matches against a particular element. In this so-called *cascade*, priorities are calculated and assigned to rules, so that the results are predictable.

You can control the colour of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colours are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

CSS provides powerful control over the presentation of an HTML document, it is combined with the markup languages HTML OR XHTML

Advantages of CSS:

CSS saves time:

It can be written once and can be reused any number of times in building pages.

Easy maintenance:

To make a global change, simply change the style and all elements in the webpages update automatically.

Platform independence:

The script offers consistent platform independence and can support latest browsers also.

4.3 JSP

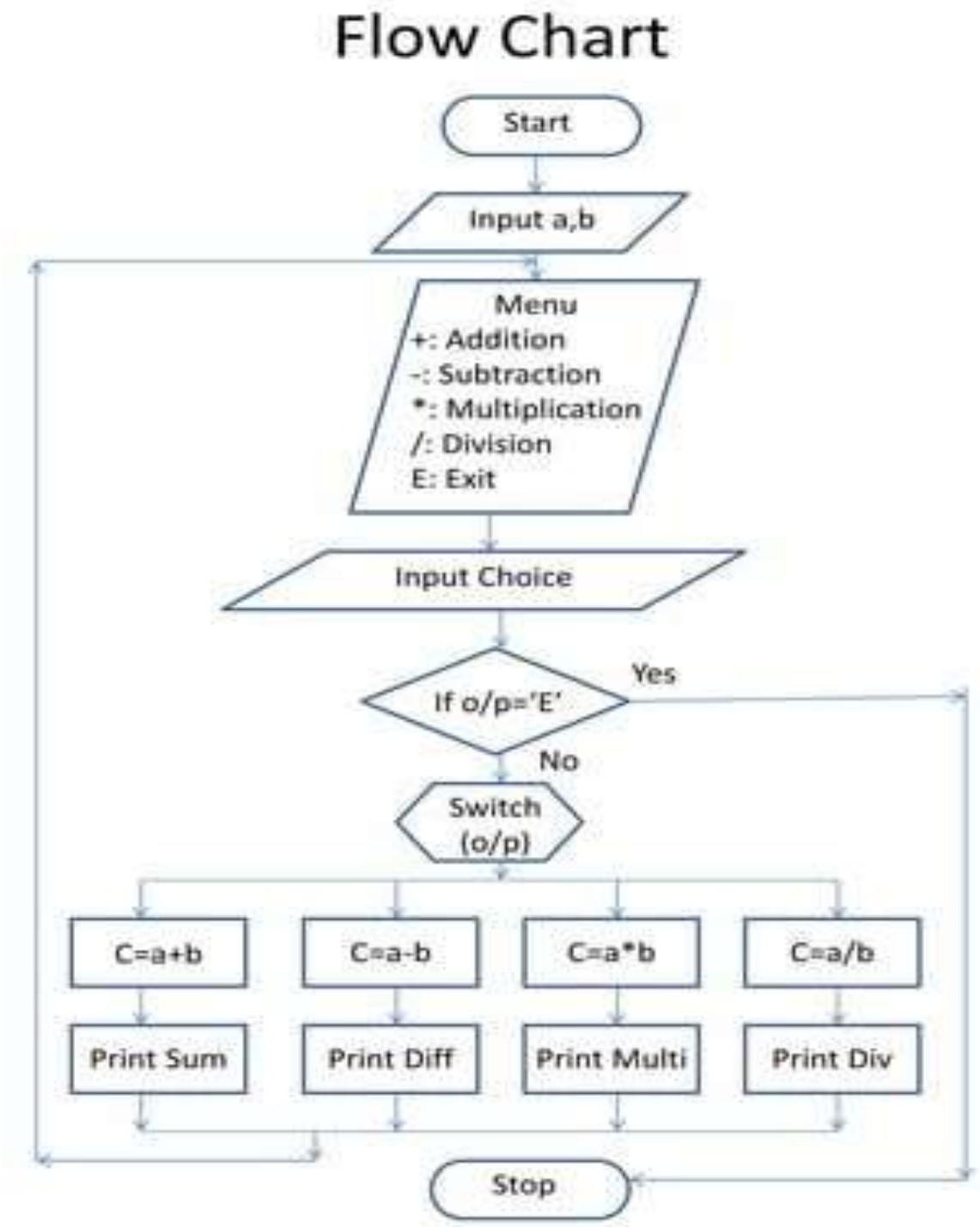
Java Server Pages (JSP) is a technology released in 1999 by Sun Microsystems, JSP is similar to PHP and ASP, but it uses the Java Programming language.Java Server Pages (JSP) is a server-side programming technology that enables the creation of dynamic, platform-independent method for building web-based applications.

JSP have access to the entire family of java APIs, including the JDBC API to access enterprise databases.This helps developers insert java code in HTML pages by making use of special JSP tags, most of which start with <% and end with %>.

Java Server Pages often serve the same purpose as programs implemented using the Common Gateway Interface (CGI). But JSP offers several advantages in comparison with the CGI. Performance is significantly better because JSP allows embedding Dynamic Elements in HTML Pages itself instead of having separate CGI files.

JSP are always compiled before they are processed by the server unlike CGI/Perl which requires the server to load an interpreter and the target script each time the page is requested. Java Server Pages are built on top of the Java Servlets API, so like Servlets, JSP also has access to all the powerful Enterprise Java APIs, including JDBC**,** JNDI**,** EJB**,** JAXP**,** etc.JSP pages can be used in combination with servlets that handle the business logic, the model supported by Java servlet template engines.

5. Flowchart


Flow Chart
Start
Input a,b
Menu
+: Addition
-: Subtraction
*: Multiplication
/: Division
E: Exit
Input Choice
If o/p='E'
Yes
No
Switch (o/p)
C=a+b
C=a-b
C=a*b
C=a/b
Print Sum
Print Diff
Print Multi
Print Div
Stop

6.Coding

Calculator program

1)Frontened

a)HTML

```
<!DOCTYPE html>
<html>
   <head>
      <title>Shanzey</title>


<link rel="stylesheet" href="style.css">

   </head>
   <body >

     <div class="calculator">
       <h1>CASIO</h1>
       <div> <input type="text" id="shanzey" class="shanzey-screen" />

       </div>


 <table class="basic-keys">

   <tr>
      <td><button class="a" onclick="handlekeypress('(')">(</button> </td>
```

```
        <td><button class="a" onclick="handlekeypress(')")">) </button></td>
        <td><button class="green equals " onclick="handlekeypress('=')">= </button></td>
        <td><button class="b" class="del "
onclick="handlekeypress('clear')">DEL</button></td>
        <td><button class="pink ac " onclick="handlekeypress('clear')">AC</button></td>
      </tr>

  <tr>
    <td><button onclick="handlekeypress('7')">7</button> </td>
    <td><button onclick="handlekeypress('8')">8 </button></td>
    <td><button onclick="handlekeypress('9')">9 </button></td>
    <td><button class="a" onclick="handlekeypress('%')">%</button></td>
    <td><button class="a" onclick="handlekeypress('/')">/</button></td>
  </tr>

  <tr>
  <td><button onclick="handlekeypress('4')">4 </button></td>
  <td><button onclick="handlekeypress('5')">5 </button></td>
  <td><button onclick="handlekeypress('6')">6 </button></td>
  <td><button class="a" onclick="handlekeypress('*')">x</button></td>
  <td><button  class="a" onclick="handlekeypress('/')">&divide;</button></td>
  </tr>

  <tr>
    <td><button  onclick="handlekeypress('1')">1 </button></td>
    <td><button  onclick="handlekeypress('2')">2</button></td>
    <td><button onclick="handlekeypress('3')">3 </button></td>
    <td><button class="a" onclick="handlekeypress('+')">+</button></td>
    <td><button class="a" onclick="handlekeypress('-')">-</button></td>
  </tr>
```

```
  <tr>
    <td><button  onclick="handlekeypress('00')">00</button></td>
    <td><button  onclick="handlekeypress('0')">0</button></td>
    <td><button  onclick="handlekeypress('.')">.</button> </td>
     <td  colspan="2"><button      class="green  ans  enter"  onclick="handlekeypress('=')"
>Enter</button>
     </td>
</tr>
</table>
</div>
<script src="script.js"></script>
  </body>
</html>
```

b)CSS

```
   .calculator{
       width:400px;
       height:630px;
       background:rgb(75, 10, 75);

     margin-left: 460px;
     margin-right:30px;
     margin-top: 30px;
     margin-bottom: 30px;
       border-top-left-radius:10px;
       border-top-right-radius:10px;
       border-bottom-left-radius:10px;
       border-bottom-right-radius:10px;
```

```
    position: absolute;
    padding:1.5rem;

}

h1{
    color:rgb(226, 43, 208);
    font-size: 34px;
}
.shanzey-screen{
    width:90%;
    height:5rem;
    background:hsl(309, 50%, 87%);
    border-radius:4px;
    box-shadow:inset 0 0 5px black;
    margin:1em 0;
    color:black;
    font-size: 1.5rem;

    margin-left:10px;
    margin-top: 10px;
    margin-bottom: 40px;
    margin-right: 30px;
}

button{
  text-align:center;
  cursor:pointer;
  padding:2px;
  border:3px white double;
  box-sizing:border-box;
  color:black;
```

```
    position:relative;
    box-shadow: hsla(0, 13%, 92%, 0.75);
 font-size: 24px;

  }
  table{
    width:100%;
    border-collapse:collapse;
  }
  td{
    text-align:center;

  }


.button.nav{
position: absolute;
background:none;
box-shadow:none;
}

.basic-keys {}
.basic-keys button{
width: 3.5rem;
height:3.75rem;
background:white;

border-radius:3px 3px;
}

.basic-keys td{
  padding-bottom:1.3rem;
```

```
    padding-right: 0.18rem;
}
.basic-keys tr:last-child td{
padding-bottom:50px;

}
button.pink{
background:hsl(353, 95%, 50%);



}
button.b{
background-color: orangered;
}

button.green{
    background-color: rgb(13, 241, 74);
}

button.a{
    background-color: chocolate;
    border-style:4rem double white;
}

button.enter{
    width:150px;
}
button:hover{
background-color: rgb(13, 241, 74);
color:black;
border-style: groove;
border-radius: 30%;
```

```
}
button::before,button::after{
position: absolute;
font-size:9px;
top:-13px;
display:block;
width:100%;
display:inline-block;
}
button::before{
color:white;
left:0;
text-align:left;
}
button::after{
color:hsl(144, 50%, 70%);
right:0;
text-align:right;
}
```

2)Backend

Javascript

```
function handlekeypress(key)
{

  const inputScreen=document.getElementById("shanzey");
  if(key=='=')
  {
  inputScreen.value =eval(inputScreen.value);
```

```
}
else if(key=="clear")
{
 inputScreen.value=" ";
}

else {

 inputScreen.value += key;
 }

}
```

7.Screenshot

Output

8. Conclusion

As a conclusion, I can say that this project was a great experience. Thanks to this project, I acquired deeper knowledge concerning my technical skills but I also personally benefited. Currently PHP pages are a common part of web applications, and one of the most popular language for web development used by developers worldwide. I learn to live in a different environment from the one I am used to.

Indeed, I grew more independent in work and also in everyday life. I realized that I could do more things than I thought like learning new things by myself. There are huge opportunities available for the students who want to work in this field. Many private and public organizations hire web designer for their online work and website development. With the rapid advent of online industry, the demand of web development professionals is increasing and this has created a huge job opportunity for the aspirants in the upcoming days.

Also an experienced person in this field can also work as a freelancer; there are many online companies which provide online projects to the individuals.

Use in Education

In most countries, students use calculators for schoolwork. There was some[*by whom?*] initial resistance to the idea out of fear that basic or elementary arithmetic skills would suffer There remains disagreement about the importance of the ability to perform calculations *in the head*, with some curricula restricting calculator use until a certain level of proficiency has been obtained, while others concentrate more on teaching estimation methods and problem-solving. Research suggests that inadequate guidance in the use of calculating tools can restrict the kind of mathematical thinking that students engage in. Others have argued that calculator use can even cause core mathematical skills to atrophy, or that such use can prevent understanding of advanced algebraic concepts. In December 2011 the UK's Minister of State for Schools, Nick Gibb, voiced concern that children can become "too dependent" on the use of calculators.

As a result, the use of calculators is to be included as part of a review of the Curriculum. In the United States, many math educators and boards of education have enthusiastically endorsed the National Council of Teachers of Mathematics (NCTM) standards and actively promoted the use of classroom calculators from kindergarten through high school

Future Scopes

Especially if I don't have any experience. Finding work can be a real challenge. A successful internship can help me turn an experience into a career opportunity. So as a successful internship my future scopes will be:

- To be work IT company.
- Can work as a Software Engineer
- Can work as a Web Designer.
- Can work as a Web Developer.
- Can work as a QA Tester.

9. Bibliography

9.1 References

1 HTML and CSS: The Comprehensive Guide – by Jürgen Wolf

2 Get Coding!: Learn HTML, CSS & JavaScript & Build a Website, App & Game – by Young Rewired State

3 JavaScript: The Good Parts by Douglas Crockford

9.2 Weblinks

1. To learn about the software required to use, we used,www.wikipidea.org.
2. For more examples for learning, we referred,www.tutorialpoint.com.\
3. For learning the html,css,javascript, we referred,www.w3schools.com.