Mini Project – 2 A Web Based Business Model

UNIT CONVERSION TOOL

2 A Web Based
Business Model

(SEMESTER V)

submitted in
partial fulfillment of requirement for the award
of degree of

Bachelor of Engineering

in
Information Technology

by

DONGARKAR BIBI ZAINAB KHALIL
GHADSHI RAHUL BABAN
NAIK REENAL SHARAD
PALKAR POORVA ANAND

Guided by

Prof. Amar Palwankar

Department of Information Technology
Finolex Academy of Management and Technology, Ratnagiri

ACADEMIC YEAR 2022-2023

Declaration

We, hereby declare that, the Mini Project titled **"UNIT CONVERSION TOOL"** submitted herein has been carried out by us in the Department of Information Technology at Finolex Academy of Management and Technology, Ratnagiri.

Name of the students:
1. Dongarkar Bibi Zainab Khalil
2. Ghadshi Rahul Baban
3. Reenal Sharad Naik
4. Poorva Anand Palkar

Date:

Certificate

The Mini Project titled " **UNIT CONVERSION TOOL ”** is submitted by **“ Dongarkar Bibi Zainab Khalil, Ghadshi Rahul Baban, Naik Reenal Sharad, Palkar Poorva Anand ”** in the completion of TE Bachelor in Information Technology, has been carried out under my supervision at the **Department of Information Technology** at **Finolex Academy of Management and Technology, Ratnagiri** .The work is comprehensive, complete and fit for evaluation.

Examiner

Prof. Amar R Palwankar
Assistant Professor,
Department of Information Technology,
FAMT, Ratnagiri

INDEX

CHAPTER 1: INTRODUCTION

In this project a simple unit conversion tool website is created, which enables us to perform different unit operations. The Unit Conversion Tool is a simple project developed using JavaScript, CSS, and HTML. It's basic web based application to help us understand how different unit operation performs using different methods in JavaScript programming code. In this project we have implemented program using JavaScript used Label, Text Field and used different components. And apply styles and background color using CSS. Unit converter is a Web-based mini-project. This straightforward application offers a web-based interface for exchanging/converting Unit from one decimal value to Different types of units, Such application can be used by any user, but it is mainly useful for business, shares, and finance related areas.

Talking about the features of this system, the use can convert the number into different units of weight, length and temperature as well. You just have to type the number in the text field and click on the weight field for weight convertor and so on. This project includes a lot of JavaScript for making the functioning of the project.

LITERATURE REVIEW

CITATION	OBJECTIVES	METHODOLOGY	CONCLUSION
Kenneth S. Butcher Linda D. Crown Elizabeth J. Gentry Weights and Measures Division Carol Hockert, Chief National Institute of Standards and Technology Special Publications 1038 Natl. Inst. Stand. Technol. Spec. Pub. 1038, 24 pages (May 2006)	This publication provides guidance on the use of the International System of Units (SI) to ensure uniformity with the weights and measures usage in the commercial measurement system and in other applications.	The whole process of calculating unit and evaluating their value after the conversion.	This reports gives detailed requirements for the selection of units. The subsections list conversion factors to the appropriately sized metric unit, either an SI unit with appropriate prefix or a non-SI unit that is accepted for use with SI. Government agencies and industry may develop supplemental lists of accepted units applicable to their special fields.
Department of Computer Sciences University of Texas, Austin, TX 78712 Copyright © 1995 by IEEE. ol. 21, no. 8 (August 1995), pp. 651-661.	Algorithms are presented for converting units of measurement from a given form to a desired form. The algorithms are fast, are able to convert any combination of units to any equivalent combination, and perform dimensional analysis to ensure that the conversion is legitimate.	The whole process of calculating unit and evaluating their value after the conversion.	We have described algorithms for conversion of units, for compiler checking of units used in arithmetic operations and for coercing units when necessary, and for symbolic simplification of combinations of units. The unit conversion algorithms are as simple as possible. they require only one multiply or divide per unit for conversion, and one add or subtract per unit for dimension checking.

SOFTWARE AND HARDWARE REQUIREMENTS

Hardware requirements :

- Desktop PC or a Laptop
- Printer
- Operating System – Windows 10
- Intel® CoreTM i3-6006U CPU @ 2.00GHz
- 4.00 GB RAM
- 64-bit operating system, x64 based processor
- 1024 x 768 monitor resolution
- Keyboard and Mouse

Software requirements :

- Operating System Windows 10
- Front End HTML, CSS
- Back End JavaScript

Mini Project – 2 A WEEKLY GANTT CHART

GROUP ID:

CLASS: TE IT

SUBJECT NAME: Web Based Business Model 2A

PROJECT NAME: UNIT CONVERSTION TOOL

PROJECT MEMBERS : 08- DONGARKAR BIBI ZAINAB KHALIL
13 - RAHUL BABAN GHADSHI
40-REENAL SHARAD NAIK
44 - POORVA ANAND PALKAR

DEPARTMENT: INFORMATION TECHNOLOGY

Project Guide Name: Prof. Amar Palwankar

Task name	Start date	End date	Assigned to	Progress	K 1	K 2	K 3	K 5	K 6	K 7	K 8	K 9	K 10	K 11	K 12	K 13	K 14	K 15	K 16
PROJECT TASK 1 DETAILS	17/09/2021	24/04/2021	**MEMBER NAME**																
Form a group of 3 to 4 members	09/07/2022	16/07/2022	DONGARKAR BIBI ZAINAB KHALIL GHADSHI RAHUL BABAN REENAL SHARAD NAIK POORVA ANAND PALKAR	100%															
Conduct a literature survey	16-07-2022	23-07-2022																	
PAPER1			ZAINAB DONGARKAR	100%															
PAPER 2			RAHUL GHADSHI POORVA PALKAR	100%															
Convert needs into problems	23/7/2022	30/7/2022	ZAINAB DONGARKAR	100%															
Implementation Plan in the form of Gannt Chart	30/7/2022	6/8/2022	POORVA PALKAR REENAL NAIK	100%															
A Log Book to be prepared by each group	13/8/2022	20/8/2022	RAHUL GHADSHI	100%															
Students in group shall understand problem effectively	20/08/2022	27/8/2022	DONGARKAR BIBI ZAINAB KHALIL GHADSHI RAHUL BABAN REENAL SHARAD NAIK POORVA ANAND PALKAR	100%															
Convert best solution into working model	27/8/2022	3/9/2022	REENAL NAIK POORVA PALKAR RAHUL GHADSHI	100%															
Convert best solution into working model and demonstrate	3/9/2022	10/9/2022	ZAINAB DONGARKAR	100%															
Convert best solution into working model and demonstrate	3/9/2022	10/9/2022	RAHUL GHADSHI	100%															
Convert best solution into working model and demonstrate	3/9/2022	10/9/2022	REENAL NAIK	100%															
Convert best solution into working model and demonstrate	10/9/2022	17/9/2022	POORVA PALKAR	100%															
Convert best solution into working model and demonstrate	10/9/2022	17/9/2022	REENAL NAIK POORVA PALKAR RAHUL GHADSHI	100%															
Convert best solution into working model and demonstrate	10/9/2022	17/9/2022	ZAINAB DONGARKAR POORVA PALKAR RAHUL GHADSHI	100%															
Valided with proper justification and report to be complete in stand form	10/9/2022	17/9/2022	REENAL NAIK POORVA PALKAR ZAINAB DONGARKAR	100%															

COMPLETED TASK

PENDING TASK

SOURCE CODE

Main.js

```
// mass, length, temperature

// Input output
const inputField = document.getElementById('input');
const outputWeight = document.getElementById('output-weight');
const outputLength = document.getElementById('output-length');
const outputTemp = document.getElementById('output-temp');

// Weight variables
const lbsOutput = document.getElementById('lbsOutput');
const kgsOutput = document.getElementById('kgsOutput');
const stOutput = document.getElementById('stOutput');
const gmOutput = document.getElementById('gmOutput');
const ozOutput = document.getElementById('ozOutput');

// Length variables
const mmOutput = document.getElementById('mmOutput');
const cmOutput = document.getElementById('cmOutput');
const inOutput = document.getElementById('inOutput');
const ftOutput = document.getElementById('ftOutput');
const mOutput = document.getElementById('mOutput');

// Temperature variables
const cOutput = document.getElementById('cOutput');
const fOutput = document.getElementById('fOutput');
const kOutput = document.getElementById('kOutput');



const btnGroup = document.getElementById('main');
btnGroup.addEventListener('click', button =>{
	if (button.target.matches('button')){
		const btn = button.target;
		const btnValue = btn.textContent;

		if (btn.classList.contains('btn-group-weight')){
			outputWeight.style.visibility = 'visible';
			outputLength.style.visibility = 'hidden';
			outputTemp.style.visibility = 'hidden';

		} else if (btn.classList.contains('btn-group-length')){
			outputWeight.style.visibility = 'hidden';
			outputLength.style.visibility = 'visible';
			outputTemp.style.visibility = 'hidden';
```

```
} else if (btn.classList.contains('btn-group-temp')){
        outputWeight.style.visibility = 'hidden';
        outputLength.style.visibility = 'hidden';
        outputTemp.style.visibility = 'visible';
}


if (btnValue === 'Lbs'){
        inputField.placeholder = 'Enter Pounds';
        inputField.addEventListener('input', convertLbs);
        convertLbs();


} else if (btnValue ==='Kgs'){
        inputField.placeholder = 'Enter Kilograms';
        inputField.addEventListener('input', convertKgs);
        convertKgs();

} else if (btnValue === 'St'){
        inputField.placeholder = 'Enter Stone';
        inputField.addEventListener('input', convertSt);
        convertSt();

} else if (btnValue === 'Gm'){
        inputField.placeholder = 'Enter Grams';
        inputField.addEventListener('input', convertGm);
        convertGm();

} else if (btnValue === 'Oz'){
        inputField.placeholder = 'Enter Ounces';
        inputField.addEventListener('input', convertOz);
        convertOz();

} else if (btnValue === 'Mm'){
        inputField.placeholder = 'Enter Milimeters';
        inputField.addEventListener('input', convertMm);
        convertMm();

} else if (btnValue === 'Cm'){
        inputField.placeholder = 'Enter Centimeters';
        inputField.addEventListener('input', convertCm);
        convertCm();

}  else if (btnValue === 'In'){
        inputField.placeholder = 'Enter Inches';
        inputField.addEventListener('input', convertIn);
        convertIn();

}  else if (btnValue === 'Ft'){
```

```
                inputField.placeholder = 'Enter Feet';
                inputField.addEventListener('input', convertFt);
                convertFt();

        }  else if (btnValue === 'M'){
                inputField.placeholder = 'Enter Meters';
                inputField.addEventListener('input', convertM);
                convertM();

        }       else if (btnValue === 'C'){
                inputField.placeholder = 'Enter Celsius';
                inputField.addEventListener('input', convertC);
                convertC();

        }       else if (btnValue === 'F'){
                inputField.placeholder = 'Enter Fahrenheit';
                inputField.addEventListener('input', convertF);
                convertF();

        }       else if (btnValue === 'K'){
                inputField.placeholder = 'Enter Kelvin';
                inputField.addEventListener('input', convertK);
                convertK();
        }
    }
})


//conversion functions
function convertLbs(){
    let input = inputField.value;

    if (!input){
        return;
    } else {
        lbsOutput.textContent = input;
        kgsOutput.textContent = Math.floor((input * 0.453592) * 10000) / 10000;
        stOutput.textContent = Math.floor((input / 14) * 10000) / 10000;
        gmOutput.textContent = Math.floor((input * 453.59237) * 10000) / 10000;
        ozOutput.textContent = Math.floor((input * 16) * 10000) / 10000;
    }

        // set length out put fields to 0
        // set temp output fields to 0
        // or change visibility of output cards to  hidden.
}

function convertKgs(){
    let input = inputField.value;
```

```
        if (!input){
                return;
        } else {
                lbsOutput.textContent = Math.floor((input * 2.2046) * 10000) / 10000;
                kgsOutput.textContent = input;
                stOutput.textContent = Math.floor((input * 0.15747) * 10000) / 10000;
                gmOutput.textContent = Math.floor(input * 1000);
                ozOutput.textContent = Math.floor((input * 35.27396) * 10000) / 10000;
        }
}

function convertSt(){
        let input = inputField.value;

        if (!input){
                return;
        } else {
                lbsOutput.textContent = Math.floor((input * 14) * 10000) / 10000;
                kgsOutput.textContent = Math.floor((input / 0.15747) * 10000) / 10000;
                stOutput.textContent = input;
                gmOutput.textContent = Math.floor((input * 6350.29) * 10000) / 10000;
                ozOutput.textContent = Math.floor((input * 224) * 10000) / 10000;
        }
}

function convertGm(){
        let input = inputField.value;

        if (!input){
                return;
        } else {
                lbsOutput.textContent = Math.floor((input * 0.00220462) * 10000) / 10000;
                kgsOutput.textContent = input / 1000.00;
                stOutput.textContent = Math.floor((input * 0.000157473) * 10000) / 10000;
                gmOutput.textContent = input;
                ozOutput.textContent = Math.floor((input * 0.035274) * 10000) / 10000;
        }
}

function convertOz(){
        let input = inputField.value;

        if (!input){
                return;
        } else {
                lbsOutput.textContent = Math.floor((input * 0.0625) * 10000) / 10000;
                kgsOutput.textContent = Math.floor((input * 0.0283495) * 10000) / 10000;
                stOutput.textContent = Math.floor((input * 0.00446429) * 10000) / 10000;
                gmOutput.textContent = Math.floor((input * 28.3495) * 10000) / 10000;
                ozOutput.textContent = input;
```

```
        }
    }
    function convertMm(){
        let input = inputField.value;

        if (!input){
            return;
        } else {
            mmOutput.textContent = input;
            cmOutput.textContent = Math.floor((input / 10) * 10000) / 10000;
            inOutput.textContent = Math.floor((input / 25.4) * 10000) / 10000;
            ftOutput.textContent = Math.floor((input / 304.8) * 10000) / 10000;
            mOutput.textContent = Math.floor((input / 1000) * 10000) / 10000;
        }
    }
    function convertCm(){
        let input = inputField.value;

        if (!input){
            return;
        } else {
            mmOutput.textContent = Math.floor((input * 10) * 10000) / 10000;
            cmOutput.textContent = input;
            inOutput.textContent = Math.floor((input / 2.54) * 10000) / 10000;
            ftOutput.textContent = Math.floor((input / 30.48) * 10000) / 10000;
            mOutput.textContent = Math.floor((input / 100) * 10000) / 10000;
        }
    }
    function convertIn(){
        let input = inputField.value;

        if (!input){
            return;
        } else {
            mmOutput.textContent = Math.floor((input * 25.4) * 10000) / 10000;
            cmOutput.textContent = Math.floor((input * 2.54) * 10000) / 10000;
            inOutput.textContent = input;
            ftOutput.textContent = Math.floor((input / 12) * 10000) / 10000;
            mOutput.textContent = Math.floor((input / 39.37) * 10000) / 10000;
        }
    }

    function convertFt(){
        let input = inputField.value;

        if (!input){
            return;
        } else {
            mmOutput.textContent = Math.floor((input * 304.8) * 10000) / 10000;
            cmOutput.textContent = Math.floor((input * 30.48) * 10000) / 10000;
```

```
            inOutput.textContent = Math.floor((input * 12) * 10000) / 10000;
            ftOutput.textContent = input;
            mOutput.textContent = Math.floor((input / 3.281) * 10000) / 10000;
        }
}

function convertM(){
        let input = inputField.value;

        if (!input){
            return;
        } else {
            mmOutput.textContent = Math.floor((input * 1000) * 10000) / 10000;
            cmOutput.textContent = Math.floor((input * 100) * 10000) / 10000;
            inOutput.textContent = Math.floor((input * 39.3701) * 10000) / 10000;
            ftOutput.textContent = Math.floor((input * 3.281) * 10000) / 10000;
            mOutput.textContent = input;
        }
}

function convertC(){
        let input = inputField.value;

        if (!input){
            return;
        } else {
            cOutput.textContent = input
            fOutput.textContent = Math.floor((input * (9/5) + 32) * 100) / 100;
            kOutput.textContent = Math.floor((+input + 273.15) * 100) / 100;
        }
}

function convertF(){
        let input = inputField.value;

        if (!input){
            return;
        } else {
            cOutput.textContent = Math.floor(((input - 32) * (5/9)) * 100) / 100;
            fOutput.textContent = input;
            kOutput.textContent = Math.floor((((input - 32) * (5/9)) + 273.15) * 1000) /
1000;
        }
}
function convertK(){
        let input = inputField.value;

        if (!input){
            return;
        } else {
```

```
                cOutput.textContent = Math.floor((input - 273.15) * 100) / 100;
                fOutput.textContent = Math.floor(((input - 273.15) * (9/5) + 32) * 100) / 100;
                kOutput.textContent = input;
            }

        }
```

Style.css

```
html {
  margin: 0;
  padding: 0;
  font-family: 'Montserrat', sans-serif;
  background-color: #DDA0DD;
}

.hidden {
        visibility: hidden;
}

.form-control {
        width: 250px;
}
```

Index.html

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
 <head>
   <meta charset="utf-8">
   <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=yes">
   <meta name="description" content="A conversion tool built with JavaScript">
   <meta name="author" content="THE USER CAN EASILY CONVERT THE NUMBER INTO DIFFERENT
UNITS!!!">
   <title>Conversion Tool</title>
   <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.1.3/css/bootstrap.min.css"
integrity="sha384-
MCw98/SFnGE8fJT3GXwEOngsV7Zt27NXFoaoApmYm81iuXoPkFOJwJ8ERdknLPMO"
crossorigin="anonymous">
   <link href="style.css" rel="stylesheet" type="text/css">
   <link href="https://fonts.googleapis.com/css?family=Montserrat" rel="stylesheet">
 </head>
 <body>
   <!-- Navigation -->
   <nav class="navbar navbar-dark bg-dark fixed-top">
     <a class="navbar-brand" href="./index.html">Third Year Mini-Project</a>
     <div class="navbar-expand" id="navbarResponsive">
      <ul class="navbar-nav ml-auto">
        <li class="nav-item active">

        </li>
      </ul>
     </div>

   </nav>

   <!-- Page Content -->
   <section>
    <div class="jumbotron jumbotron-fluid pb-1">
     <div class="container-fluid">
        <h1 class="display-5">Conversion Tool</h1>
        <p class="lead text-muted">A unit conversion tool built with JavaScript and Bootstrap.</p>
     </div>
    </div>
   </section>
```

```
  <section>

    <div id="main" class="container justify-content-center text-center">


      <!-- input field -->
      <div class="row justify-content-center">
        <form>
            <div class="form-group mb-3">
             <input id="input" type="number" class="form-control form-control-lg text-center"
placeholder="Enter Value">
            </div>
          </form>
      </div>

      <div class="row ">
       <!-- Start Mass Converter -->
       <div id="weight" class="col">
        <h1 class="display-5 text-center ">Weight</h1>
        <div class="btn-group btn-group-lg mb-2" role="group" aria-label="Mass Units">
         <button type="button" class="btn btn-secondary btn-group-weight" >Lbs</button>
         <button type="button" class="btn btn-secondary btn-group-weight">Kgs</button>
         <button type="button" class="btn btn-secondary btn-group-weight">St</button>
         <button type="button" class="btn btn-secondary btn-group-weight">Gm</button>
         <button type="button" class="btn btn-secondary btn-group-weight">Oz</button>
        </div>



        <div id="output-weight" class="output hidden">

         <div class="card bg-primary text-white mb-3 text-center">
          <div class="card-block m-2">
           <h4>Pounds:</h4>
           <div id="lbsOutput">0</div>
          </div>
         </div>

         <div class="card bg-secondary text-white mb-3 text-center">
          <div class="card-block m-2">
           <h4>Kilograms:</h4>
           <div id="kgsOutput">0</div>
          </div>
         </div>
         <div class="card bg-success text-white mb-3 text-center">
          <div class="card-block m-2">
           <h4>Stone:</h4>
           <div id="stOutput">0</div>
          </div>
```

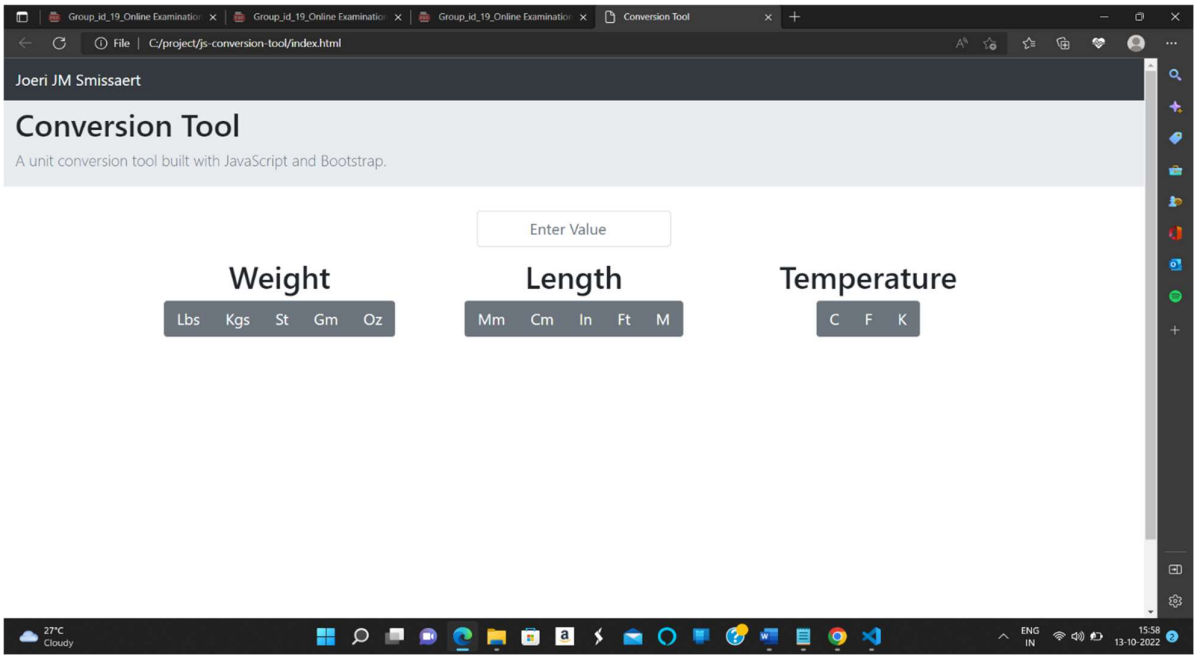
```
    </div>

    <div class="card bg-info text-white mb-3 text-center">
      <div class="card-block m-2">
        <h4>Grams:</h4>
        <div id="gmOutput">0</div>
      </div>
    </div>

    <div class="card bg-dark text-white mb-3 text-center">
      <div class="card-block m-2">
        <h4>Ounces:</h4>
        <div id="ozOutput">0</div>
      </div>
    </div>
  </div>
</div>
<!-- End Mass Converter -->

<!-- Start Length Converter -->
<div id="length" class="col ">
  <h1 class="display-5 text-center">Length</h1>
  <div class="btn-group btn-group-lg mb-2" role="group" aria-label="Length Units">
    <button type="button" class="btn btn-secondary btn-group-length" >Mm</button>
    <button type="button" class="btn btn-secondary btn-group-length">Cm</button>
    <button type="button" class="btn btn-secondary btn-group-length">In</button>
    <button type="button" class="btn btn-secondary btn-group-length">Ft</button>
    <button type="button" class="btn btn-secondary btn-group-length">M</button>
  </div>

  <div id="output-length" class="output hidden">

    <div class="card bg-primary text-white mb-3 text-center">
      <div class="card-block m-2">
        <h4>Milimeters:</h4>
        <div id="mmOutput">0</div>
      </div>
    </div>
    <div class="card bg-secondary text-white mb-3 text-center">
      <div class="card-block m-2">
        <h4>Centimeters:</h4>
        <div id="cmOutput">0</div>
      </div>
    </div>

    <div class="card bg-success text-white mb-3 text-center">
      <div class="card-block m-2">
        <h4>Inches:</h4>
        <div id="inOutput">0</div>
      </div>
```

```
          </div>
          <div class="card bg-info text-white mb-3 text-center">
            <div class="card-block m-2">
              <h4>Feet:</h4>
              <div id="ftOutput">0</div>
            </div>
          </div>

          <div class="card bg-dark text-white mb-3 text-center">
            <div class="card-block m-2">
              <h4>Meters:</h4>
              <div id="mOutput">0</div>
            </div>
          </div>

        </div>
      </div>
       <!-- End Length Converter -->

      <!-- Start Temp Converter -->
      <div id="temp" class="col">
        <h1 class="display-5 text-center ">Temperature</h1>
        <div class="btn-group btn-group-lg mb-2" role="group" aria-label="Length Units">
          <button type="button" class="btn btn-secondary btn-group-temp" >C</button>
          <button type="button" class="btn btn-secondary btn-group-temp">F</button>
          <button type="button" class="btn btn-secondary btn-group-temp">K</button>
        </div>
<div id="output-temp" class="output hidden">

          <div class="card bg-primary text-white mb-3 text-center">
            <div class="card-block m-2">
              <h4>Celsius:</h4>
              <div id="cOutput">0</div>
            </div>
          </div>

          <div class="card bg-secondary text-white mb-3 text-center">
            <div class="card-block m-2">
              <h4>Fahrenheit:</h4>
              <div id="fOutput">0</div>
            </div>
          </div>

          <div class="card bg-info text-white mb-3 text-center">
            <div class="card-block m-2">
              <h4>Kelvin:</h4>
              <div id="kOutput">0</div>
            </div>
          </div>
        </div>
```

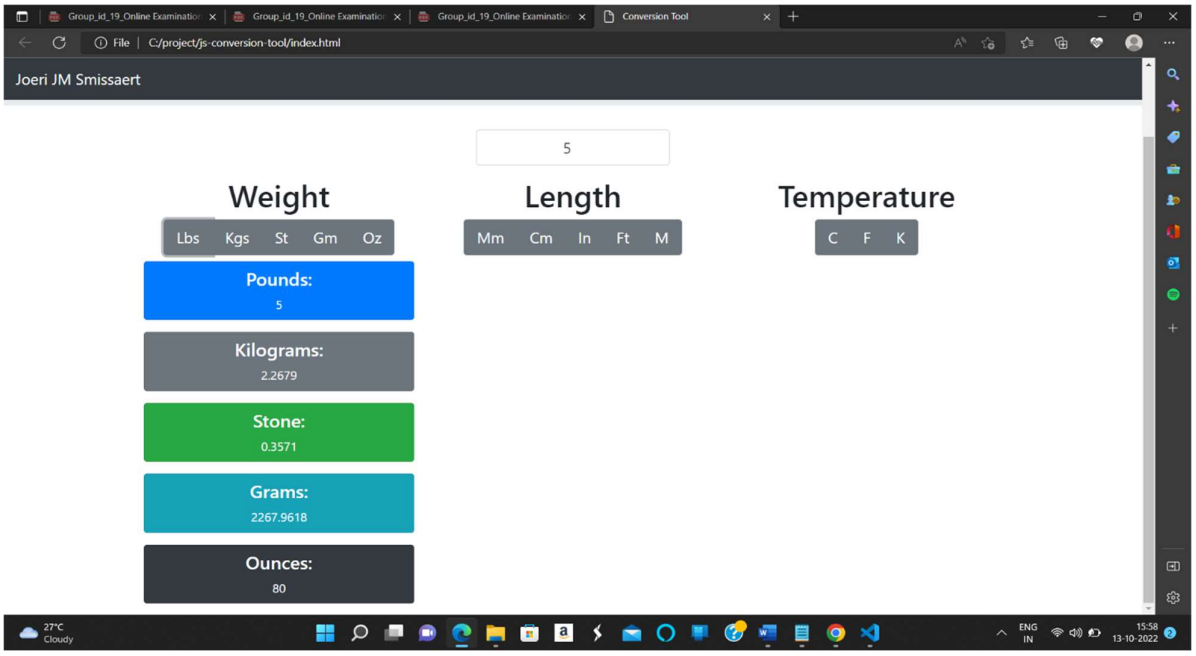
```
        </div>
         <!-- End Temp Converter -->
       </div>
     </div>
   </section>

   <script src="main.js" type="text/JavaScript"></script>

  </body>
</html>
```

OUTPUT SCREEN SHOTS:

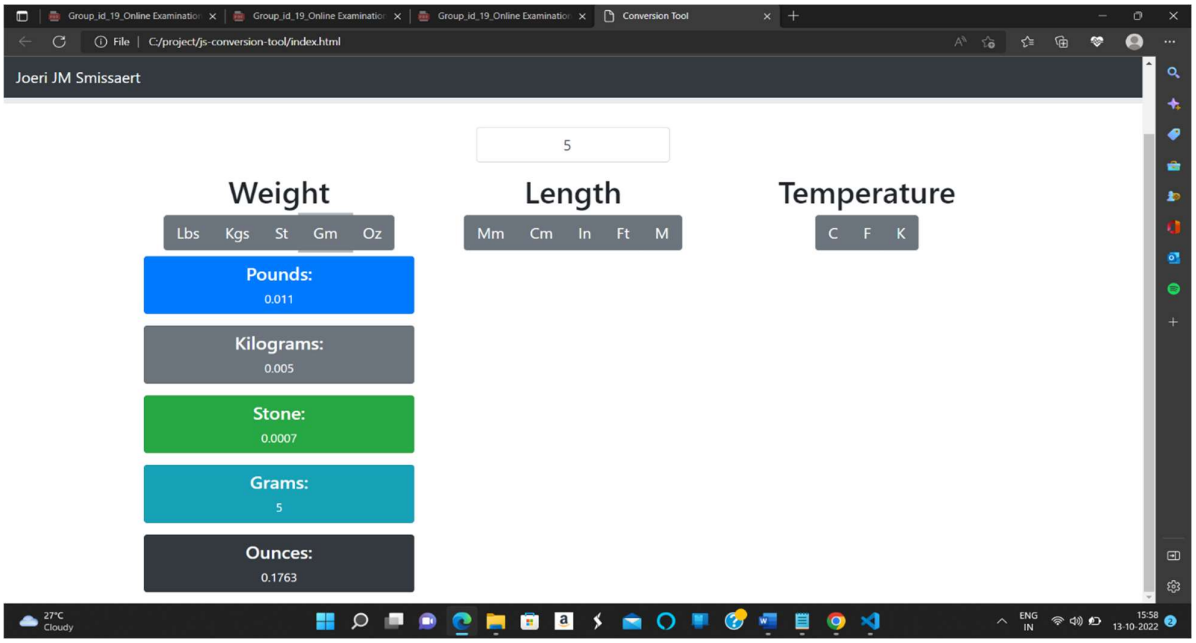
1. Home Page:



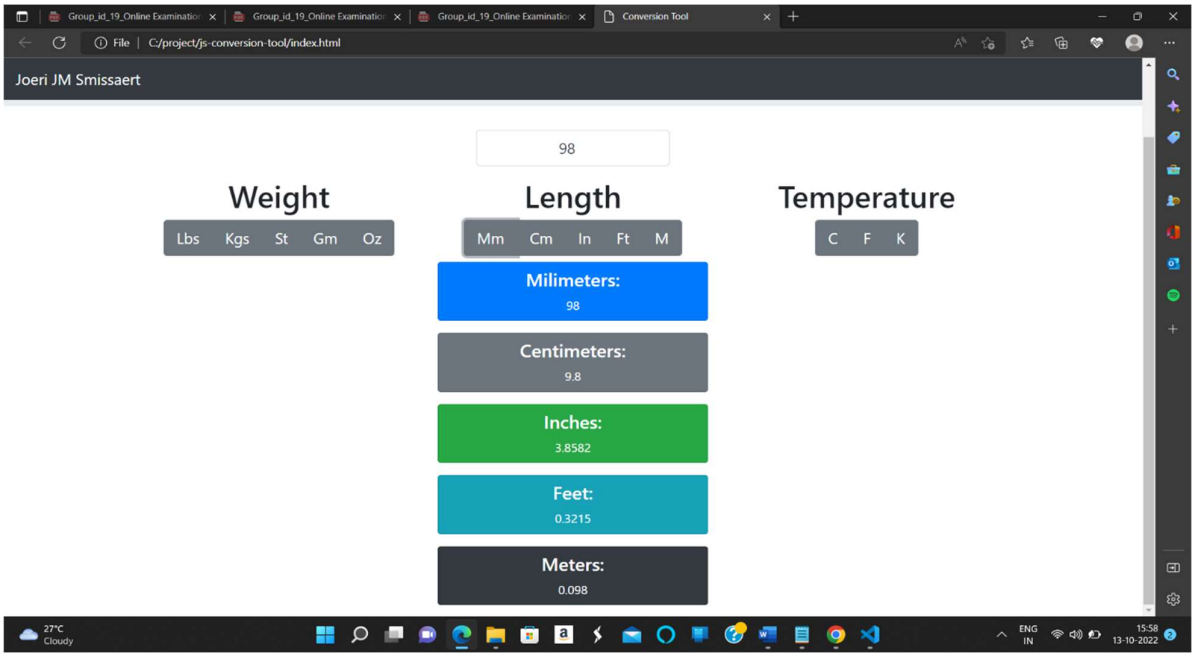
2. Convert number into a Weight Lbs Unit:



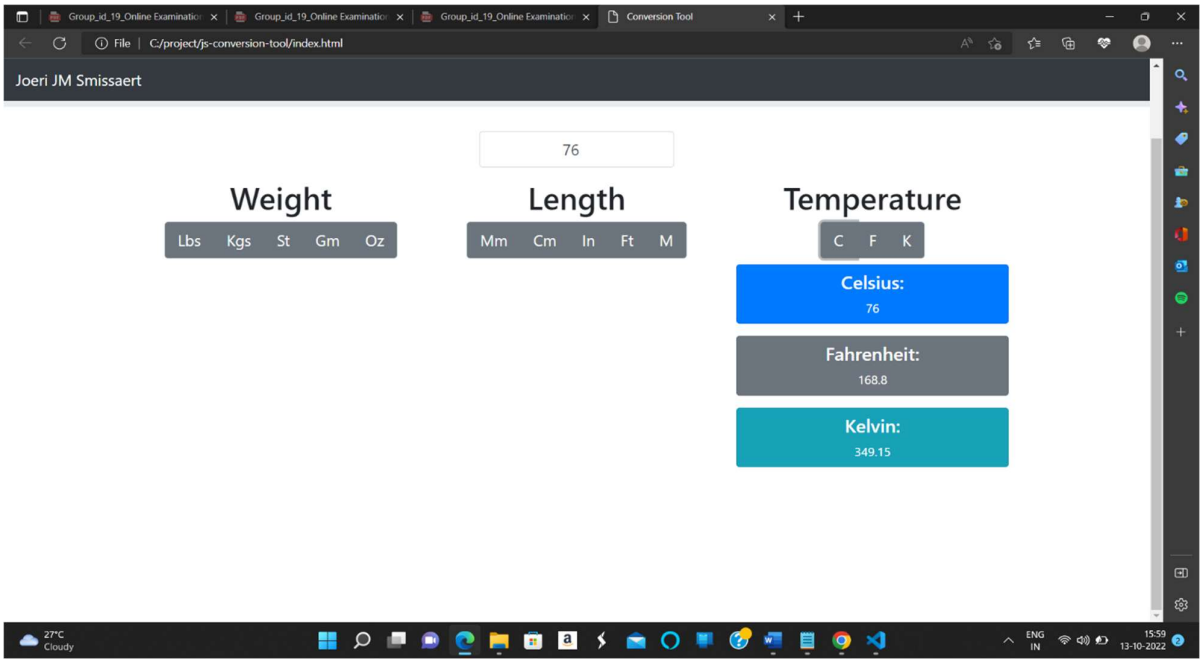
3. Convert number into a Weight Gm Unit:



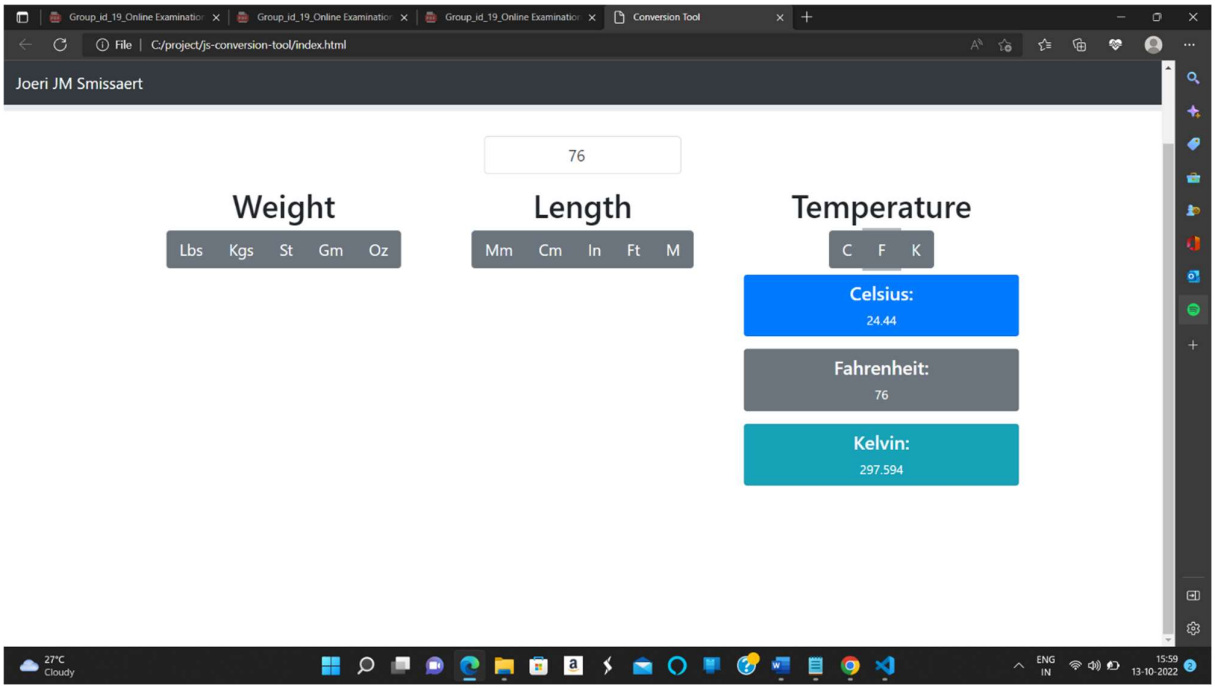
4. Convert number into a Lenght Mm Unit:



5. Convert number into a Temperature Celsius Unit:



6. Convert number into a Temperature Fahrenheit Unit:



CONCLUSION

We have described algorithms for conversion of units, for compiler checking of units used in arithmetic operations and for coercing units when necessary, and for symbolic simplification of combinations of units. The unit conversion algorithms are as simple as possible: they require only one multiply or divide per unit for conversion, and one add or subtract per unit for dimension checking. These algorithms have been implemented in a compiler that allows units as part of data type specifications and that performs automatic unit checking and conversion.

REFERENCES:

- https://www.w3schools.com/html/default.asp
- https://www.w3schools.com/css/default.asp
- https://www.w3schools.com/bootstrap/bootstrap_ver.asp
- https://www.cuemath.com/measurement/unit-conversio