

FPT ACADEMY INTERNATIONAL

FPT – APTECH COMPUTER EDUCATION

METRIC CONVERSION

Center Name FPT – Aptech – HCM2

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Ho Chi Minh City

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Class T1.2008.A0

Group 2

Group members Name Student ID

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Duration Start date 13th Nov 2020 End date 13th Dec 2020

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nas suc	cessfully designed & developed
	eProject: Metric Conversions.
Submitt	ed by:
	Nguyen Hong Phuc.
Date of	ssue:
Authoriz	zed Signature:

TABLE OF CONTENTS

FPT – APTECH COMPUTER EDUCATION	1	
ACKNOWLEGMENT	3	
SYNOSIS	3	
PROBLEM DEFINITION	3	
CUSTOMER'S REQUIREMENTS SPECIFICATIONS		
Business/Project Objective		
Hardware/ Software Requirements		
SCOPE OF THE WORK (IN BRIEF)	5	
Architecture and design of the system	5	
Diagram of the website		
TASK SHEET REVIEW 1		
SITE MAP		
MOCK OF THE WEBSITE		
Home		
Measurement units		
About us		
TASK SHEET REVIEW 2	12	
WEBSITE DESCRIPTION		
Home page	13/14/15/16/17	
Measurement units		
Temperature	19	
Mass	20/21	
Length	22/23	
Area		
Volume		
Currency		
About us		
RESPONSIVE		
JAVASCRIPT DESCRIPTION		2
Lenght calculation javascript		
Area calculation javascript		
Mass calculation javascript		
Temperature calculation javascript		
Volume calculation javascript		_
TASK SHEET REVIEW 3	3t)

ACKNOWLEGMENT

On behalf of all the members of group 2, I would like to thank you all for the hard works, supports to make this eProject complete successfully. Especially, Ms. Le Mong Thuy, our teacher, she helped us a lot from the day that we started to study at FPT Aptech. With this eProject, she has guided us with her enthusiasm and rigorous, because of her guiding, we would be able to finish this project. Besides, I want to thank all the team member of group 2, each of the team member has been working continuously in 4 weeks in order to complete this project. The last but not least, we would like to say thank you to our family for always supporting us, creating the best conditions for us to focus on the project, and putting faith in the dreams we pursue.

SYNOSIS

We need to create a website that meet all the requirement of our customer Metric Conversions. Metric conversion are various units of measurement; one of the earliest types of measurement concerned that of length. Many times we need to convert some data from one unit to other. Hence you are expected to develop a calculator for such metric conversions.

PROBLEM DEFINITION

Why does one need metric conversion for? Science projects seem more authoritative when the units used are metric units, such as grams, milliliters, and degrees Celsius.

Anyone can do good backyard science with inches and ounces, but when he shows his work in a science fair, metric conversion will show that he understand the importance of these units to scientists.

CUSTOMER'S REQUIREMENTS SPECIFICATIONS (CRS)

Client: Metric conversions

Business/Project Objective:

There are various units of measurement; one of the earliest types of measurement concerned that of length. Many times we need to convert some data from one unit to other. Hence we are developing a calculator for such metric conversions.

The website is to be developed for the Windows Platform using HTML5, JavaScript and Geolocation. The site should work well in all leading browsers including Chrome, IE, Firefox etc.

Input to the system:

- Input value of Length: inches, millimeters, feet, meters, miles, yards, kilometers.

- Input value of Area: square inches, square millimeters, square feet, square meters, square yards, acres hectares, square miles, square kilometers.
- Input value of Volume: fluid, ounces, milliliters, gallons, liters, cubic feet, cubic meters, cubic yards.
- Input Mass: ounces, grams, pounds, kilograms, short tons, mega grams, metric tons.
- Input value of Temperature: Fahrenheit, Celsius.

Output from the system:

- Displays calculation results and calculation formula for each unit of measure.
- Provides some basic information about the unit of measure.

Process:

- Allows customers to find out what values to calculated.

Expected delivery date: 13-Dec-2020.

List of deliverables:

- Document Word.
- User Guide.
- Source code.

Hardware/ Software Requirements:

♦ For developer

Hardware

- Intel Pentium 4 processor or higher
- 1 Gigabytes of RAM or higher

Software

- Windows 7 OS or higher
- Adobe Dreamweaver
- Web browsers such as IE, Chrome or Firefox are supporting HTML5, CSS3 and Javascript.

♦ For web users

Hardware

- Intel Pentium 4 processor or higher
- 512 Megabytes of RAM or higher

Software

- Windows XP OS or higher
- Web browsers such as IE, Chrome or Firefox are supporting HTML5, CSS3 and Javascript.

SCOPE OF THE WORK (IN BRIEF)

After a long and detailed discussion, our group has decided to create a website contain the following webpages:

- 1. *Home:* Displays calculated values and an introduction to them.
- 2. About Us: Display the information of the company.

Architecture and design of the system

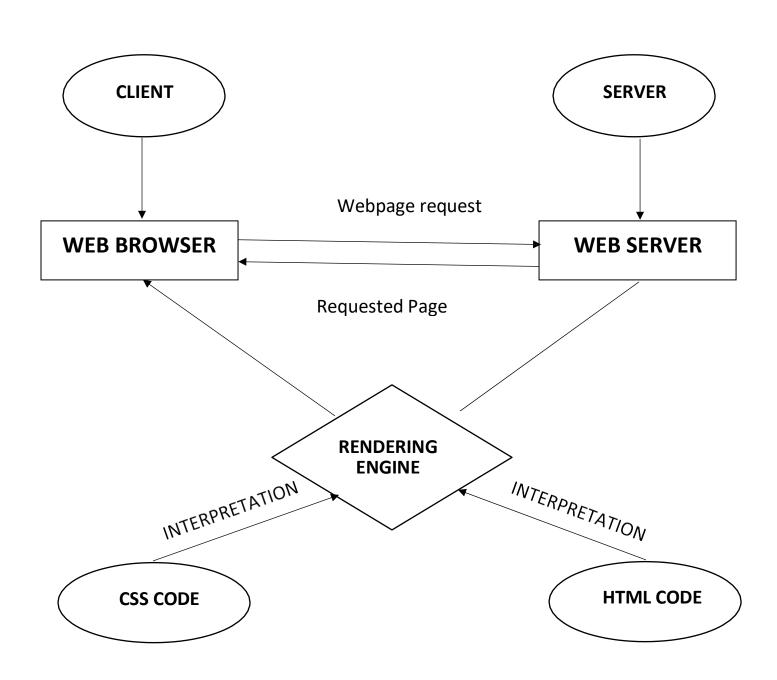
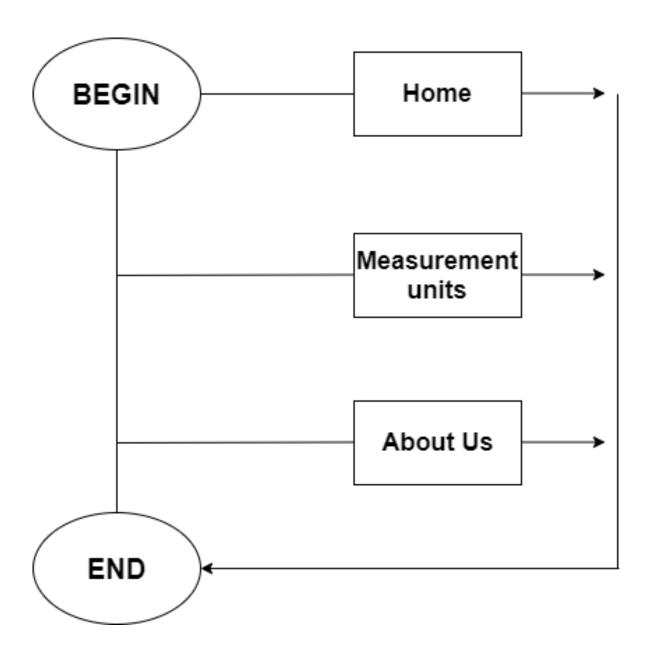


Diagram of the website

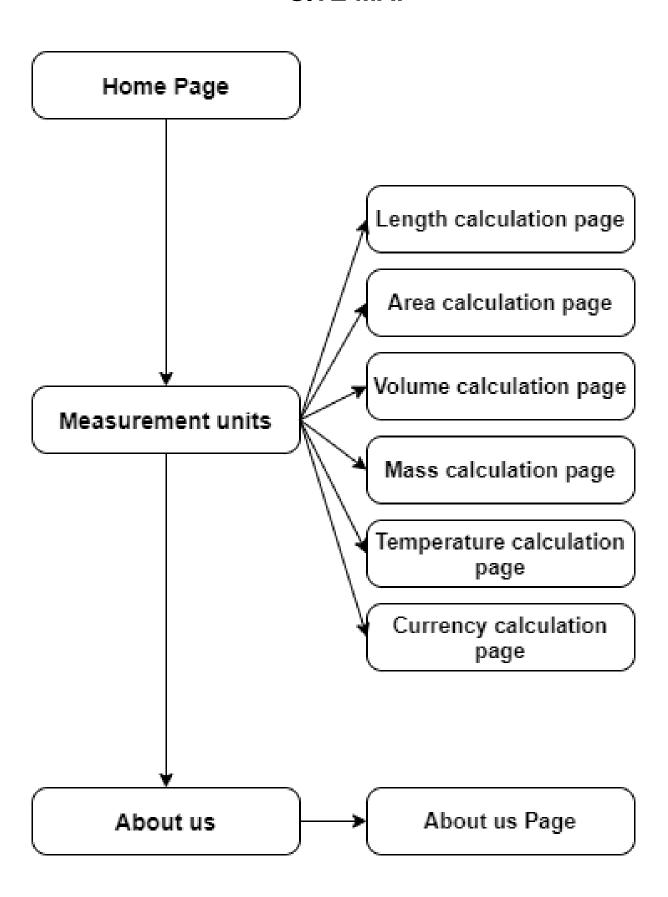


TASK SHEET REVIEW 1

Project Ref. No.: eP/Advertisement Portal Management System/01		Project Title:	Activity Plan Prepared				
Sr. No.	Task		Ву:	Actual Start Date	Actual Days	Team Mate Names	Status
1	Problem Statement			14-Nov-20	1	Phuc	Completed
2	Analysis of Metric conversion requirements about the website	Metric	Phuc	14-Nov-20	1	Phuc	Completed
3	The scope of the work (in brief)	Conversi on	Tilde	14-Nov-20	1	Loc	Completed
4	Architecture and design of the system			14-Nov-20	1	Phuc	Completed
5	Diagram of the website			14-Nov-20	1	Thinh	Completed
6	Task Sheet			14-Nov-20	1	Loc	Completed

Date:	
Signature of Instructor:	Signature of Team Leader:
Ms. Le Mong Thuy	Nguyen Hong Phuc

SITE MAP



MOCK OF THE WEBSITE

1. Home.

HEADER (logo - navigation bar)

Introduct

Footer

2. Measurement units.

HEADER (logo - navigation bar)

Menu

Footer

3. About Us

HEADER (logo - navigation bar)

About us

Footer

TASK SHEET REVIEW 2

Project Ref. No.: per/Advertisement Portal Management System/01		Activity Project Plan Title: Prepared		Date of Preparation of Activity Plan:			
Sr. No.	Task		Ву:	Actual Start Date	Actual Days	Team Mate Names	Status
1	Site map	Metric		15-Nov-20	2	Loc	Completed
2	Mock of the website	Conversions	Phuc	15-Nov-20	2	Phuc	Completed
3	Task sheet			15-Nov-20	2	Thinh	Completed

Date:	
Signature of Instructor:	Signature of Team Leader:
Ms. Le Mong Thuy	Nguyen Hong Phuc

WEBSITE DESCRIPTION

1. Home Page.

a) Description.

Home page displays following information:

- Introduces the unit of measure.
- Some frequently asked questions.
- b) Screen shot.









Historically, many different systems of units have been used, where a system of units is defined as a collection of units of measurement with rules that relate them to each other. A unit of measurement is a defined magnitude of a quantity that it used as a standard for measurement for the same kind of quantity, such as measurements of length, weight, and volume. In the past, many systems of measurement were defined on a local level, and could be based on factors as arbitrary as the length of a king's thumb. While this may work on a local level, when considering trade, as well as science, having systems of units based on units that others may not be able to relate to or understand makes interaction difficult. As such, the development of more universal and consistent systems developed over time. Today, some of the systems of units in use include the metric system, the imperial system, and the United States customary units. The International System of Units (SI) is the standard metric system that is currently used, and consists of seven SI base units of length, mass, time, temperature, electric current, luminous intensity, and amount of substance. Although SI is used almost universally in science (including

in the US), some countries such as the United States still use their own system of units. This is partly due to the substantial financial and cultural costs involved in changing a measurement system compared to the potential benefit of using a standardized system. Since US customary units (USC) are so entrenched in the United States, and SI is already used in most applications where standardization is important, everyday use of USC is still prevalent in the United States, and is unlikely to change. As such, many unit converters including this Conversion Calculator exist, and will continue to do so to ensure that people globally are able to communicate different measurements effectively.

History of the Pound







Тор

BCE (before Common Era). The measurement of weight was based on the shi, which was equivalent to approximately 132 pounds. The Chi and Zhang were units of length equivalent to approximately 25 centimeters (9.8 inches) and 3 meters (9.8 feet) respectively. The Chinese also developed a means to ensure accuracy through use of a special size of bowl used for measurements that also made a specific sound when struck – if the sound was off pitch, the measurement was not accurate.

Brief History of the Metric System

In 1668, John Wilkins proposed a decimal system in which length, area, volume, and mass were linked to each other based on a pendulum that had a beat of one second as a base unit of length. In 1670, Gabriel Mouton proposed a decimal system that was instead based on the circumference of the earth, an idea supported by other prominent scientists of the time such as Jean Picard and Christiaan Huygens, but that did not take hold for approximately another 100 years. By the mid-eighteenth century, it was clear to nations who traded and exchanged scientific ideas that standardization of weights and measures was necessary. In 1790, Charles Maurice de Talleyrand-Perigord, the Prince of Talleyrand, approached the British (represented by John Riggs-Miller) and the Americans (represented by Thomas Jefferson) with proposals to define a common standard of length based on the length of a pendulum. In that same year, Thomas Jefferson, presented the "Plan for Establishing Uniformity in the Coinage, Weights, and Measures of the United States," which advocated for a

In the eighth and ninth centuries of the Common Era (CE), Arab civilization flourished in the Middle East and Spain. The Arabs used coins as a measurement of units of weight since a minted coin could not easily be cut or shaved to reduce its weight, and thus provided a measurable standard. They used a coin called a silver dirhem as a basic measure of weight, which had a weight roughly equivalent to 45 fully grown grains of barley. Ten dirhems comprised a Wukryeh which was translated into Latin as an "uncia" - the origin of the word "ounce." Over time, trade spread from the Mediterranean area to Europe, including the northern German City States. As a result, a pound, 16 ounces of silver, or 7200 grains, became a commonly used measure in many regions. While England also adopted this measure, a shortage of silver caused King Offa to reduce the measurement of the pound to 5400 grains in order to use smaller coins. Eventually, when William the Conqueror became King of England, he retained the 5400-grain pound for minting coins, but reverted to the 7200-grain pound for other purposes. Though many countries used the pound from that point onward, including England (the British pound sterling, or GBP was equal to one pound-weight of silver in King Offa's time), the avoirdupois weight system was adopted during the reign of Queen Elizabeth in the 16th century. It was a system based on the weight of coal, and its name was derived from the French phrase "avoir de pois" (goods of weight or property). The avoirdupois was equivalent to 7,000 grains, 256 drams of 27.344 grains each, or 16 ounces of 437 ½ grains each. Since 1959, the avoirdupois pound has been officially defined in most English-speaking countries as 0.45359237 kilograms. Different systems of measurement also developed over time in Asian countries. For example, in ancient India, a measure of weight called the "Satamana" was used, and was equal to the weight of 100 gunja berries. In China, the first emperor Shi Huang Di created a system of weights and measures in the third century

Тор

decimal system in which units were related to each other by powers of ten. A committee that was formed in France comprised of some of the most prominent scientists of the day came to a similar conclusion, and also proposed a decimal system for all weights and measures. Although Congress considered Jefferson's report, it was not adopted. In Great Britain, John Riggs-Miller lost his British Parliamentary seat in the 1790 election. As such, the measurement system was only implemented in France, and in 1795, the metric system was formally defined in French law. It was not until 1799 however that the metric system was officially adopted in France, though it was still not universally observed across the country. Spread of the metric system did not occur quickly, and areas that were annexed by France during Napoleon's reign were the first to adopt the metric system. By 1875, two thirds of the European population, and nearly half the world's population had adopted the metric system. By 1920, the percentage of the world's population using the imperial system or the US customary system was ~22%, with 25% using mainly the metric system, and 53% using neither. The International System of Units, currently the most widely used system of measurement, was published in 1960. It has been adopted by all developed countries except for the United States, though as previously mentioned, it is used in science, as well as heavily in the military, even in the US.

Тор

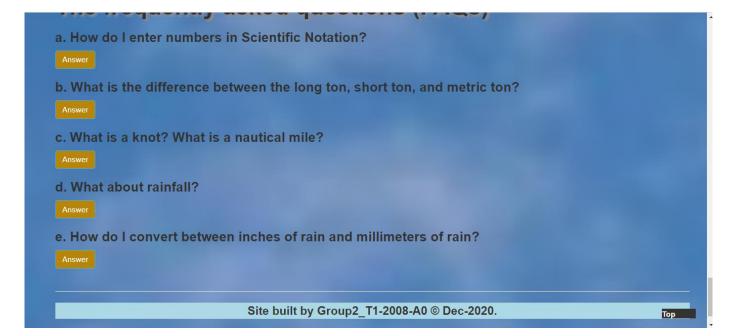
Since other systems of measurement are still used around the world, such as the United States and the United Kingdom, this site aims to help people convert units of measurement with Metric Converter and Metric Conversion Table and to better understand alternative measurements that they are unfamiliar with. The measurement units are categorized into types (such as Temperature Conversion, Weight Conversion and so on) When clicking the you will then be directed to a page containing a series of metric conversion calculators.

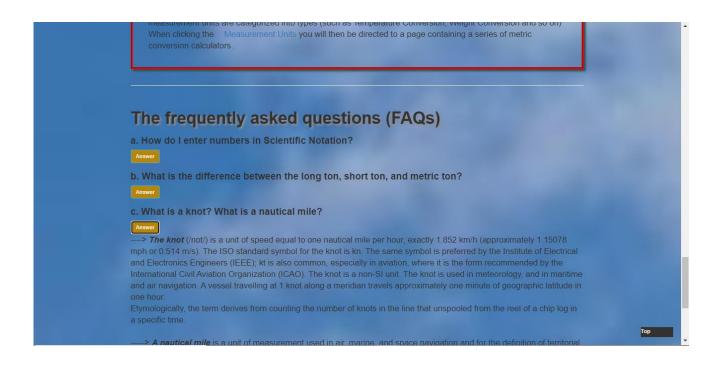
The frequently asked questions (FAQs)

a. How do I enter numbers in Scientific Notation?

Answer

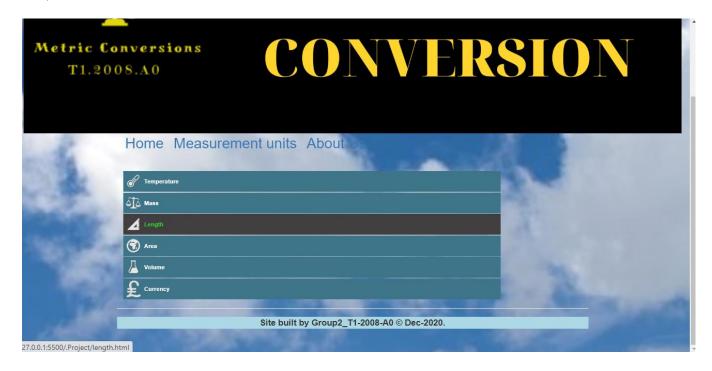
b. What is the difference between the long ton, short ton, and metric ton?





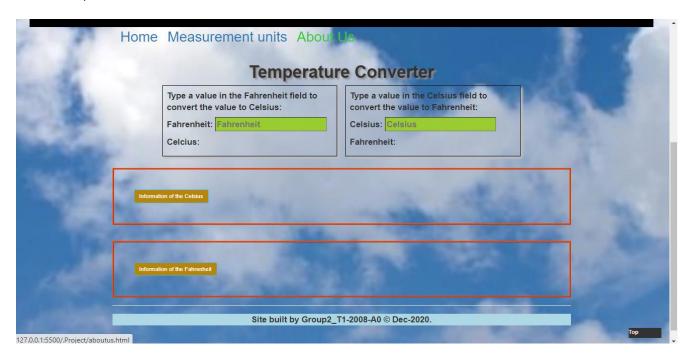
2. Measurement units .

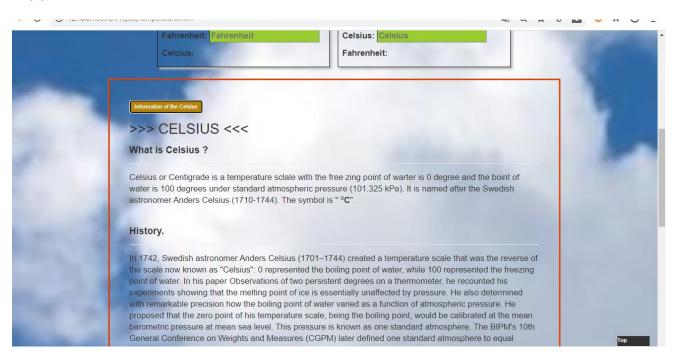
- a) Description.
 - Shows a list of units.
- b) Screen shot.



3. Temperature.

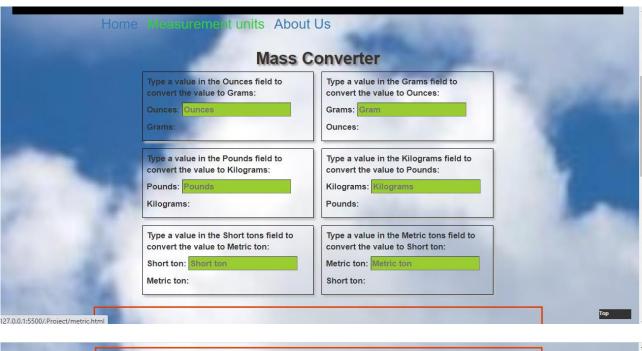
- a) Description.
 - -Temperature converter.
 - Information of the Temperature: Celsius, Fahrenheit.
- b) Screen shot.





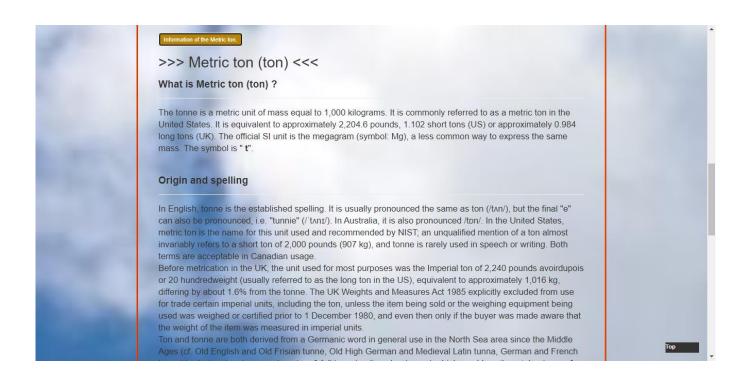
4. Mass.

- a) Description.
 - Mass Converter.
 - Information of the Mass: Ounces, Grams, Pounds, Kilograms, Short ton, Metric ton,...
- b) Screen shot.







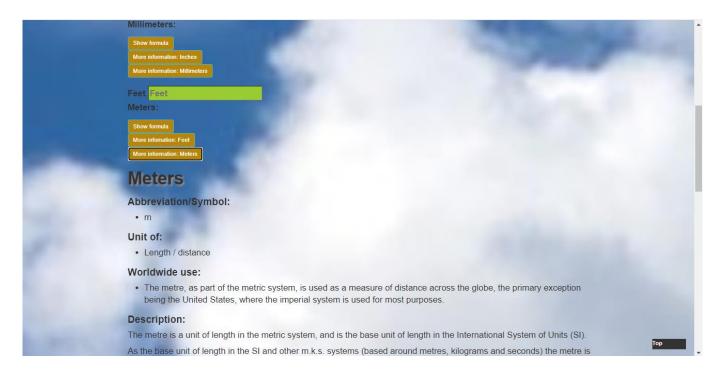


5. Leght.

- a) Description.
 - Leght Converter.
 - Information of the Leght: inch, millimetre, feet, metre, kilometre,.......
- b) Screen shot.

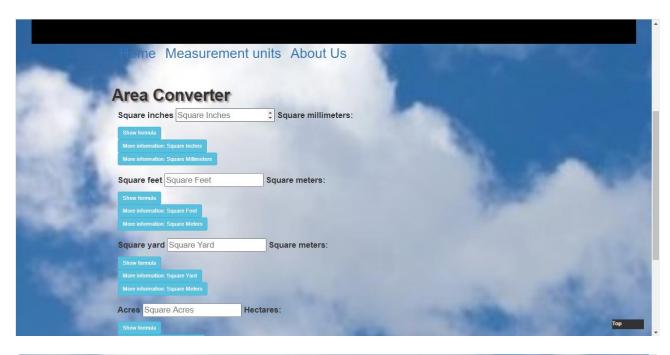


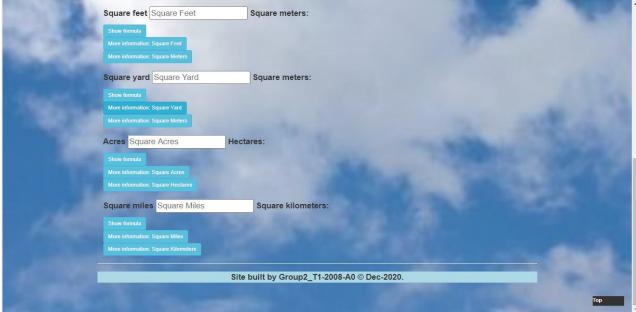


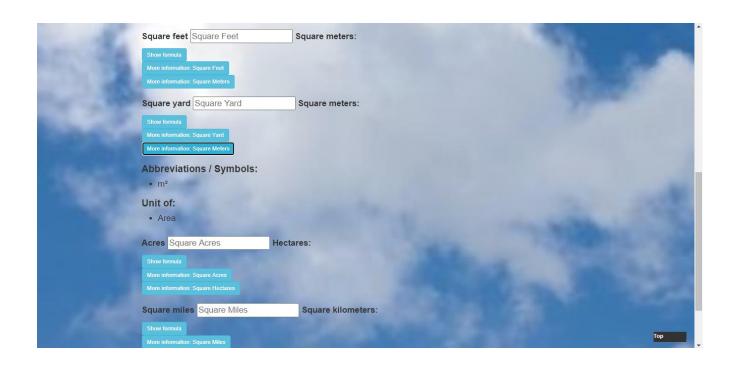


6. Area.

- a) Description.
 - Area Converter.
- Information of the Area: square inches, square millimeters, square feet, square meter, square yard, acres, hecta,
 - b)Screen shot.

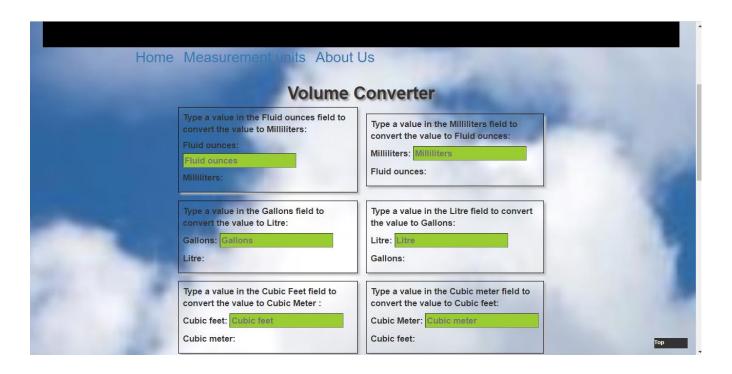


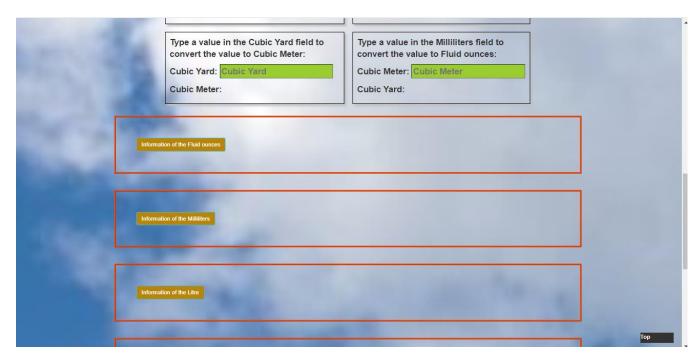




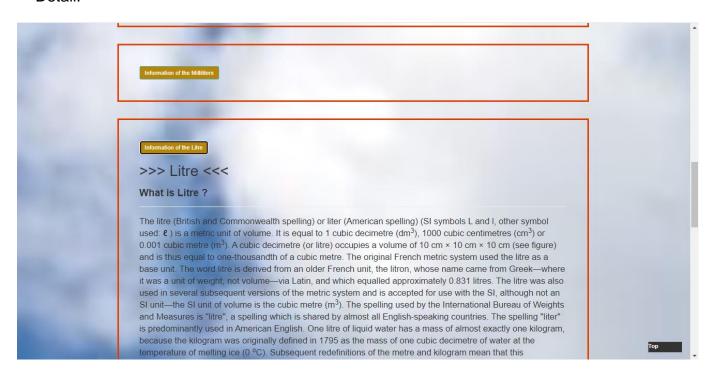
7. Volume.

- a) Description.
 - Volume Converter.
- Information of the Volume: fluid ounces, milliliters, gallons , litre, cubic feet, cubic meter, cubic yard,...
 - b)Screen shot



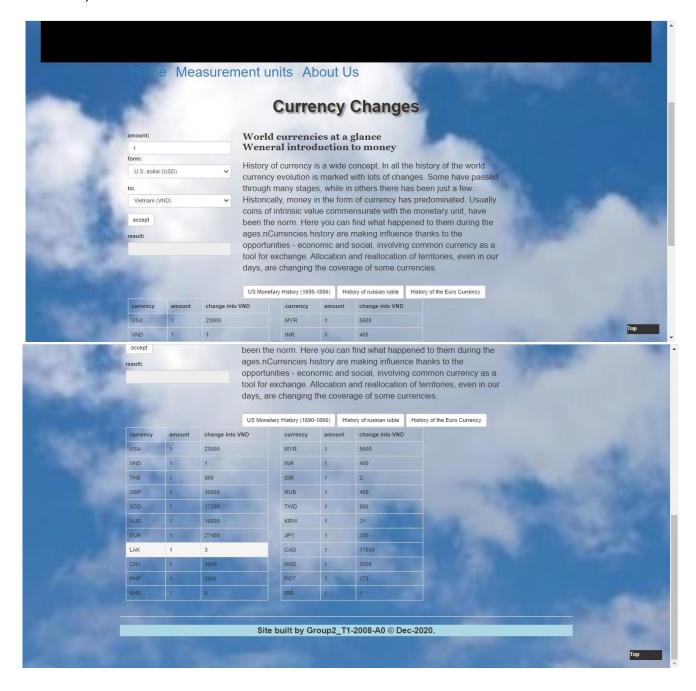


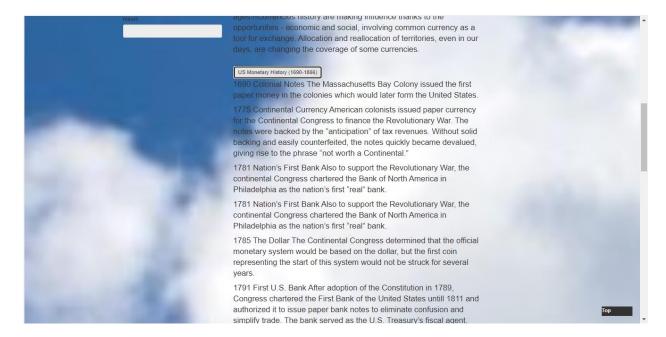




8. Currency.

- a) Description.
 - Currency Converter.
 - Information of the Currency.
- b)Screen shot.





9. About us.

- a) Description.
 - -This page displays our team members and thanks.
- b)Screen shot



RESPONSIVE

The page has responsive feature for small screen device such as smart phone, tablet, etc.



JAVASCRIPT DESCRIPTION

- 1. Leght caculation javascript.
 - a) Description.

This script is used to calculate units of length.

b)Screen shot.

```
function InchesConverter(inches) {
    document.getElementById("outputMillimeters").innerHTML=inches*25.4;
    };
    function FeetConverter(Feet) {
        document.getElementById("outputMeters").innerHTML=Feet*0.3048;
        };
        function YardsConverter(Yards) {
            document.getElementById("outputMeters1").innerHTML=Yards*0.9144;
        };
        function MilesConverter(Miles) {
            document.getElementById("outputKilometers").innerHTML=Miles*1.609344;
            };
            document.getElementById("outputKilometers").innerHTML=Miles*1.609344;
            };
```

- 2. Area caculation javascript.
 - a) Description.

This script is used to calculate units of area.

b)Screen shot.

```
function SquareFeetConverter(SFeet) {
    document.getElementById("outputSMeter").innerHTML = SFeet / 10.764;
}
function SquareInchesConverter(SInches) {
    document.getElementById("outputSMillimeters").innerHTML = SInches / 0.0015500;
}
function SquareYardConverter(SYard) {
    document.getElementById("outputSMeter1").innerHTML = SYard / 1.1960;
}
function AcresConverter(Acres) {
    document.getElementById("outputHectares").innerHTML = Acres / 2.4711;
}
function SquareMilesConverter(SMiles) {
    document.getElementById("outputSKilometers").innerHTML = SMiles / 0.38610;
}
</script>
```

- 3. Mass calculation javascript.
 - a) Description.

This script is used to calculate units of mass.

b)Screen shot.

```
function oun(valNum) {
    document.getElementById("outputGrams").innerHTML = valNum / 0.035274;
}

function pou(valNum) {
    document.getElementById("outputKilograms").innerHTML = valNum / 2.2046;
}

function short(valNum) {
    document.getElementById("outputMetricton").innerHTML = valNum * 0.91;
}

function metric(valNum) {
    document.getElementById("outputShortton").innerHTML = valNum * 1.10231131;
}

function gram(valNum) {
    document.getElementById("outputOunces").innerHTML = valNum * 0.0352739619;
}

function kilograms(valNum) {
    document.getElementById("outputOunces").innerHTML = valNum * 0.45359237;
}

    function kilograms(valNum) {
        document.getElementById("outputPound").innerHTML = valNum * 0.45359237;
}
```

- 4. Temperature calculation javascript.
 - a) Description.

This script is used to calculate units of temperature.

b)Screen shot.

- 5. Volume calculation javascript.
 - a) Description.

This script is used to calculate units of volume.

b)Screen shot.

```
<script>
   function flu(valNum) {
       valNum = parsefloat(valNum);
       document.getElementById("outputMl").innerHTML = valNum * 29.5735296;
   function mil(valNum) {
       valNum = parseFloat(valNum);
       document.getElementById("outputFlu").innerHTML = valNum * 0.0338140227;
   function gal(valNum) {
        valNum = parseFloat(valNum);
       document.getElementById("outputLitre").innerHTML = valNum * 3.78541178;
   function lit(valNum) {
       valNum = parseFloat(valNum);
       document.getElementById("outputGal").innerHTML = valNum * 0.264172052;
   function feet(valNum) {
       valNum = parseFloat(valNum);
       document.getElementById("outputMeter").innerHTML = valNum / 35.315;
   function meter(valNum) {
       valNum = parseFloat(valNum);
       document.getElementById("outputFeet").innerHTML = valNum * 35.315;
    function yard(valNum) {
       valNum = parseFloat(valNum);
       document.getElementById("outputMet").innerHTML = valNum * 0.764554858;
    function met(valNum) {
       valNum = parseFloat(valNum);
       document.getElementById("outputYar").innerHTML = valNum * 1.30795062;
```

TASK SHEET REVIEW 3

Proje	ect Ref. No.:						
eP/Advertisement Portal Management System/01		Project Title:	Activity Plan	Date of Preparation of Activity Plan:			
Sr. No.	Task	Prepared - By:	Actual Start Date	Actual Days	Team Mate Names	Status	
1	Home page			20-Nov-20	1	Phuc	Completed
2	Measurement units	Metric		21-Nov-20	1	Phuc	Completed
3	Volume	Conversion	Phuc	22-Nov-20	3	Phuc	Completed
4	Mass			25-Nov-20	3	Phuc	Completed
5	Temperature			28-Nov-20	1	Phuc	Completed
6	Length			20-Nov-20	3	Loc	Completed
7	Area			23-Nov-20	2	Loc	Completed
8	Currency			20-Nov-20	4	Thinh	Completed
9	About us			24-Nov-20	1	Thinh	Completed

Date:	
Signature of Instructor:	Signature of Team Leader:
Ms. Le Mong Thuy	Nguyen Hong Phuc