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**Green University of Bangladesh**

**Department of Computer Science and Engineering (CSE)**

**Faculty of Sciences and Engineering**

**Semester: (Spring, Year:2021), B.Sc. in CSE (Day/Eve)**

**Course Title:**

**Course Code: Section:**

**Lab Project Name: Mechanical Calculator.**

**Student Details**

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**Submission Date: 20 may 2022**

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**[For Teachers use only: Don’t Write Anything inside this box]**

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| **Lab Project Status**  **Marks: ………………………………… Signature: .....................**  **Comments: .............................................. Date: ..............................** |

# Chapter 1 Introduction

## Introduction

This is a calculator which is calculate mechanical various problem. It’s work mainly for mechanical worker, engineer, students and common people. It is too helpful for built structure building, gas line, water line and all pipe fitting.

## Design Goals/Objective

# Chapter 2

# Design/Development/Implementation of the Project

## Mechanical Calculator

. It’s work mainly for mechanical worker, engineer, students and common people. It is too helpful for built structure building, gas line, water line and all pipe fitting.

Code:

#include<stdio.h>

#include<math.h>

void triangle\_option()

{

char l,v,o,al,av;

printf("\t\t\t\tWHICH TOW INPUT YOU HAVE ?\n");

printf("\t\t\t\t//////////////////////////////@\n");

printf("\t\t\t\t//Do you have Opposite : ");

fflush(stdin);

scanf("%c",&l);

printf("\t\t\t\t//Do you have Adjacent : ");

fflush(stdin);

scanf("%c",&v);

printf("\t\t\t\t//Do you have Hypotenuse : ");

fflush(stdin);

scanf("%c",&o);

printf("\t\t\t\t//Do you have Angle near Opposite : ");

fflush(stdin);

scanf("%c",&al);

printf("\t\t\t\t//Do you have Angle near Adjacent : ");

fflush(stdin);

scanf("%c",&av);

printf("\t\t\t\t//////////////////////////////////@\n\n");

if(l=='y' && v=='y')

lmb\_vmi();

else if(l=='y' && al=='y')

angle\_lmb();

else if (l=='y' && o=='y')

lombo\_otivuj();

else if(v=='y' && o=='y')

vumi\_otivuj();

else if(v=='y' && av=='y')

angle\_vumi();

}

void angle\_vumi()

{

float a,v,tn,lmb,otivuj,area,poridhi;

printf("\t\t\t\t\tEnter Angle :");

fflush(stdin);

scanf("%f",&a);

printf("\t\t\t\t\tEnter Adjacent");

fflush(stdin);

scanf("%f",&v);

a=a\*(3.1416/180);

lmb=tan(a)\*v;

tn=90-a;

otivuj=sqrt(pow(lmb,2)+pow(v,2));

area=.5\*lmb\*v;

poridhi=lmb+v+otivuj;

printf("\n\t\t\t\t/////////////////////////////////@\n");

printf("\t\t\t\t//Opposite is %f\n",lmb);

printf("\t\t\t\t//Hypotenuse is %f\n",otivuj);

printf("\t\t\t\t//Another Angle is %f\n",tn);

printf("\t\t\t\t//Area is %f\n",area);

printf("\t\t\t\t//Circumference is %f\n",poridhi);

printf("\t\t\t\t/////////////////////////////////@\n");

}

void vumi\_otivuj()

{

float o,v,tn,lmb,otivuj,area,poridhi,a;

printf("\t\t\t\t\tEnter Hypotenuse :");

fflush(stdin);

scanf("%f",&o);

printf("\t\t\t\t\tEnter Adjacent : ");

fflush(stdin);

scanf("%f",&v);

lmb=sqrt(pow(o,2)-pow(v,2));

a=atan(lmb/v);

tn=90-a;

area=.5\*lmb\*v;

poridhi=lmb+v+o;

printf("\n\t\t\t\t/////////////////////////////////@\n");

printf("\t\t\t\t//Opposite is %f\n",lmb);

printf("\t\t\t\t//Angle near Opposite is %f\n",a);

printf("\t\t\t\t//Another Angle is %f\n",tn);

printf("\t\t\t\t//Area is %f\n",area);

printf(" \t\t\t\t//Circumference is %f\n",poridhi);

printf("\t\t\t\t/////////////////////////////////@\n");

}

void lombo\_otivuj()

{

float o,v,tn,lmb,otivuj,area,poridhi,a;

printf("\t\t\t\t\tEnter Hypotenuse : ");

fflush(stdin);

scanf("%f",&o);

printf("\t\t\t\t\tEnter Opposite : ");

fflush(stdin);

scanf("%f",&lmb);

v=sqrt(pow(o,2)-pow(lmb,2));

a=atan(lmb/v);

tn=90-a;

area=.5\*lmb\*v;

poridhi=lmb+v+o;

printf("\n\t\t\t\t/////////////////////////////////@\n");

printf("\t\t\t\t//Adjacent is %f\n",v);

printf("\t\t\t\t//Angle near Opposite is %f\n",a);

printf("\t\t\t\t//Another Angle is %f\n",tn);

printf("\t\t\t\t//Area is %f\n",area);

printf(" \t\t\t\t//Circumference is %f\n",poridhi);

printf("\t\t\t\t/////////////////////////////////@\n");

}

void lmb\_vmi()

{

float o,v,tn,lmb,otivuj,area,poridhi,a;

printf("\t\t\t\t\tEnter Adjacent : ");

fflush(stdin);

scanf("%f",&v);

printf("\t\t\t\t\tEnter Opposite : ");

fflush(stdin);

scanf("%f",&lmb);

o=sqrt(pow(lmb,2)+pow(v,2));

a=atan(lmb/v);

tn=90-a;

area=.5\*lmb\*v;

poridhi=lmb+v+o;

printf("\n\t\t\t\t/////////////////////////////////@\n");

printf("\t\t\t\t//Adjacent is %f\n",v);

printf("\t\t\t\t//Angle near Opposite is %f\n",a);

printf("\t\t\t\t//Another Angle is %f\n",tn);

printf("\t\t\t\t//Area is %f\n",area);

printf("\t\t\t\t//Circumference is %f\n",poridhi);

printf("\t\t\t\t/////////////////////////////////@\n");

}

void angle\_lmb()

{

float o,v,tn,lmb,otivuj,area,poridhi,a;

printf("\t\t\t\t\tEnter Angle : ");

fflush(stdin);

scanf("%f",&a);

printf("\t\t\t\t\tEnter Opposite : ");

fflush(stdin);

scanf("%f",&lmb);

v=lmb/tan(a);

o=sqrt(pow(lmb,2)+pow(v,2));

tn=90-a;

area=.5\*lmb\*v;

poridhi=lmb+v+o;

printf("\n\t\t\t\t/////////////////////////////////@\n");

printf("\t\t\t\t//adjacent is %f\n",v);

printf("\t\t\t\t//Angle near Opposite is %f\n",a);

printf("\t\t\t\t//Another Angle is %f\n",tn);

printf("\t\t\t\t//Area is %f\n",area);

printf("\t\t\t\t//Circumference is %f\n",poridhi);

printf("\t\t\t\t/////////////////////////////////@\n");

}

void pipe\_option()

{

float radius,area,volume,high,poridhi,pi=3.1416,diameter;

printf("\t\t\t\t\tEnter Radius : ");

scanf("%f",&radius);

printf("\t\t\t\t\tEnter High : ");

scanf("%f",&high);

area=pi\*radius\*radius;

poridhi=2\*pi\*radius;

diameter=radius\*2;

volume=pi\*radius\*radius\*high;

printf("\n\t\t\t\t/////////////////////////////////@\n");

printf("\t\t\t\t//Area is %f\n",area);

printf(" \t\t\t\t//Circumference is %f\n",poridhi);

printf("\t\t\t\t//Diameter is %f\n",diameter);

printf("\t\t\t\t//Volume is %f\n",volume);

printf("\t\t\t\t/////////////////////////////////@\n");

}

int main()

{

char opt;

printf("\t\t\t\t@@-MACHANICAL CALCULATOR-@@\n\n");

printf("\t\t\t\t/////////////////////////////////@\n");

printf("\t\t\t\t//To Calculate Triangle Cress 'T' \n \t\t\t\t//To calculate Pipe press 'P' \n \t\t\t\t//Enter Here : ");

scanf("%c",&opt);

printf("\t\t\t\t////////////////////////////////@");

printf("\n\n");

switch(opt)

{

case 't' :

triangle\_option();

break;

case 'p':

pipe\_option();

break;

}

}

Output:









