Name : Adeel Ali Roll No: 4459167

Date: 06/03/2025

# Assignment: Decisions Structure

**Task 01:**

**Code:**

#include <iostream>

#include <cmath>

using namespace std;

int main(){

    int x,y;

    cout <<"Enter x-coordinates: ";

    cin >> x;

    cout <<"Enter y-coordinates: ";

    cin >> y;

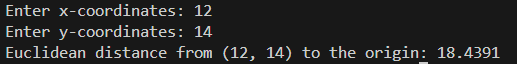
    double distance = sqrt(pow(x,2)+pow(y,2));

    cout << "Euclidean distance from (" << x << ", " << y << ") to the origin: " << distance << endl;

    return 0;

}

**Output:**



**Task 02:**

**Code:**

#include <iostream>

using namespace std;

int main(){

    int status, salery;

    cout << "Enter status 0-for single and 1-for married: ";

    cin >>status;

    cout << "Enter your salery: ";

    cin >>salery;

    if (status==0 && salery >0){

        if(salery>=0 && salery<=8350){

            double tax = salery\*0.10;

            cout <<"Your tax will be; "<< tax;

        }

        else if(salery >= 8351 && salery <= 33950){

            double tax = salery\*0.15;

            cout <<"Your tax will be; "<< tax;

        }

        else if(salery >= 33951 && salery <= 82250){

            double tax = salery\*0.28;

            cout <<"Your tax will be; "<< tax;

        }

        else if(salery >= 82251 && salery <= 171550){

            double tax = salery\*0.33;

            cout <<"Your tax will be; "<< tax;

        }

        else if(salery >= 171551 && salery <= 372950){

            double tax = salery\*0.25;

            cout <<"Your tax will be; "<< tax;

        }

        else{

            double tax = salery\*0.35;

            cout <<"Your tax will be; "<< tax;

        }

    }

    else if(status==1 && salery >0){

        if(salery>=0 && salery<=16700){

            double tax = salery\*0.10;

            cout <<"Your tax will be; "<< tax;

        }

        else if(salery >= 16701 && salery <= 67900){

            double tax = salery\*0.15;

            cout <<"Your tax will be; "<< tax;

        }

        else if(salery >= 67901 && salery <= 137050){

            double tax = salery\*0.28;

            cout <<"Your tax will be; "<< tax;

        }

        else if(salery >= 137051 && salery <= 208850){

            double tax = salery\*0.33;

            cout <<"Your tax will be; "<< tax;

        }

        else if(salery >= 208851 && salery <= 372950){

            double tax = salery\*0.25;

            cout <<"Your tax will be; "<< tax;

        }

        else{

            double tax = salery\*0.35;

            cout <<"Your tax will be; "<< tax;

        }

    }

    else{

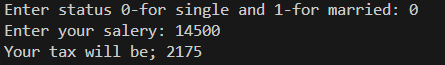
        cout <<"Invalid status or salery:";

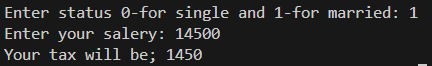
    }

    return 0;

}

**Output:**





**Task 03:**

**Code:**

#include <iostream>

using namespace std;

int main(){

    int num, n1,n2,n4,n5;

    cout << "Enter 5-digit number: ";

    cin >> num;

    if (num <10000 || num >99999){

        cout << " invalid input write 5-digits numbers";

    }

    else{

        n1 = num /10000;

        n2 = (num /1000) %10;

        n4 = (num /10) %10;

        n5 = num %10;

        if(n1==n5 && n2 == n4){

            cout << "It is palindrome";

        }

        else{

            cout << "It is not palindrome";

        }

    }

    return 0;

}

**Output:**





**Task 04:**

**Code:**

#include <iostream>

#include <cmath>

using namespace std;

int main(){

    double weight,height;

    cout << "Enter your Height in meters: ";

    cin >> height;

    cout << "Enter your weight in kilograms: ";

    cin >> weight;

    double BMI = weight/pow(height,2);

    if (BMI<18.5){

        cout << "You are UnderWeight";

    }

    else if(18.5<=BMI && BMI < 25.0){

        cout << "You are Normal";

    }

    else if(25.0<=BMI && BMI < 30.0){

        cout << "You are OverWeight";

    }

    else{

        cout << "Obese";

    }

    return 0;

}

**Output:**

