**Week 3 Assignment**

Muhammad Rafi Cahya Ramadhana

22/492162/PA/21075

1. Source code
2. #include<iostream>  
   #include <cmath>  
     
   using namespace std;  
     
   int main() {  
    double a, b, c;  
    double x1, x2;  
     
    cout << "Input the values a, b, and c" << endl;  
    cin >> a >> b >> c;  
     
    double d = (b\*b) - 4 \* (a\*c);  
     
    cout << "Determinant of said function is " << d << endl;  
     
    if (d>0) {  
    x1 = ((-1 \* b) + sqrt(d))/(2\*a);  
     
    x2 = ((-1 \* b) - sqrt(d))/(2\*a);  
     
    cout << "The values x1 and x2 are " << x1 << " and " << x2 << endl;  
    } else if (d == 0) {  
    x1 = (-1 \* b)/(2\*a);  
    x2 = x1;  
     
    cout << "The values x1 and x2 are " << x1 << " and " << x2 << endl;  
    } else if (d<0) {  
    x1 = ((-1 \* b)/(2\*a)) + (sqrt(abs(d))/(2\*a));  
    x2 = ((-1 \* b)/(2\*a)) - (sqrt(abs(d))/(2\*a));  
     
    cout << "The values x1 and x2 are imaginary numbers " << x1 << "i and " << x2 << "i" << endl;  
    }  
     
     
     
    return 0;  
   }

Screenshot

Text

Description automatically generated Text

Description automatically generated

Graphical user interface, text

Description automatically generated

1. Source code
2. #include<iostream>  
   using namespace std;  
     
   int main() {  
     
    int date, month;  
    string zodiac = "??";  
     
    cout << "Insert birth date \n";  
    cin >> date;  
    cout << "Insert birth month \n";  
    cin >> month;  
     
    if (((date >= 21) && (month == 3)) || ((date <= 19) && (month == 4))) {  
    zodiac = "Aries";  
    } else if (((date >= 20) && (month == 4)) || ((date <= 20) && (month == 5))) {  
    zodiac = "Taurus";  
    } else if (((date >= 21) && (month == 5)) || ((date <= 20) && (month == 6))) {  
    zodiac = "Gemini";  
    } else if (((date >= 21) && (month == 6)) || ((date <= 22) && (month == 7))) {  
    zodiac = "Cancer";  
    } else if (((date >= 23) && (month == 7)) || ((date <= 22) && (month == 8))) {  
    zodiac = "Leo";  
    } else if (((date >= 23) && (month == 8)) || ((date <= 22) && (month == 9))) {  
    zodiac = "Virgo";  
    } else if (((date >= 23) && (month == 9)) || ((date <= 22) && (month == 10))) {  
    zodiac = "Libra";  
    } else if (((date >= 23) && (month == 10)) || ((date <= 21) && (month == 11))) {  
    zodiac = "Scorpio";  
    } else if (((date >= 22) && (month == 11)) || ((date <= 21) && (month == 12))) {  
    zodiac = "Sagittarius";  
    } else if (((date >= 22) && (month == 12)) || ((date <= 19) && (month == 1))) {  
    zodiac = "Capricorn";  
    } else if (((date >= 20) && (month == 1)) || ((date <= 18) && (month == 2))) {  
    zodiac = "Aquarius";  
    } else if (((date >= 19) && (month == 2)) || ((date <= 20) && (month == 3))) {  
    zodiac = "Pisces";  
    }  
     
    cout << zodiac;  
     
    return 0;  
   }

Screenshot

Graphical user interface, text

Description automatically generated Graphical user interface, text

Description automatically generated

1. Source code
2. #include<iostream>  
   using namespace std;  
     
   int main() {  
    int n;  
    string month, days;  
    cout << "Insert a month's number \n";  
    cin >> n;  
     
    switch (n) {  
    case 1 :  
    month = "January";  
    days = "31";  
    break;  
    case 2 :  
    month = "February";  
    days = "28";  
    break;  
    case 3 :  
    month = "March";  
    days = "31";  
    break;  
    case 4 :  
    month = "April";  
    days = "30";  
    break;  
    case 5 :  
    month = "May";  
    days = "31";  
    break;  
    case 6 :  
    month = "June";  
    days = "30";  
    break;  
    case 7 :  
    month = "July";  
    days = "31";  
    break;  
    case 8 :  
    month = "August";  
    days = "31";  
    break;  
    case 9 :  
    month = "September";  
    days = "30";  
    break;  
    case 10 :  
    month = "October";  
    days = "31";  
    break;  
    case 11 :  
    month = "November";  
    days = "30";  
    break;  
    case 12 :  
    month = "December";  
    days = "31";  
    break;  
    default:  
    month = "There is no such month";  
     
    }  
     
    cout << month << " has " << days << " days";  
     
    return 0;  
   }

Screenshot

Text

Description automatically generated Graphical user interface, text

Description automatically generated

1. Source code
2. #include<iostream>  
   #include <cmath>  
     
   using namespace std;  
     
   int main() {  
    double n, m;  
    double one = 1;  
     
    cout << "Input a number" << endl;  
    cin >> n;  
     
    m = fmod(n, one);  
    if ( m == 0) {  
    cout << n << " is an integer";  
    } else {  
    cout << n << " is not an integer";  
    }  
     
     
    return 0;  
   }

Screenshot

Graphical user interface, text, application

Description automatically generated Text

Description automatically generated