```cpp
// Nanang Tri Nur Wicaksono
// 231011700253

#include <iostream>
#include <cstdlib>
#include <cmath>
#include <iomanip>
using namespace std;

int pil;
char pilihan[5];
double panjang, lebar, hasil;

// menu
void menu() {
    system("cls");
    cout << "\n\t========================================";
    cout << "\n\t" << "231011700253"  << setw(30) << "Nanang Tri Nur Wicaksono";
    cout << "\n\t========================================";
    cout << "\n\t| [1] Hitung Luas";
    cout << "\n\t| [2] Hitung Keliling";
    cout << "\n\t| [3] Hitung Panjang Diagonal";
    cout << "\n\t| [4] Keluar Program";
    cout << "\n\t========================================";
    cout << "\n\tPilih Nomor : ";
}

// back to menu
```

```cpp
void backMenu(){
        char status;
        cout << "\tKembali ke menu utama [y/n] : ";
        cin >> status;
        if(status == 'y')
                menu();
        else
                backMenu();
}

// luas
void hitungLuas() {
   system("cls");
   cout << "\n\t==================================================";
   cout << "\n\t" << setw(35) << "Hitung Luas" << setw(35);
   cout << "\n\t==================================================";
        cout << "\n\tMasukkan panjang: ";
   cin >> panjang;
   cout << "\tMasukkan lebar: ";
   cin >> lebar;
   hasil = panjang * lebar;
   cout << "\tLuas persegi panjang: " << hasil << endl;
}

// keliling
void hitungKeliling() {
   system("cls");
   cout << "\n\t==================================================";
   cout << "\n\t" << setw(35) << "Hitung Keliling" << setw(35);
   cout << "\n\t==================================================";
        cout << "\n\tMasukkan panjang: ";
   cin >> panjang;
   cout << "\tMasukkan lebar: ";
   cin >> lebar;
   hasil = 2 * (panjang + lebar);
   cout << "\tKeliling persegi panjang: " << hasil << endl;
}

// panjang diagonal
void hitungDiagonal() {
   system("cls");
   cout << "\n\t==================================================";
   cout << "\n\t" << setw(35) << "Panjang Diagonal" << setw(35);
   cout << "\n\t==================================================";
        cout << "\n\tMasukkan panjang: ";
   cin >> panjang;
   cout << "\tMasukkan lebar: ";
   cin >> lebar;
```

```cpp
    hasil = sqrt(panjang * panjang + lebar * lebar);
    cout << "\tPanjang diagonal persegi panjang: " << hasil << endl;
}

// main default
int main() {
    menu();
    do {
        cin >> pilihan;
        pil = atoi(pilihan);
        switch (pil) {
            case 1:
                hitungLuas();
                                    backMenu();
                break;

            case 2:
                hitungKeliling();
                                    backMenu();
                break;

            case 3:
                hitungDiagonal();
                                    backMenu();
                                    break;

            case 4:
                system("cls");
                cout << "\n\t -- Terimah Kasih -- ";
                break;

            default:
                menu();
                cout << "\n\t -- Terimah Kasih -- ";
                break;
        }
    } while (pil < 5);

    return 0;
}
```

```
========================================
231011700253      Nanang Tri Nur Wicaksono
========================================
| [1] Hitung Luas
| [2] Hitung Keliling
| [3] Hitung Panjang Diagonal
| [4] Keluar Program
========================================
Pilih Nomor :
```

```
========================================================
                    Hitung Luas
========================================================
Masukkan panjang: 10
Masukkan lebar: 4
Luas persegi panjang: 40
Kembali ke menu utama [y/n] :
```

```
        =====================================================
                        Hitung Keliling
        =====================================================
Masukkan panjang: 10
Masukkan lebar: 5
Keliling persegi panjang: 30
Kembali ke menu utama [y/n] :
```

```
        =====================================================
                        Panjang Diagonal
        =====================================================
Masukkan panjang: 10
Masukkan lebar: 5
Panjang diagonal persegi panjang: 11.1803
Kembali ke menu utama [y/n] :
```

```
-- Terimah Kasih XD --
```