IT002.O216 - 23520161 - BT3

1. Diem

a. main.cpp

```cpp
#include <iostream>

#include "Diem.h"
using namespace std;

int main() {
  Diem A;
  float a, b, c, d;

  A.Nhap();
  A.Xuat();

  cout << "Thay doi toa do cua diem." << endl;
  cout << "Thay doi hoanh do: x= ";
  cin >> c;
  A.setX(c);

  cout << "Thay doi tung do: y= ";
  cin >> d;
  A.setY(d);

  cout << "Hoanh do cua diem: x= ";
  cout << A.getX() << endl;

  cout << "Tung do cua diem: y= ";
  cout << A.getY() << endl;

  cout << "Nhap toa do tinh tien: ";
  cin >> a >> b;
  A.TinhTien(a, b).Xuat();
  cout << endl;

  return 0;
}
```

b. Diem.h

```cpp
#pragma once
class Diem
{
  public:
    Diem();
```

```
    ~Diem();
    void Nhap();
    void Xuat() const;
    void setX(float);
    void setY(float);
    float getX() const;
    float getY() const;
    Diem TinhTien(float, float);

  private:
    float x, y;
};
```

c. Diem.cpp

```
#include "Diem.h"

#include <iostream>
using namespace std;

Diem::Diem() { x = y = 0; }
Diem ::~Diem() {}

void Diem::Nhap() {
  cout << "Nhap x, y: ";
  cin >> this->x >> this->y;
}

void Diem::Xuat() const {
  cout << "Toa do cua diem: ";
  cout << "(" << this->x << ", " << this->y << ")" << endl;
}

void Diem::setX(float initX) { this->x = initX; }
void Diem::setY(float initY) { this->y = initY; }

float Diem::getX() const { return this->x; }

float Diem::getY() const { return this->y; }

Diem Diem::TinhTien(float a, float b) {
  Diem temp;
  temp.setX(this->x + a);
  temp.setY(this->y + b);
  return temp;
}
```

2. TamGiac

a. main.cpp

```cpp
#include <iostream>

#include "Diem.h";
#include "TamGiac.h";
using namespace std;
int main() {
  TamGiac A;
  int a, b, k, rad;
  A.Nhap();
  A.Xuat();
  cout << "Nhap toa do tinh tien: ";
  cin >> a >> b;
  A.Tinhtien(a, b);
  A.Xuat();
  cout << "Nhap chi so thu phong: ";
  cin >> k;
  A.Thuphong(k);
  A.Xuat();
  cout << "Nhap chi so quay: ";
  cin >> rad;
  A.Quay(rad);
  A.Xuat();
  return 0;
}
```

b. Diem.h

```cpp
#pragma once
class Diem
{
  private:
    int x;
    int y;

  public:
    Diem();
    ~Diem();
    void nhap();
    void xuat();
    void tinhtien(int, int);
    void thuphong(int);
    void quay(int);
    friend class TamGiac;
};
```

c. Diem.cpp

```cpp
#include "Diem.h"

#include <iostream>
using namespace std;
Diem::Diem() { x = y = 0; }
Diem::~Diem() {}
void Diem::nhap() {
  cout << "Nhap hoanh do: ";
  cin >> this->x;
  cout << "Nhap tung do: ";
  cin >> this->y;
}
void Diem::xuat() { cout << "(" << this->x << "," << y << ")" << endl; }
void Diem::tinhtien(int a, int b) {
  this->x += a;
  this->y += b;
}
void Diem::thuphong(int k) {
  this->x *= k;
  this->y *= k;
}
void Diem::quay(int rad) {
  this->x = x * cos(rad) - y * sin(rad);
  this->y = x * sin(rad) + y * cos(rad);
}
```

e. TamGiac.h

```cpp
#pragma once
#include "Diem.h";
using namespace std;
class TamGiac
{
  private:
    Diem arr[3];

  public:
    void Nhap();
    void Xuat();
    void Tinhtien(int, int);
    void Quay(int);
    void Thuphong(int);
};
```

f. TamGiac.cpp

```cpp
#include "TamGiac.h"
```

```cpp
#include <iostream>
using namespace std;
void TamGiac::Nhap() {
  for (int i = 0; i < 3; i++) {
    cout << "Nhap toa do diem thu " << i + 1 << ": ";
    cout << endl;
    this->arr[i].nhap();
  }
}
void TamGiac::Xuat() {
  for (int i = 0; i < 3; i++) {
    cout << "Toa do diem thu " << i + 1 << ": ";
    this->arr[i].xuat();
  }
}
void TamGiac::Tinhtien(int a, int b) {
  for (int i = 0; i < 3; i++) {
    this->arr[i].tinhtien(a, b);
  }
}
void TamGiac::Quay(int rad) {
  for (int i = 0; i < 3; i++) {
    this->arr[i].quay(rad);
  }
}
void TamGiac::Thuphong(int k) {
  for (int i = 0; i < 3; i++) {
    this->arr[i].thuphong(k);
  }
}
```