COIN TOSS

```
#include <iostream>
#include <cstdlib>
#include <ctime>

class CoinToss
{
private:
  int outcome;

public:
  CoinToss()
  {
    outcome = 0;
    srand(time(0));
  }
  void toss()
  {
    outcome = rand() % 2;
  }
  std::string getOutcome()
  {
    if (outcome == 0)
      return "Heads";
    else
      return "Tails";
  }
};

int main()
{
  CoinToss coin;
  coin.toss();
  std::cout << "The outcome of the coin toss is: " << coin.getOutcome()
<< std::endl;
  return 0;
}
```

AREA

```
#include <iostream>

class Shape
{
protected:
  int side1;
  Shape()
```

```
  {
    side1 = 0;
  }
};

class Square : public Shape
{
public:
  void setSide(int s)
  {
    side1 = s;
  }
  int getArea()
  {
    return side1 * side1;
  }
};

class Rectangle : public Shape
{
  int side2;

public:
  void setSides(int s1, int s2)
  {
    side1 = s1;
    side2 = s2;
  }
  int getArea()
  {
    return side1 * side2;
  }
};

int main()
{
  Square square;
  square.setSide(4);
  std::cout << "The area of the square is: " << square.getArea() <<
std::endl;

  Rectangle rectangle;
  rectangle.setSides(4, 5);
  std::cout << "The area of the rectangle is: " << rectangle.getArea() <<
std::endl;

  return 0;
}
```

Calculator

calculator.h

```
class Calculator
{
  int num1, num2;
public:
  int add(int, int);
  int sub(int, int);
  int mul(int, int);
  double div(int, int);
};
```

Main.cpp

```
#include "calculator.h"
#include <iostream>

int main()
{
  Calculator calc;
  int n1, n2;
  std::cout << "Enter two numbers: ";
  std::cin >> n1 >> n2;
  std::cout << "Addition: " << calc.add(n1, n2) << std::endl;
  std::cout << "Subtraction: " << calc.sub(n1, n2) << std::endl;
  std::cout << "Multiplication: " << calc.mul(n1, n2) << std::endl;
  std::cout << "Division: " << calc.div(n1, n2) << std::endl;
  return 0;
}
```

Add.cpp

```
#include "calculator.h"

int Calculator::add(int n1, int n2)
{
  num1 = n1;
  num2 = n2;
  return num1 + num2;
}
```

Sub.cpp

```
#include "calculator.h"

int Calculator::sub(int n1, int n2)
```

```
{
  num1 = n1;
  num2 = n2;
  return num1 - num2;
}
```

Div.cpp

```
#include "calculator.h"

double Calculator::div(int n1, int n2)
{
  num1 = n1;
  num2 = n2;
  return num1 / num2;
}
```

MUL.cpp

```
#include "calculator.h"

int Calculator::mul(int n1, int n2)
{
  num1 = n1;
  num2 = n2;
  return num1 * num2;
}
```