**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;

}