OOPS LAB 03

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## Task 1

#include <iostream>  
using namespace std;  
  
class Student {  
public:  
 string name;  
 int rollNumber;  
};  
  
int main() {  
 Student s1;  
 s1.name = "Abdul";  
 s1.rollNumber = 633;  
  
 cout << "Name: " << s1.name << endl;  
 cout << "Roll Number: " << s1.rollNumber << endl;  
  
 return 0;  
}



## Task 2

#include <iostream>  
using namespace std;  
  
class Student {  
private:  
 int rollNumber;  
public:  
 string name;  
  
 void setRollNo(int r) {  
 rollNumber = r;  
 }  
 int getRollNo() {  
 return rollNumber;  
 }  
};  
  
int main() {  
 Student s1;  
 s1.name = "Rahim";  
 s1.setRollNo(633);  
  
 cout << "Name: " << s1.name << endl;  
 cout << "Roll Number: " << s1.getRollNo() << endl;  
  
 return 0;  
}



## Task 3

#include <iostream>  
using namespace std;  
  
class Calculator {  
private:  
 int num1, num2;  
public:  
 void setNumbers(int a, int b) {  
 num1 = a;  
 num2 = b;  
 }  
 int add() {  
 return num1 + num2;  
 }  
};  
  
int main() {  
 Calculator c1;  
 c1.setNumbers(10, 20);  
 cout << "Sum: " << c1.add() << endl;  
  
 return 0;  
}



## Task 4

#include <iostream>  
using namespace std;  
  
class Calculator {  
private:  
 int num1, num2;  
public:  
 void setNumbers(int a, int b);  
 int add();  
};  
  
void Calculator::setNumbers(int a, int b) {  
 num1 = a;  
 num2 = b;  
}  
int Calculator::add() {  
 return num1 + num2;  
}  
  
int main() {  
 Calculator c1;  
 c1.setNumbers(15, 25);  
 cout << "Sum: " << c1.add() << endl;  
  
 return 0;  
}



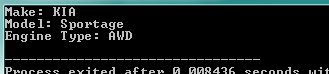
## Task 5

#include <iostream>  
using namespace std;  
  
class Concrete {  
private:  
 string message;  
public:  
 Concrete(string msg) {  
 message = msg;  
 }  
 void displayMessage() {  
 cout << "Message: " << message << endl;  
 }  
};  
  
int main() {  
 Concrete obj("Hello, my name is Abdul Rahim Dawra!");  
 obj.displayMessage();  
  
 return 0;  
}



## Task 6

#include <iostream>  
using namespace std;  
  
class Vehicle {  
public:  
 string make, model;  
 void displayInfo() {  
 cout << "Make: " << make << "\n" << ", Model: " << model << endl;  
 }  
};  
  
class Car : public Vehicle {  
public:  
 string engineType;  
 void displayInfo() {  
 Vehicle::displayInfo();  
 cout << "Engine Type: " << engineType << endl;  
 }  
};  
  
int main() {  
 Car c1;  
 c1.make = "KIA";  
 c1.model = "Sportage";  
 c1.engineType = "AWD";  
  
 c1.displayInfo();  
  
 return 0;  
}



## Task 7

#include <iostream>  
using namespace std;  
  
class Student {  
private:  
 string name;  
 int rollNo;  
 double marks;  
 char grade;  
  
public:  
 Student(string n, int r, double m) {  
 name = n;  
 rollNo = r;  
 marks = m;  
 }  
  
 void calculateGrade() {  
 if (marks >= 90) grade = 'A';  
 else if (marks >= 80) grade = 'B';  
 else if (marks >= 70) grade = 'C';  
 else grade = 'F';  
 }  
  
 void displayStudentInfo() {  
 cout << "Name: " << name << endl;  
 cout << "Roll No: " << rollNo << endl;  
 cout << "Marks: " << marks << endl;  
 cout << "Grade: " << grade << endl << endl;  
 }  
};  
  
int main() {  
 Student s1("Abdul", 1, 85);  
 Student s2("Rahim", 2, 68);  
  
 s1.calculateGrade();  
 s2.calculateGrade();  
  
 s1.displayStudentInfo();  
 s2.displayStudentInfo();  
  
 return 0;  
}

