

MUHAMMAD ASHAR KAMAL

24K-3076

SECTION : SE-243B

INSTRUCTOR : MR ABDULLAH
YAQOOB

TASK NO. 1

//TASK #01 by Muhammad Ashar Kamal 24K-3076

```
#include <iostream>

using namespace std;

class Student {

public:

    string name;

    int rollNumber;

};

int main() {

    Student s1;

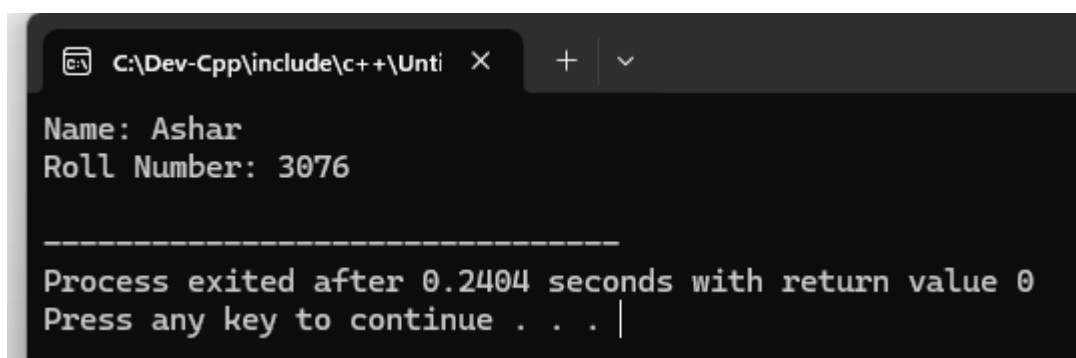
    s1.name = "Ali";

    s1.rollNumber = 101;

    cout << "Name: " << s1.name << endl;

    cout << "Roll Number: " << s1.rollNumber << endl;

    return 0; }
```

A screenshot of a terminal window showing the output of a C++ program. The window title is "C:\Dev-Cpp\include\c++\Unti". The output displays "Name: Ashar" and "Roll Number: 3076" on separate lines. Below this, a dashed line separates the output from a status message: "Process exited after 0.2404 seconds with return value 0". The prompt "Press any key to continue . . ." is visible at the bottom, with a cursor at the end of the line.

```
C:\Dev-Cpp\include\c++\Unti X + v
Name: Ashar
Roll Number: 3076

-----
Process exited after 0.2404 seconds with return value 0
Press any key to continue . . . |
```

TASK NO.02:

//TASK #02 by Muhammad Ashar Kamal 24K-3076

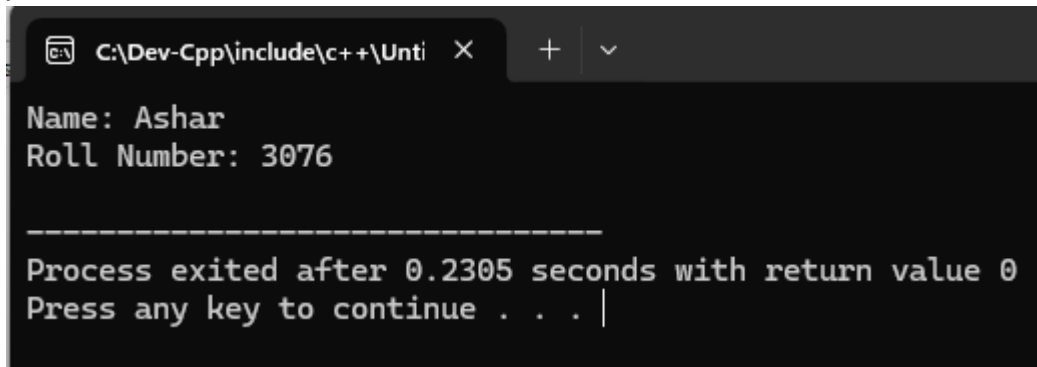
```
#include <iostream>

using namespace std;
```

```
class Student {  
private:  
    string name;  
    int rollNumber;  
public:  
    void setName(string n) {  
        name = n;  
    }  
    string getName() {  
        return name;  
    }  
    void setRollNo(int r) {  
        rollNumber = r;  
    }  
    int getRollNo() {  
        return rollNumber;  
    }  
};
```

```
int main() {  
    Student s1;  
    s1.setName("Ali");  
    s1.setRollNo(101);  
    cout << "Name: " << s1.getName()  
<< endl;  
    cout << "Roll Number: " <<  
s1.getRollNo() << endl;  
  
    return 0;
```

```
}
```

A screenshot of a terminal window with a dark background. The window title bar shows a file path: "C:\Dev-Cpp\include\c++\Unti" followed by a close button (X) and window control buttons (+ and v). The terminal output displays the program's results: "Name: Ashar", "Roll Number: 3076", a separator line of dashes, "Process exited after 0.2305 seconds with return value 0", and "Press any key to continue . . . |".

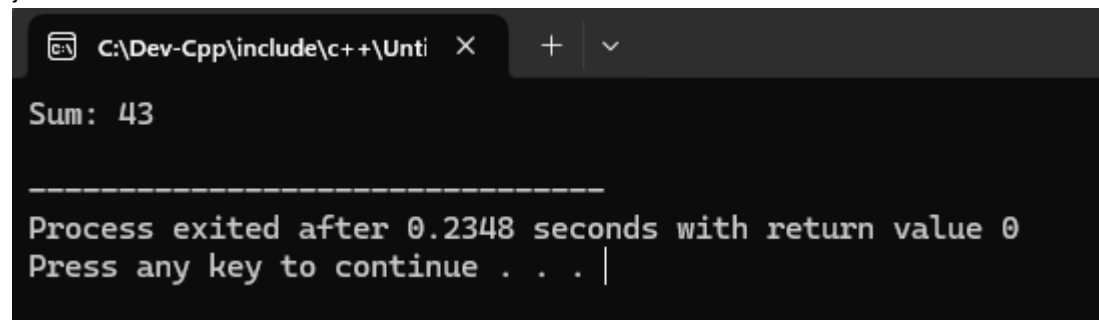
```
C:\Dev-Cpp\include\c++\Unti X + v  
Name: Ashar  
Roll Number: 3076  
-----  
Process exited after 0.2305 seconds with return value 0  
Press any key to continue . . . |
```

TASK NO. 03:

//TASK #03 by Muhammad Ashar Kamal 24K-3076

```
#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 calc;  
  
    calc.setNumbers(10, 20);  
  
    cout << "Sum: " << calc.add() <<  
endl;
```

```
    return 0;
}
```

A screenshot of a terminal window with a dark background. The title bar shows a file path: "C:\Dev-Cpp\include\c++\Unti". The output text is as follows:

```
Sum: 43
-----
Process exited after 0.2348 seconds with return value 0
Press any key to continue . . . |
```

TASK NO. 04:

//TASK #04 by Muhammad Ashar Kamal 24K-3076

```
#include <iostream>

using namespace std;

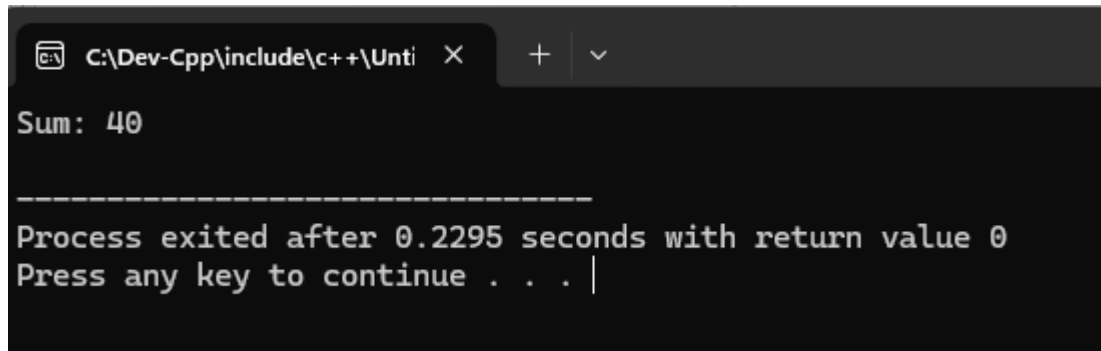
class Calculator {
private:
    int num1, num2;
public:
    void setNumbers(int a, int b);
    int add();
};

void Calculator::setNumbers(int a, int b) {
    num1 = a;
    num2 = b;
}

int Calculator::add() {
    return num1 + num2;
}

int main() {
    Calculator calc;
    calc.setNumbers(15, 25);
```

```
cout << "Sum: " << calc.add() << endl;
return 0;
}
```



```
C:\Dev-Cpp\include\c++\Unti X + v
Sum: 40
-----
Process exited after 0.2295 seconds with return value 0
Press any key to continue . . . |
```

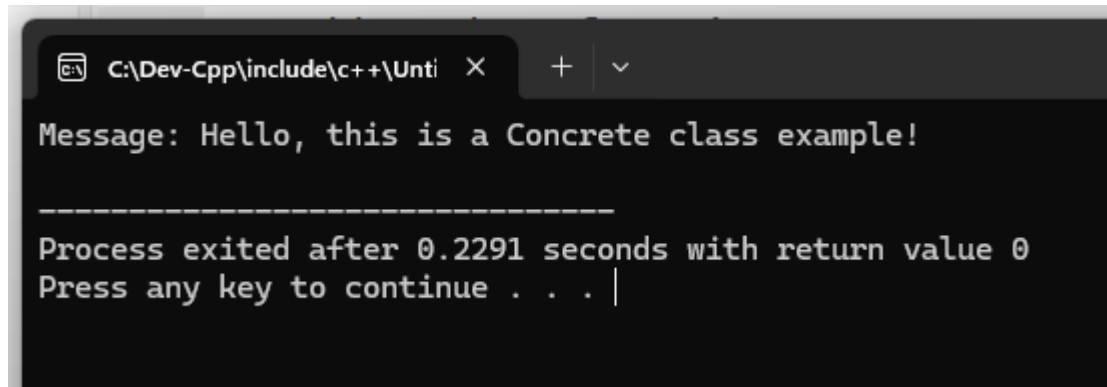
TASK NO.05:

//TASK #05 by Muhammad Ashar Kamal 24K-3076

```
#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, this is a Concrete class example!");
```

```
obj.displayMessage();  
return 0;  
}
```

A screenshot of a terminal window with a dark background. The window title bar shows a file path: "C:\Dev-Cpp\include\c++\Unti" followed by a close button. The terminal output displays the message "Message: Hello, this is a Concrete class example!" followed by a horizontal line of dashes. Below the dashes, it says "Process exited after 0.2291 seconds with return value 0" and "Press any key to continue . . . |".

```
C:\Dev-Cpp\include\c++\Unti X + v  
Message: Hello, this is a Concrete class example!  
-----  
Process exited after 0.2291 seconds with return value 0  
Press any key to continue . . . |
```

TASK NO. 06

//TASK #06 by Muhammad Ashar Kamal 24K-3076

```
#include <iostream>  
using namespace std;  
class Vehicle {  
public:  
    string make;  
    string model;  
    void displayInfo() {  
        cout << "Make: " << make << ", Model: " << model << endl;  
    }  
};
```

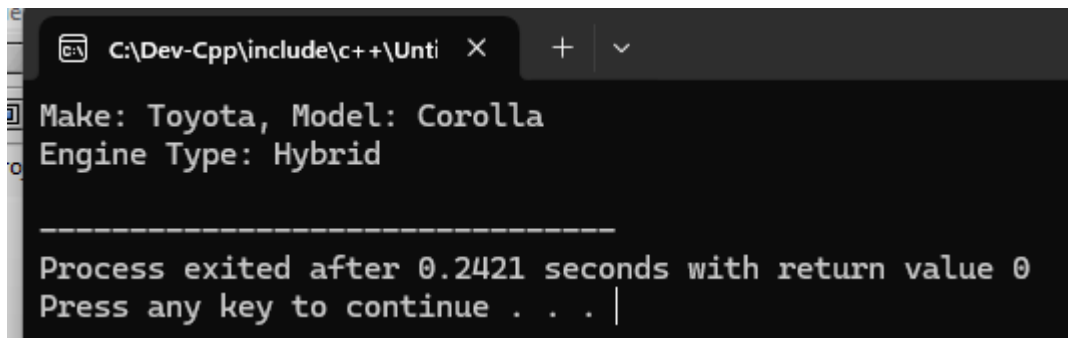
```
class Car : public Vehicle {  
public:  
    string engineType;  
    void displayInfo() {  
        Vehicle::displayInfo();  
        cout << "Engine Type: " << engineType << endl;  
    }  
};
```

```

    }
};

int main() {
    Car c;
    c.make = "Toyota";
    c.model = "Corolla";
    c.engineType = "Hybrid";
    c.displayInfo();
    return 0;
}

```



```

C:\Dev-Cpp\include\c++\Unti
Make: Toyota, Model: Corolla
Engine Type: Hybrid

-----
Process exited after 0.2421 seconds with return value 0
Press any key to continue . . . |

```

TASK NO. 07

//TASK #07 by Muhammad Ashar Kamal 24K-3076

```

#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;
        grade = 'F';
    }
};

```



```
}
```

```
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("Ali", 101, 92.5);  
    Student s2("Sara", 102, 76.3);
```

```
    s1.calculateGrade();  
    s2.calculateGrade();
```

```
    s1.displayStudentInfo();  
    s2.displayStudentInfo();
```

```
    return 0;
```

```
}
```

C:\Dev-Cpp\include\c++\Unti X

+ v

Name: Ashar
Roll No: 3076
Marks: 92.5
Grade: A

Name: Sara
Roll No: 6130
Marks: 76.3
Grade: C

Process exited after 0.233 seconds with return value 0
Press any key to continue . . . |