1.

```cpp
#include <iostream>

#include <iostream>
#include <string>

class Student {
private:
    std::string name;
    std::string studentID;
    double gpa;

public:
    // Constructor
    Student(const std::string& name, const std::string& id, double gpa)
        : name(name), studentID(id), gpa(gpa) {}

    // Getters
    std::string getName() const {
        return name;
    }

    std::string getStudentID() const {
        return studentID;
    }

    double getGPA() const {
        return gpa;
    }

    // Setters
    void setName(const std::string& name) {
        this->name = name;
    }

    void setStudentID(const std::string& id) {
        studentID = id;
    }

    void setGPA(double gpa) {
        this->gpa = gpa;
    }
};

int main() {
    // Create a Student object with sample data
    Student student("John Doe", "RU12345", 3.5);

    // Print the student's information using getters
    std::cout << "Student Name: " << student.getName() << std::endl;
    std::cout << "Student ID: " << student.getStudentID() << std::endl;
```

```
58      std::cout << "Student ID: " << student.getStudentID() << std::endl;
59      std::cout << "GPA: " << student.getGPA() << std::endl;
60
61      return 0;
62  }
```

input

```
Student Name: John Doe
Student ID: RU12345
GPA: 3.5
```

2. .

```
9   #include <iostream>
10  #include <string>
11
12  class Book {
13  private:
14      std::string title;
15      std::string author;
16      int publicationYear;
17
18  public:
19      // Constructor
20      Book(const std::string& title, const std::string& author, int year)
21          : title(title), author(author), publicationYear(year) {
22          std::cout << title << " by " << author << " added." << std::endl;
23      }
24
25      // Destructor
26      ~Book() {
27          std::cout << title << " by " << author << " removed." << std::endl;
28      }
29  };
30
31  int main() {
32      // Create Book objects
33      Book book1("1984", "George Orwell", 1949);
34      Book book2("Brave New World", "Aldous Huxley", 1932);
35
36      // Book objects will be automatically destroyed when they go out of scope
37      return 0;
38  }
```

```
1984 by George Orwell added.
Brave New World by Aldous Huxley added.
Brave New World by Aldous Huxley removed.
1984 by George Orwell removed.
```

3. .

```cpp
#include <iostream>
#include <string>
#include <iomanip>

class BankAccount {
private:
    std::string accountNumber;
    double balance;

public:
    // Constructor
    BankAccount(const std::string& accountNumber)
        : accountNumber(accountNumber), balance(0.0) {}

    // Deposit method
    void deposit(double amount) {
        balance += amount;
    }

    // Withdraw method
    void withdraw(double amount) {
        if (balance >= amount) {
            balance -= amount;
        } else {
            std::cout << "Withdrawal failed: Insufficient funds." << std::endl;
        }
    }

    // Get balance method
    double getBalance() const {
        return balance;
    }
};
```

```cpp

int main() {
    // Create a BankAccount object
    BankAccount account("1234567890");

    // Print initial balance
    std::cout << "Initial Balance: $" << std::fixed << std::setprecision(2) << account.getBalance() << std::endl;

    // Deposit money
    double depositAmount = 500.0;
    std::cout << "Depositing: $" << depositAmount << std::endl;
    account.deposit(depositAmount);
    std::cout << "New Balance: $" << account.getBalance() << std::endl;

    // Attempt to withdraw more than the balance
    double withdrawAmount = 600.0;
    std::cout << "Attempting to withdraw: $" << withdrawAmount << std::endl;
    account.withdraw(withdrawAmount);

    // Print final balance
    std::cout << "Final Balance: $" << account.getBalance() << std::endl;

    return 0;
}
```

input

```
New Balance: $500.00
Attempting to withdraw: $600.00
Withdrawal failed: Insufficient funds.
Final Balance: $500.00
```