**3.11**

//GradeBook.h

#include <string>

using namespace std;

class GradeBook

{

public:

GradeBook(string, string);

void setCourseName(string);

string getCourseName();

void setInstructorName(string);

string getInstructorName();

void displayMessage();

private:

string courseName;

string instructorName;

};

//end GradeBook.h

//GradeBook.cpp

#include "GradeBook.h"

#include <iostream>

using namespace std;

GradeBook::GradeBook(string courseName, string instructorName) {

setCourseName(courseName);

setInstructorName(instructorName);

}

void GradeBook::setCourseName(string name) {

courseName = name;

}

string GradeBook::getCourseName() {

return courseName;

}

void GradeBook::setInstructorName(string name) {

instructorName = name;

}

string GradeBook::getInstructorName() {

return instructorName;

}

void GradeBook::displayMessage() {

cout << "Welcome to the grade book for\n" << getCourseName() << "!" << endl;

cout << "This course is presented by: " << getInstructorName() << "." << endl;

}

//end GradeBook.cpp

//tester.cpp

#include "GradeBook.h"

int main() {

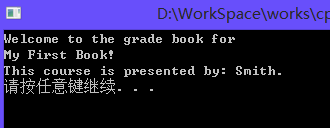
GradeBook book{"My First Book", "Smith"};

book.displayMessage();

system("pause");

}

//end tester.cpp



**3.13**

//Invoice.h

#include <string>

using namespace std;

class Invoice

{

public:

Invoice(string, string, int, int);

void setPartNumber(string);

void setPartDescription(string);

void setQuantity(int);

void setPrice(int);

string getPartNumber();

string getPartDescription();

int getQuantity();

int getPrice();

int getInvoiceAmount();

private:

string partNumber\_;

string partDescription\_;

int quantity\_;

int price\_;

};

//end Invoice.h

//Invoice.cpp

#include "Invoice.h"

using namespace std;

Invoice::Invoice(string partNumber, string partDescription, int quantity, int price) {

setPartNumber(partNumber);

setPartDescription(partDescription);

setQuantity(quantity);

setPrice(price);

}

void Invoice::setPartNumber(string partNumber) {

partNumber\_ = partNumber;

}

void Invoice::setPartDescription(string partDescription) {

partDescription\_ = partDescription;

}

void Invoice::setQuantity(int quantity) {

if (quantity >= 0)

quantity\_ = quantity;

else

quantity\_ = 0;

}

void Invoice::setPrice(int price) {

if (price >= 0)

price\_ = price;

else

price\_ = 0;

}

string Invoice::getPartNumber() {

return partNumber\_;

}

string Invoice::getPartDescription() {

return partDescription\_;

}

int Invoice::getQuantity() {

return quantity\_;

}

int Invoice::getPrice() {

return price\_;

}

int Invoice::getInvoiceAmount() {

return quantity\_ \* price\_;

}

//end Invoice.cpp

//tester.cpp

#include "Invoice.h"

#include <iostream>

using namespace std;

int main() {

Invoice invoice{"001", "RTX2080Ti", 150, 9999};

cout << "The part number is " << invoice.getPartNumber()<<endl;

cout << "The part description is " << invoice.getPartDescription() << endl;

cout << "The quantity is " << invoice.getQuantity() << endl;

cout << "The price is " << invoice.getPrice() << endl;

cout << "The amount is " << invoice.getInvoiceAmount() << endl;

system("pause");

}//end tester.cpp

**3.14**

//Employee.h

#include <string>

using namespace std;

class Employee

{

public:

Employee(string, string, int);

void setFirstName(string);

void setLastName(string);

void setSalary(int);

string getFirstName();

string getLastName();

int getSalary();

private:

string firstName\_;

string lastName\_;

int monthlySalary\_;

};

//end Employee.h

//Employee.cpp

#include "Employee.h"

using namespace std;

Employee::Employee(string firstName, string lastName, int salary) {

setFirstName(firstName);

setLastName(lastName);

setSalary(salary);

}

void Employee::setFirstName(string firstName) {

firstName\_ = firstName;

}

void Employee::setLastName(string lastName) {

lastName\_ = lastName;

}

void Employee::setSalary(int salary) {

if (salary >= 0)

monthlySalary\_ = salary;

else

monthlySalary\_ = 0;

}

string Employee::getFirstName() {

return firstName\_;

}

string Employee::getLastName() {

return lastName\_;

}

int Employee::getSalary() {

return monthlySalary\_;

}

//end Employee.cpp

//tester.cpp

#include "Employee.h"

#include <iostream>

using namespace std;

void showYearlySalary(Employee);

int main() {

Employee employee1{"John", "Smith", 50000};

Employee employee2{ "Catherine", "Jobs", 40000 };

showYearlySalary(employee1);

showYearlySalary(employee2);

employee1.setSalary( int(employee1.getSalary() \* 1.1) );

employee2.setSalary( int(employee2.getSalary() \* 1.1) );

cout << "After modifying: " << endl;

showYearlySalary(employee1);

showYearlySalary(employee2);

system("pause");

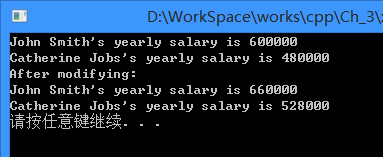
}

void showYearlySalary(Employee employee) {

cout << employee.getFirstName() << ' ' << employee.getLastName() << "'s yearly salary is " << employee.getSalary() \* 12 << endl;

}

//end tester.cpp



**3.15**

//Date.h

class Date

{

public:

Date(int, int, int);

void setYear(int);

void setMonth(int);

void setDay(int);

int getYear();

int getMonth();

int getDay();

void displayDate();

private:

int year\_;

int month\_;

int day\_;

};

//end Date.h

//Date.cpp

#include "Date.h"

#include <iostream>

using namespace std;

Date::Date(int month, int day, int year) {

setMonth(month);

setDay(day);

setYear(year);

}

void Date::setYear(int year) {

year\_ = year;

}

void Date::setMonth(int month) {

if (month >= 1 && month <= 12)

month\_ = month;

else

month\_ = 1;

}

void Date::setDay(int day) {

day\_ = day;

}

int Date::getYear() {

return year\_;

}

int Date::getMonth() {

return month\_;

}

int Date::getDay() {

return day\_;

}

void Date::displayDate() {

cout << "The Date is " << getMonth() << '/' << getDay() << '/' << getYear() << endl;

}

//end Date.cpp

//tester.cpp

#include "Date.h"

#include <iostream>

int main() {

Date date{11,26,2018};

date.displayDate();

system("pause");

}

//end tester.cpp

