

**NAME: LINTA AFFAF**  
**DEPT: SOFTWARE ENGINEERING(SELF)**  
**PF LAB WORK**

**1.**

ClassAverage.cpp

Solving the class-average problem using sentinel-controlled iteration.

```
#include <iostream>
```

```
#include <iomanip> manipulators
```

```
using namespace std;
```

```
int main()
```

```
int total();
```

```
cout << "Enter grade or -1
```

```
int grade; cin >> grade;
```

```
while (grade != -1) { total = total + grade;
```

```
gradeCounter++; gradeCounter = 1;
```

```
cout << "Enter grade or -1 to exit
```

```
cin >> grade;
```

```
if (gradeCounter) (
```

```
// use number with decimal point to calculate average of grades
```

```
double average[static cast<double>(total) / gradeCounter]:
```

```
cout <<Total of the << gradeCounter
```

```
grades entered is << total:
```

```
cout << setprecision() << fixed:
```

```
cout << Class average is <<< average << endl;
```

```
else
```

```
cout << grades sere entered" << endl;
```

```
Enter grade or or -1 to quit: 97 to quit: 97
```

```
Enter grade or -1 to quit: 88
```

```
Enter grade or 1 to quit: 72
```

Enter grade or 1 to quit: -1

Total of the 3 grades entered is 257.

Class average is 85.67

2. while (grade f

total total grade; // add grade to total gradeCounter gradeCounter 1: // increment counter

// prompt for Input and read next grade from user cout << "Enter grade or 1 to cin >> grade

3. : Analysis.cpp:

// Analysis of examination results using nested control statements.

#include <iostream

using namespace std;

int main C

// initializing variables in declarations unsigned int passes(0);

unsigned int failures(0); unsigned int studentCounter();

// process 10 students using counter-controlled Toop while (studentCounter<10) // prompt user for ing  
Input and obtain value from user

cout << "Enter result (1 pass 2): ": result:

```
int cin result:
```

```
// if...else is nested in the while statement if (result) ( passes passes
```

```
) else ( failures failures:
```

```
studentCounter studentCounter + 1;
```

```
<< se passes <<Failed: << failures <<< endl;
```

```
(passes cout << Bonus to instructor" << endl;
```

```
4. : Increment.cpp:
```

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
unsigned int c();
```

```
cout << pestincrementing C++ << endl; << after pessincrement: <<< endl;
```

```
cout << before postiocrement: <c<< endl;
```

```
cout << endl;
```

C51

`cout << before preincrement: <<endl; <<c<< endl; prints s`

`cout << cout << c after preincrement« c << endl; prints 6 preincrementing`

`c before postincrement: S postincrementing c`

`c after postincrement:`

`c before preincrement: 5 preincrementing. c:`

`c after preincrement`

Chapter 5

1. 2:39 PM

C++ How to Progr...

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Fig. 5.11: LetterCrades, cpp

Using a switch statement to count letter grades.

```
#include <iostream>
```

```
#include <iomanip>
```

using namespace std;

int main() {

int total(0); sum of grades

unsigned int gradeCounter[0]; number of grades entered

unsigned int aCount(); count of A grades unsigned int bCount(); count of B grades

unsigned int cCount(); count of C grades

unsigned int dCount(); count of D grades unsigned int fCount(); count of F grades

cout << "Enter the integer grades in the range 0-100.

"Type the end-of-file indicator to terminate Input:\n

UNIX/Linux/Mac OS x type Ctrl & then press Del Wind type Ctrl z then press Enter": Enter

int grade;

while (cin >> grade) {

total += grade; // add grade to total ++gradeCounter; increment number of grades

Increment appropriate letter-grade counter

```
switch (grade/10) {
```

```
case 1 Inclusive
```

```
aCount:
```

```
break;
```

```
case 2
```

```
++bCount: break;
```

```
case 3
```

```
++cCount:
```

```
break;
```

Fig. 5.11 Using a switch statement to count letter grades. (Part 1 of 1)

222 Chapter 5 Control Statements: Part 2: Logical Operators

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```
case 4:
```

```
++dCount:
```

break;

default:

++fCount:

break; optional; exits switch anyway

end switch } end while

/ set floating-point number format

cout << fixed << setprecision(2):

display grade report cout Grade Report:

if user entered least one grade...

if (gradeCounter) [ calculate average of all grades entered

double average static castedouble(total) / gradeCounter;

output summary of results

cout << "Total of the gradeCounter grades entered is

total class average to << average.

of students who received each grade



```
<<<< aCount <<<< Count <<
```

```
Count exfCount << endl;
```

```
cCount
```

```
else { // no grades were entered, so output appropriate message
```

```
coute
```

```
grades were entered or endl:
```

Enter the integer grades in the range 0-100.

Type the end-of-file indicator to terminate Input:

On UNIX/Linux/Mac OS X type <Ctrl> d then press Enter

On Windows

type

<Ctrl>z then press Enter

100

AZ

Grade Report:

Total of the 10 grades entered is 778

Class average t

```
2. int main() { DollarAmount d1(12345); $123.45 DollarAmount d2(1576); $15.76
```

```
cout << "After adding 62 (<< d2.toString() << " to d1 C << d1.toString() <<
```

```
d1.add(d2); // modifies object cout << d1.toString() << " d1
```

```
cout << "After subtracting d<< d2.toString() << " d1, subtract (d2); modifies object d1
```

```
cout << d1.toString() <<
```

```
cout << "After subtracting d1 d1.toString() << " d1
```

```
d2.toString() << " d2.subtract(d1); modifies object d2
```

```
cout << d2.toString() <<
```

```
cout << "Enter Integer Interest rate and divisor, for example:"
```

```
for 25 : 100 << "for 2.3. enter 232000
```

```
for 2.17%, enter: 237 10000 for 2.375%, enter: 2375 100000
```

```
int rate;
```

```
cin >> rate >> divisor;
```

```
DollarAmount balance(100000); amount in pennies cout << ninitial balance balance.toString() << endl;
```

display headers

```
cout << "intear << setw(20) << deposit endl
```

3. Interesse

```
include fstream
```

```
include ceaths
```

```
function
```

```
cout << fixed
```

```
setprecisionC
```

```
double principa double rate());
```

```
unt before Interest
```

```
principal and
```

display headers

```
cout
```

C and1

/calcalate

int year(): year year)

year sete) around endl;

3. / Summing integers with the for statement.

Finclude <iostream>

using namespace std;

int main() {

unsigned int total(0);

10 (unsigned int number(); number<20; number

11 total number:

4. using namespace std;

unsigned int counter(1);

int main() {

while (counter < 10)

```
10 11 ++counter;
```

```
cout << counter << 1
```

```
14 cout << endl;
```

```
5. #include <iostream
```

```
using namespace std;
```

```
int main C
```

```
passes(0);
```

```
unsigned int failures(0); unsigned int studentCounter();
```

```
while (studentCounter<10) prompt user for ing Input and obtain value from user
```

```
cout << "Enter result (1 pass 2): ": result:
```

```
int cin result:
```

```
if...else is nested in the while statement if (result) ( passes passes
```

```
) else ( failures failure
```

```
terminates
```

```
studentCounter studentCounter + 1;
```

```
cout << se passes <<Failed: << failures <<< endl;
```

```
if (passes cout << Bonus to instructor" << endl;
```