

Homework Assignment 2 (20 Points)

CSE 100, Fall B 2013

School of Computing, Informatics and Decision Systems Engineering
Arizona State University

Introduction: This assignment helps you to reinforce the topics discussed in the class including Selection statements and repetition statements.

Important: This is an individual assignment. Please do not collaborate.

Grading policy: We will check

- a) The correctness of your program/solution
- b) Variable naming (self describing)
- c) Identification of proper data type
- d) Appropriate commenting and Indentation.

Part 1 (6 Points):

1. Answer following questions. Assume the all the code snippets are syntactically correct and embedded in a correct program.

- a) Assuming that the user provides 99 as input, what is the output of the following code snippet?

```
int a;
int b;
a = 0;
cout<<"Please enter a number: ";
cin>>b;
if (b > 300)
{
    a = b;
}
else
{
    a = 0;
}
cout<<"a: " << a;
```

A) If user inputs 99 than output will be 0. The reason being that cin stores to b and the if statement states if b is not greater than 300 than a = 0 so it outputs: a: 0

- b) Assuming that a user enters 45, 78, and then 12, what is the output of the following code snippet?

```
int num1 = 0;
int num2 = 0;
int num3 = 0;

cout<<"Enter a number: ";
cin>>num1;
cout<<"Enter a number: ";
cin>>num2;
cout<<"Enter a number: ";
cin>>num3;
if (!(num1 > num2 && num1 > num3))
{
    cout<<num1;
}
else if (!(num2 > num1 && num2 > num3))
{
    cout<<num2;
}
else if (!(num3 > num1 && num3 > num2))
{
    cout<<num3;
}
```

Part II: Using Selection

2. Shipping Charges Program[14 Points]

The Fast Freight Shipping Company charges following rates

Weight of Packages (pounds)	Rate per 500 miles Shipped
2 => weight	\$1.10
2 < weight <= 6	\$2.20
6 < weight <= 10	\$3.70
10 < weight <= 20	\$4.80

Write a java program that asks for the weight of the package and the distance to be shipped. Then, compute the total charge. Charge is computed in 500 mile increments. For example, if the weight of the package is 3 pounds and distance to travel is 680 miles, then the charge will be
 $\$2.20 * 2 = \4.40

You might need to use the *ceil()* method defined the *cmath* library for this computation. Definition of *ceil()* method can be found @

<http://www.cplusplus.com/reference/cmath/ceil/>

Also, here is an example of its usage

```
int x=680;
```

```
int y = 500;  
double range = ceil((static_cast<double>(x)/y);  
cout<<range;
```

Input validation:

Do not accept 0 or less for the weight of the package. If the weight of the package is 0 or less, display the message “weight should be a greater than 0”

Do not accept more than 20 for the weight of the package. If the weight of the pages more than 20, display the message “max weight should 20”

Also, do not accept the distances of less than 10 and greater than 3000 (these are the company’s min and mx shipping distances)

Save your program as **Assignment2.cpp.**

Submission Instructions

- Submit your **Assignment2.cpp** file on-line to the dropbox Homework 2 basket.
- Assignment2.cpp should have the following, in order:
 - In comments, the answers to questions in part I
 - Program that implements your solution to part II

NO LATE ASSIGNMENTS WILL BE ACCEPTED