**CSCI 145 Homework 2**

Due Wednesday, 5/24/2023

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Chapter 9

Ex 9.1

|  |
| --- |
| Clock |
| # hour : int  # mminute : int  # second : int |
| + Clock(hour : int, minute: int, second : int)  + changeTime(hour : int, minute: int, second : int) : void |

Ex 9.7

Ex 9.8

The chid class calls the constructor in the parent class implicitly even if I did not call the constructor of the parent class explicitly. When I call the constructor of the parent class explicitly, there is no difference at all. I believe that the child class is able to call the constructor of the parent class is due to fact that the constructor does not take in any parameters, otherwise there will be compilation errors.

PP 9.1

Source code below:

Input/output below:

Chapter 10

Ex 10.2

Ex 10.3

Ex 10.4

If the pay method were not defined as an abstract method, all StaffMember may end up being getting pay the same way including Volunteer which are not supposed to be get paid. Also, payRate has to be defined in StaffMember class.

PP 10.4

Source code below:

Input/output below:

Chapter 11

Ex 11.2

Ex 11.3

Ex 11.4

PP 11.2

Source code below:

Input/output below:

Chapter 12

Ex 12.2

public int power(int x, int y) {

if (y == 0)

return 1;

if (y > 1)  
 return x \* power(x, y -1);

else

return x;

}

Ex 12.3

public int mul(int i, int j) {

if (i == 0)

return 0;

if (i > 1)

return j + mul(i – 1, j);

else

return j;

}

Ex 12.5

public int sum(int num)

{

int result;

if (num = = 1)

result = 1;

else

result = num + sum(num-1);

return result;

}

public int sum(int n, int start) {

int m = (n + start) / 2;

if (start > n)

return 0;

if (start == n)

return n;

return sum(m, start) + sum(n, m + 1);

}

PP 12.1

Source code below:

Input/output below: