**HW#2**

**Part 1**

R 5.9

Default constructor is a constructor with no parameters in it.

If a class does not have a default constructor, the class object will be initialized with some uncertain value.

R 5.13

Encapsulation is an object oriented programming concept that binds together the data and functions that manipulate the data, which keeps both safe from outside inference and misuse.

1. The hidden capability keeps the data safe.
2. It is easier to understand the code from the main.cpp and the head file.
3. It helps to reduce errors compared to put all value and data in the same file.

R 6.4 The vector’s legal index is only 9 rather than 10.

Solution 1:

vector<int> v(10);

int i;

for(i=1;i<=9;i++) v[i]=i\*i;

Solution 2:

vector<int> v(11);

int i;

for(i=1;i<=10;i++) v[i]=i\*i;

R 6.5

Index of the vector or array is an integer to represent the position that the value of the vector is stored at.

The legal index values range from 0 to (the number of elements in the array or vector -1).

Bound is error is like you declare a vector a whose size is 5, but you look for the value of a[6]. This will cause the bound error.