Chapter 5 Important Notes :

- The chapter starts with us to give us a case we will try to develop it so it gives us the case as a text and sceneries not give us direct requirements and the first thing we must make it first is to know or define the general flow of the system and summarize the main idea as we understood and then the second thing is to think about what the things (objects) we will need to do it and that is the first tip is to focus first in the things in the program rather than the procedures.
- Now we will enter to the develop the class and the system now and in the book there is 3 steps mentioned we did in write for each class :
  1- Prep code → pseudo code to help you focus on the logic without stressing about the syntax
  2- Test code → a class or the methods that will test the real code and validate that it is doing the right thing
  3- Real code → the actual implementation of the class and that's one you use the programming language on it
- Lets start with the prep code step in this one you inly write the what not how about each step like we will declare int array to hold something but we will not mention how we will declare it if we will declare it in the heap or in the stack?
- Now we are in the test code step and here is very important thing is the test code is written first before writing the actual code and that is very important thing cause when you think about the different test cases that may happen in your system when you write the code you handle it from the start and easily and that's is more better than writing the code without handling the different test cases and then we find wrong answer or something wrong happened cause we not handle it from the start and making this will lead you to write your code more easily and faster and that will help you in thinking about what the method itself needs to do and in this step you write the test case and including the normal cases too not only the edge cases that may be happened and for each test case you write the result must be achieved in this one to can compare it when you run
- Now in the third step the real code one here we will notice that the prep code give us much better idea of what the code needs to do but now in the real code you have to write the code that do the how we can make this what
- One of benefits of the OO is to ask some another objects/classes to do something for you without know any details about how it will be done so in writing the prep code you need to assume that you will be able to do whatever you need to do

- Math. Random in java returns double number from 0 to 1 if you want to increase the range you must multiply the function result into the end range you want
- The enhanced for loop is another name for the for each one or for in
- As we know we can not put large data type number inside smaller data type like if I have variable of type long and I want to put its value inside int variable the complier in this case will not compile but if you want to enforce the compiler to put the value even if there is loss may happened in the data you must use the cast operator and that's mean you will assign normally the value of the long into int variable but with putting the casting (int) like that int x = (int) y; // x = 42 cool!

This is the summary of the important things mentioned in this chapter:

- Your java program should start with a high level design
- When creating a class do not forget the 3 steps
- Prep code should describe what to do not how to do it cause implementation comes later
- A class in java can have one superclass only
- Writing test code before writing the implementation is very important
- Choose the for loop over while loop when you know how many times you want to repeat this code