# FINAL REVIEW

## Lessons for Final Examination

Lesson – 8 - Lists [ ArrayList, LinkedList, Comparator ]

Lesson – 9 – Stack and Queue

Lesson – 11 – Hash Table

Lesson – 12 – Exception Handling

**Review Lesson – 4 Recursion to write base case and recursive case. You have to make use of Recursive Algorithms in any of user implementation.**

Program Resources are: Demo Code & Homework Solution.

## Important points for the FPP Exam

1. The Final examination held on 12/19/2018 – Wednesday Morning.
2. The Final will be timed. It will begin at 9.30 am and will end at 12:00 noon.
3. Bring Pencil/Pen, Eraser and necessary things. You are responsible to keep your writing desk neat and clean. [Use waste paper to keep the pencil sharpened dust].
4. Mobile should be in Silent or Switch off mode. You are not allowed to keep the mobile. So bring backpack to keep your belongings. Keep the backpack in front of the dais.
5. Necessary hints, Syntax and API will be given in the question paper itself.
6. Final Exam will have only Programming Part – Closed Book.

## Final Review Practice

**Portion : Lesson 8 - 12**

1. Practice user defined Implementation & behavior of
    a. LinkedList [ Doubly Linked List ]
    b. ArrayList
    c. Stack
    d. Queue
2. Practice the Collection Framework & Map API for the following
    a. ArrayList API ( Efficiently work with Employees list, Student list etc]
    b. Stack API , Queue API.
    c. HashTable and HashMap [ which implements Map Interface - API]

3. Practice Comparator Interfaces to sort your collection. You are able to implement the Comparator for any given classes based on required field. You have to practice consist with equals too.

   For the above 1- 3 Categories, no need to write the complete code. You have to implement the required methods.
4. Need to know how and why we need to override equals() and hashCode().
5. You might know how to work with Enum type. For example you have an ArrayList<Employee> list = new ArrayList<>(); In that Employee has a instance field EmployeeType as Enum constant with
   FULLTIME, PARTTIME, GUEST.

   Task: Print the Employees belong to FULLTIME type. You are able to know how to access Enum values inside your logic.
6. As a good programmer need to know the kind of exception in the given code and efficiently handle those exceptions. So practice programs to handle the following exceptions. You will be given a code without exception handling. You have to rewrite the complete code either using API Exception or User defined exceptions. Practice how to handle exception using try catch as well as how to use throw and throws.
   - NullPointerException
   - ArrayIndexOutOfBoundsException
   - NumberFormatException
     - if you have an input of a string and then parsing it into an int then you will need to catch a NumberFormatException)
   - Arithmetic Exception
   - IOException
   - IllegalArgumentException
   - InputMismatchException
     - if you are scanning other types then you will need to catch using InputMissmatchException
   - User Defined Exceptions

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