These are the practice programs additional to the assignments on moodle for external exam.

1	Given the classes ExceptionA, ExceptionB, and ExceptionC. ExceptionA is the super class of ExceptionB. ExceptionC is the subclass of ExceptionB. Write the code to demonstrate that the catch specifying superclass ExceptionA, also catches subclass ExceptionB's
2	Write a program to create a new file. Take file name from user. Count words in the file
3	Write Java program to check if a number is Armstrong number or not? (logic: An Armstrong number of 3 digit is a number for which sum of cube of its digits are equal to number e.g. 371 is an Armstrong number because 3*3*3 + 7*7*7 + 1*1*1 = 371).
4	Write a Java program to find factorial of a number input by user. handle exception if user enters 0 or alphabet.
5	Write a program to copy one file to another. Take command line arguments for file names
6	Write a program having a class Person with members as name, age, gender. Create a class Employee extending from Person with members emp_id, dept, salary. Take information of at least 6-7 employees and display information of the employees of some dept(ask choice of dept from user)
7	Create a list. Write a menu driven program to add, delete and display item from a list.
8	Create a package named MyPackage. Create a class Shape having members no_of_sides and methods to display the number of sides a shape. Create a class Rectangle, Triangle both extending from Shape. Add methods to calculate area of those shapes.Add all classes in MyPackage. Write a menu-driven program to calculate area of a shape.
9	Write a java program to read data from a file. If file contains numbers throw "NumericData" exception (User defined Exception).
10	Write a stack application. Implement push an pop operation on stack. (Menu Driven program). Handle proper exceptions.
11	Write a Queue application. Implement enqueue and dequeue operation on queue. (Menu Driven program). Handle proper exception
12	Write a program to create a file and read input from keyboard and write that input to the file.
13	Write a program to maintain **University marking** Database. **Student** is **Abstract class**, it has Roll no., Name, subject_1_mark attributes. Show_student_data() is abstract method.

	Get_student_data() is non-abstract method. **ISport** is an **Interface**, having attribute sport_grace_marks=5. Show_sport_mark() is a method. **IExService_Man** is an **Interface**, having attribute ExService_Man_grace_marks=10. Show_ExService_Man_mark() is a method. **Result** is **Class**, it is inherited from Student, ISport, IExService_Man. Total_marks=subject_1_mark + sport_grace_marks + ExService_Man_grace_marks. Show_result() is method of Result class

14	Create a package **Academic** containing:
	
	Student_Info class is in Academic package having following attributes
	String name, String Roll_no, int age, String dept, void display()
	ExamData is package in Academic package.
	Student_ExamData class is in ExamData package which is inherited from
	Student_Info class having members as int MSE, int ISE, int ESE, String Grade.
	Methods are cal_Grade(), void show_Result() // shows all marks out of 100 and a
	grade.
	void show_student_info() // shows student info and his result.

15	Write a program to create a thread that displays "Hello friends" after every 2 seconds. Main thread displays "Welcome" after every 1 second
16	Write a program to Ask a user for a ID number. The correct input for an id number is 10 in length and first character must be alphabet and rest of the 9 charactes must be numbers. Throw InvalidID exception on incorrect input
17	Write a program that creates a file by the name specified by user. Ask user to input names of 10 different cities. Write that information to the newly created file.
18	Write a program to read file containing names of students. Count the frequency of all distinct names. Display the result and write the result in Result.txt file.
19	Write a program to copy contents of a linked list to an array.
20	Write a program to copy all elements of list to a linked list
21	Write a program to count tokens from the given string with defined delimiter.
22	Write a program to display tokens from a given string with multiple delimiters and output should contain delimiters as well.

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24	Create your own Exception MyException and throw it when entered String is palindrome. Override toString method to display information about My Exception

25	Create a Stats application that reads names and scores from a data file named test.txt. The file contains a student name and students test score at each line separated by space. The Stats application should read and display each name and score. After all the scores have been displayed, the lowest score, highest score, and average score should be displayed and also stored in another txt file. If students score is not a number then handle proper exception.
26	Create a file writing application that reads file name and number of student from user. User enter student name and score for storing into file. If User enters score below zero then handle your own exception. If student's score is not a number then handle proper exception. All data must be write into file.
27	Create a WordCount application that displays the number of words in a text file named source.txt. And also write that result in result.txt.
28	Create a Vehicle class that is an abstract class defining the general details and actions associated with a vehicle. Create Car, Truck, and Minivan classes that inherit the Vehicle class. The Car, Truck, and Minivan classes should include additional member specific to the type of vehicle being represented.
29	Create a class employee which extends from a class person. The attribute of person class are name, address, age. The attributes of the employee class are ID, Department, Grade and Basic. Also write the appropriate constructors for these classes. Write a menu based program which shows the following options. i) Create. ii) Search. iii) Add. iv) Display. v) Exit
30	Write a program to take 10 numbers as an input from user. Convert array into List. Iterate through List and Find maximum and Minimum number from list. (Use Collection Framework)
31	Write a program to Ask a user for a ID number. The correct input for an id number is 10 in length and they must all be numbers. Throw InvalidID exception on incorrect input.
32	Write a polymorphic java program to find the area of rectangle, circle, square and triangle. Use following function definition: double area(double a, double b)　　　　//rectangle,square double area(double r)　　　　//circle double area(double a, double b, double c)　　//triangle
33	Ask user for a number abiding these rules: must be even, multiple of 5. Throw exception if not, saying correct. Else say wrong.
34	Create an abstract class called **Book**. Include a String field for the book's title and a double field for the book's price. Within the class, include a constructor that requires the book title and two get methods: one that returns the title and one that returns the price. Also include an abstract method named setPrice(). Create two child classes of Book: **Fiction** and **NonFiction**. Within the constructors for the Fiction and NonFiction classes, call setPrice so all Fiction Books cost $24.99 and all Non Fiction Books cost $37.99. A main class **Challenge** creates an array (size: 2) of Book variables to store references to objects of each concrete class.

For each book, display the string representation as shown below.

Title of Fiction Book: ABC
Title of Non fiction Book: LMN
Title: ABC   Cost: $24.99
Title: LMN   Cost: $37.99

35	Implement a stack and take three inputs from user which are pushed on to the stack. Print the empty stack initially. Then push the three elements on the stack. After every push display the stack. In the end, pop out the topmost element only once and display the stack. (Use Collection framework)
36	Write a program to takes two matrix (3*3) array as inputs and calculate the multiplication of both matrices.
37	Write a program having a class Person with members as name, age, gender. Create a class Employee extending from Person with members emp_id, dept, salary. Take information of at least 6-7 employees and display information of the employees of some dept(ask choice of dept from user)
38	Create a list. Write a menu driven program to add, delete and display item from a list.
39	Create a package named MyPackage. Create a class Shape having members no_of_sides and methods to display the number of sides a shape. Create a class Rectangle, Triangle both extending from Shape. Add methods to calculate area of those shapes. Add all classes in MyPackage. Write a menu-driven program to calculate area of a shape.
40	Write an applet that contains one textfield, one textarea and one button. Ask user to enter a file name in textfield. On clicking of 'Open' button, display contents of file in the textarea. If file does not exists, show error message.
41	Write a client server application. Client will ask user to give file name and server will read that file and send file contents back to the client or error massage.
42	Create an applet program for drawing Box-Whisker Plot. Take 20 numbers as an input. (Calculate min, max, 25th percenrtile(Q1), 50th percentile(Q2), 75th percentile(Q3). Find IQR = Q3-Q1. Box must be of length IQR)
43	Write a applet that will move a ball using arrow keys(up,down, left, right)
44	Write a client server application. Client will read a string and send o server will send back the result of whether that string is palindrome or not.
45	Write an applet that contains one textfield, one textarea and one button. Ask user to enter a file name in textfield. Enter text to be written in file in textarea. On clicking of 'Write To File' button, contents in textarea must get written to the file specified. Show appropriate error messages.
46	Write an applet program contains 2 radio buttons namely "Rectangle" and "Triangle" which draws selected shape by reading coordinates pointed by mouse pointer.
47	Write a java program that has 3 threads. One thread prints perfect squares from 1-1000. Second prints numbers and their factorial (0-50) and third thread prints prime numbers 1-500.
48	Create a client server application for chatting using TCP.
49	Write an client server program where server receives an array from client and sorts it. Display sorted array at client side.

50	Write an program that contains window with menubar. One menu "Shapes" having menu items Square, Rectangle, Circle, Triangle, Hexagon. Another menu "Colors" contains list of 5-6 colors as menuitems. On clicking on shape, draw that shape on window. And on selecting any color, fill that shape with that selected color.
51	Write a java program that has 3 threads. One thread prints perfect squares from 1-1000. Second prints numbers and their factorial (0-50) and third thread prints prime numbers 1-500.
52	Write a client server application where server will receive a filename and will respond the file properties of that file to the client.
53	Draw a coordinate system. And draw lines between points clicked by user. Display the coordinates of points also.
54	Write a program to open a File Dialog and read the file selected by user. Display the contents in Textarea.
55	Write an applet program which contains one dropdown list which will list filenames. Provide two buttons namely "Show File Info" and "Show File Contents". First button will show all information of file like File name, file size, path, last modified date etc. Second button will show the file contents.
56	Create an applet which takes % of placement for last 5 years through textbox. Create a button named as "Draw Graph" which will produce a bar chart for the input information.
57	Write a simple client server program using UDP to send and receive messages.
58	Create a bouncing ball application. Where initially one ball bounces and when it touches the edge, ball gets replicated. Program will terminate when total balls' count will exceed 30.
59	Write a java program that solves Producer-Consumer problem.
60	Write an program that contains window with menubar. One menu "Components" having menu items TextField, Button, Label, Checkbox, RadioButton, DropDownList. On clicking on component, that components must get drawn on window. Prepare a Registration form using components from menubar.
61	Write a code for bouncing ball applet. When ball touches edge of window, its color must get changed.
62	Write a program with 2 threads. First thread will display prime numbers. Second thread will display whether that prime number is even or odd.
63	Create a client server application for chatting using UDP.
64	Write an applet code that will have a textfield, choice box, list box and "Add" button. When user clicks on ADD button text in textfield will get added in choice list. When User selects an item from list that must get added to List. Provide "Remove" button to remove selected item from list.
65	Write a Java program to create table named "StudInfo" in a database having fields StudName, rollno, CPI, city. Perform following operations on table a.Insert records into table b.Udate specific recordcc. c.Display all records d.Displayspecific records e.Delete records f.Delete table (Menu driven program)

66	Write an applet program which will show images on cllicking buttons. Provide four buttons First, Previous, Next and Last Button to show first image, previous image, next image, last image respectively
67	write a program to demonstrate a FileDialog box. Display the complete path of file on a label.
68	Write an applet to create a calculator which performs basic arithmetic operations