Basic Java

Day 1
Day 2
Day 3
Day 4
Day 5
Day 6
Day 7
Day 8
Day 9
Day 10
Day 11
Day 12
Day 13

Day 1

1. Understand the need for PATH, CLASSPATH. Try setting it and viewing it.

export PATH=
export CLASSPATH=

Create a simple shell script with echo "Hello" and execute it from the same directory. Now move to some other directory and try executing it using PATH.

Write a small java program (say a "Hello World" program) and put it in a directory . C ompile the program and change directory to some other directory
and try to execute the class file .

2. Write a program to print the size of different data types in J ava (list all the data types!).

3. Write a program to reverse a string using StringBuffer class (do not use String class for data manipulation!)
   a. Input from command line.
   b. Read the input from program.

4. Understand the difference between String and StringBuffer classes by writing small programs.

5. Understand the need for packages. Write a class with a package statement in it and try to run it.

Day 2

1. List down the differences between String and StringBuffer class.

2. Learning about access specifiers (Write java programs to understand the difference between , public ,private,package and protected specifiers!)

What is the meaning of declaring a class public? (try this by putting the class in a package and try to access the class from a different package!).

3. Learning about scope specifiers also what is the difference between instance variable and class variable?

Write programs and try using local scope/method scope/member scope variables and how to access them.

4. Write a java program to print the system properties (Hint : Refer to System class)

Try to print the current working directory from you java program.

5. Write two classes (say "A" and "B") , in class "A" create an instance of class "B" .

Compile class "A" in some directory "D1" and class "B" in "D2" ,now A.class and B.class are in two separate directories.

Try to run class "A" from directory "D1" (it will say class "B" not found). I f you set classpath to both directories then it will work (try it
out!)

Try to set the class path from the class "A" itself (instead of specifying the classpath in the shell, try to set in your java prog!)

Day 3

1. Is the method main belong to any class? , if not why? , if so what are the access privileges to that method?//

2. Is it possible to have a private class? (write a class and try it out! , try protected also!)

3. Is it possible to have a private constructor? (write a class and try it out!) , if possible how do you create an instance of it from another class?

4. What is the meaning of declaring a variable "static" ? (write a program to bring out the difference between instance and class variables).

5. What is the meaning of declaring a method "static" ? how do you invoke such a method ?//

6. In java, are the parameters passed by reference or by value (Write a program to test for basic data types , arrays ,strings ,string arrays and custom objects !)

Day 4

1. Convert a float value to an integer (float to double etc.) (Hint use wrapper classes ,do not typecast them!).

2. Function overriding & overloading (Write a set of classes to bring out the difference!)

3. Write a class and override "toString" method in the class object.(When you write a class "A" does it have any parent? , investigate!)

4. What is an abstract class , why it is used ? (Write an abstract and<> try to use it!).

5. Write an interface and try to bring out diff. between abstract class and an interface! (can i define variables in interfaces?)

6. What is the difference between a Hashtable and Properties? (Write a program as an example!)//

7. Write a program to print all elements in a Properties object (Using Enumeration!)

8. Can i remove an element while enumerating through a Properties object? (If so how? , if not how will i remove a element while enumerating!). What happens when i remove an element while enumerating!

Day 5

1. Write a program which will run another java program (you will have to invoke the "java xyz" from this program!) get the output of the

program and print it to a file.

2. Write a program which will run your string reverse java program (you will have to invoke the "java Reverse" from this program!) give the

input to the Reverse program from this program and get the output and print the output to a file.

Hint: Refer Runtime class

Day 6

1. List various classes available for reading / writing

a) byte data

b) character data (Strings)

c) files

d) objects

Understand which i/o streams to use in which scenario.

2. Whats happening when you use System.out and System.err ?

3. Write a program to read contents of a file and write to another file?

4. How do randomly access a file ? Hint : One should be able to position the read index anywhere one chooses.

5. Understand IOException and its sub categories?

Day 7

1. How do you create a Thread from java (Write a program!).

2. How do you name a thread? and why it is useful?

3. Synchronization need , type, usage.

Day 8

1. Find out how computers communicate.

2. What happens when you enter a web site in your browser and fetch it.

3. Basic IP concepts (What is an ip address, what is the use of naming a PC , what is MAC address , subnetting , routing etc.)

4. Create a client/server chat program. ie. Client should read from console and send it to server, server should read from client connection and print it. then wait for console input and read it and send it to client.

Try this first with 1-1 ie 1 server - 1 client
Second with 1:many ie 1 server - many clients.

Day 9

1. Read about HTTP Protocol

2. Write a Server that supports HTTP . Start the server and connect that server from browser. You can send Server's date & time as response along with received header name / value.

3. Write a Client that supports HTTP. Your client should be able to fetch data any HTTP Server.

Day 10

1. Write NIO Server that supports HTTP and test this from browser. (ie. To achieve the same task as mentioned for Task 9.2)

2. Write NIO client that supports HTTP and use this connect to remote server.

Day 11

1. Install AWServer in your machine in Adapter mode. Refer https://intranet.wiki.zoho.com/zohowms/AWS-Framework.html

2. Add a new engine and include a servlet.

3. Use NIO Client to connect to that server. Refer https://intranet.wiki.zoho.com/zohowms/HTTP-NIO-Client.html

Day 12

1. Read about WebSocket protocol

2. Write a WebSocket servlet in your AWS.

3 Use NIO Client to make a WebSocket connection to AWS. Refer https://intranet.wiki.zoho.com/zohowms/WebSocket-NIO-Client.html

Day 13

1. Install ATServer in your machine. Refer https://intranet.wiki.zoho.com/zohowms/ATServer.html

2. Read about SSL and enable SSL port in ATServer.

2. Connect to ATServer with NIO Client. Refer https://intranet.wiki.zoho.com/zohowms/TCP-NIO-Client.html