Scala Scenarios

Team,
After trying/completing the below interesting usecases, you will be definitely getting a very good hands-on for improving your programming skills, after this exercise you can call yourself a programmer throughout your career journey, even it helps you learn python and linux scripting and plays a vital role in understanding Spark. – Just do it for you…

Note:
Try in REPL and add all the below code into Eclipse
If you are not able to achieve the result as I expected, try to get it as per the way you prefer.
If you are failing for 1st time, try several times to make it succeeded,
Complete the other scenarios and come back if you feel struck in some use cases.

Values and Variables
1. Create 2 val types with x as 100 & y as 10 respectively and find the Multiplication and division of both and store in some val as z and z1.
2. Create a as 2000 and find the division of a by y created in step 1 and reassign a with the divided result (200).
3. Create a val type with x:Int=100, then assign the x to val y, but the datatype of y has to be String. (think about using some function like toString)
4. Try only in REPL for now - Create a val type sc1 and assign sc into it and also try assigning sc1 defined as AnyRef/Any and check the type of the sc1 using getClass function.

Static definition and Dynamic inference
5. Create some var and val and prove static definition by re-assigning var with different data type and dynamic inference by displaying the data type respectively.

Conditional Structures

6. Write a program to find the greatest of 3 numbers
7. Write a nested if then else to print the course fees of if the student choose bigdata then check if bigdata then fees is 25000,
if spark then fees is 15000, if the student chooses datascience then check if machinelearning then 35000, if deep learning then 45000.
8. Check whether the given string is palindrome or not (try to use some function like reverse). For eg: val x="madam" then print as "palindrome" else "non palindrome".
9. Check whether the val x=100 is an integer or string. (try to use some functions like toString, toUpperCase etc to execute this use case)

Control Statements

10. Write a program using while or for loop to print even numbers and odd numbers between any range of data as per your intention and also find the even and
odd values between 5 and 20 (even should be 6,8,10,12,14,16,18,20 and odd should be 5,7,9,11,13,15,17,19).

11. For loop to increment from 0 till 21 with the increment of 3, the result should be exactly 0,3,6,9,12,15,18

12. Write a for or while loop to print the cube of 4, result should be 4*4*4=64 (think of using some var type initiated outside the loop)

13. Write for/while loop for printing only the values in the range of 1 to 20 which are divisible by 4 (don't use by 4 in the for loop) rather use if condition to check the % of 4 for every element in the loop achieve this.

Result should be exactly like this 4,8,12,16,20.

Methods

14. Write methods to make the above usecases (conditional and control statements from 7 to 13) and upcoming usecases more generic by passing as parameters rather than hardcoding..

15. Write a method to create a calculator accepts 3 arguments and return type of any, first 2 of integer and 3rd one is String, based on the 3rd argument value as add/sub/div/mul perform either addition or subraction or multiplication or division of values and return the result to the calling environment. (for division think of using.toFloat or .toDouble conversion).

16. Try multiple return statements in a method and identify which one is really returning and what are the returns are ignored.

17. Try creating a method with multiple return types.

Pattern matching

18. Write a program using case using pattern matching to find the datatype of a given value and return either Float or string or Boolean or Char etc..

19. Create a method should accept 2 aruments and a return value metexception(numerator:Int,denominator:Int):Int={} , in the main block return the value of numerator/denominator

for eg. If you call metexception(10,2) the return should be 5 but if you call as metexception(10,0) usually it throws exception, in case of exception we have to handle in the catch block where it should call the same metexception with the argument passed as (10,1) so the result will be 10.

Collections: Seq, Array, List, Map and Set

20. Create an array, list and prove mutability and immutability and non-resizable properties.

21. Create arraybuffer from scala.collection.mutable package and prove mutability and immutability and resizable properties.

22. Create a tuple of 4 fields and access the 2nd and 4th fields and store in another tuple.

23. Find the maximum value out of (2,3,1,5,4) elements in the array.

24. Find the max and min value of (2,3,1,5,4) elements in the array and store these 2 values in another array.

25. Create a method to find the highest value in the given array if the array is non empty and print it, you must pass array as an argument to the method.

26. Write a program to create an Int List with 5 different values using range and sum all the values

27. Write a program to create string list to store the values of Spark,Scala,Python,Java,Hadoop and count the number of elements in the List

28. Write a program to store (China,Beijing),(India,New Delhi),(USA,Washington),(UK,London) using Map

29. Find the capital of India

30. Take only countries and store in an array and use foreach and println to print line by line of elements.

31. Take only countries and store in an set and use foreach and println to print line by line of elements.

32. Create a case class and apply the respective column name and datatype for the tuple created in step 22.

OOPS

33. Create a package namely com.inceptez.datasecurity
34. Inside the above package, Create a class called mask and one more class called endecode
35. Inside the class mask create a private val as addhash=100 and a method
hashMask(str:String):Int={return the hashcode of str+addhash value}
36. Inside the class mask create a private val as prefixstr="aix" and a method
revEncode(str:String):String={return the prefixstr+reverse of str value}
37. Create a scala object namely singleobject, create a main method, create objects like
val objmask=new com.inceptez.datasecurity.mask;
val objencode=new com.inceptez.datasecurity.endecode;
38. Create an array with 3 names like Array("arun","ram kumar","yoga murthy"), loop the array
elements, apply hashMask(name) for all 3 elements and println of the masked values.
39. Loop the array created in above step and apply the revEncode(name) for all 3 elements and
println of the encoded values.
40. If possible create a decode function inside endecodeclass as revDecode and write a logic to
decode the encoded string in step 39.

Print the number of words in a given sentence:

Hello how are you doing

Extract only the words starts with h/H and store in an array.

(info@inceptez.com,sales@microsoft.com,service@google.in)