**Name**

**Advanced Programming in Java**

**Lab Exercise 9/25/2023**

Reference: Lesson 17 in Blue Pelican Java

Use the following code for problems 1 – 15. In each problem state what’s printed.

String s = “Lucky hockey puck”;

String m = “uck”;

int j = 6, z = 99;

1. int k = s.indexOf(m);

System.out.println(k);

2. int k = s.indexOf(“uck”, j);

System.out.println(k);

3. int k = s.indexOf(‘c’);

System.out.println(k);

4. String str = s.replace(‘o’, ‘p’);

System.out.println(str);

5. int k = s.lastIndexOf(m, j + 3);

System.out.println(k);

6. char p = s.charAt(7);

System.out.println(p);

7. int k = s.indexOf(z);

System.out.println(k);

8. int k = s.lastIndexOf(m);

System.out.println(k);

9. int k = s.indexOf(‘y’, j);

System.out.println(k);

10. char p = s.charAt(z - 90);

System.out.println(p);

11. int k = s.indexOf(m,15);

System.out.println(k);

12. int k = s.indexOf(z + 2, 4);

System.out.println(k);

13. int k = s.lastIndexOf(‘h’);

System.out.println(k);

14. int k = s.lastIndexOf(121);

System.out.println(k);

15. String str = s.replace(‘y’, ‘A’);

System.out.println(str);

The following code applies to problems 16 – 22. In each problem, state what’s printed.

String xyz = “bathtub”;

String ddd = “BathTUB”;

String ccc = xyz;

String wc = “Whooping crane”;

String s = “ \t\tGu daay, mates \n”;

16. int j = xyz.compareTo(wc);

boolean bb;

if (j > 0)

{

bb = true;

}

else

{

bb = false;

}

System.out.println(bb);

17. String v = ddd.toLowerCase( );

int fg = ccc.compareTo(v);

System.out.println(fg + 1);

18. System.out.println(ddd.compareTo(ccc));

19. System.out.println(xyz.compareTo(ccc));

20. System.out.println(“Stupid”.compareTo(ddd));

21. System.out.println(“>>>” + s.trim( ) + “<<<”);

**Project… Encryption/Decryption**

You have just been hired by the CIA as a programmer in the encryption department. Your job is

to write a class called Crypto. One method, *encrypt*, will accept a *String* that represents the

sentence to be encrypted. It will return a *String* that is the sentence with all v’s (big or small)

replaced with “ag’,r”, all m’s (big or small) with “ssad”, all g’s (big or small) with “jeb..w”, and

all b’s (big or small) with “dug>?/”.

The class contains another method, *decrypt*, that accepts a *String* that represents the sentence to

be decrypted. In this method the reverse process described above is performed. It returns a *String*

that is the original sentence before encryption.

Use the following *Tester* class to insure that your methods work.

import java.util.\*;

public class Tester

{

public static void main(String args[])

{

Scanner reader = new Scanner(System.in);

System.out.print(“Enter a sentence that is to be encrypted: ”);

String sentence = reader.nextLine( );

System.out.println(“Original sentence = ” + sentence);

Crypto myCryptObj = new Crypto( );

String encryptSentence = myCryptObj.encrypt(sentence);

System.out.println(“Encrypted sentence = ” + encrytSentence);

String decryptSentence = myCryptObj.decrypt(encrytSentence);

System.out.println(“Decrypted sentence = ” + decryptSentence);

}

}

Test with this sentence: “This is a very big morning.”

After running your program, your screen should appear as follows:

Enter a sentence that is to be encrypted: This is a very big morning.

Original sentence = This is a very big morning.

Encrypted sentence = This is a ag',rery dug>?/ijeb..w ssadorninjeb..w.

Decrypted sentence = This is a very big morning.

**Submit this sheet with answers and the source code for the above project.**