





# Unit 1 – ICS4U0 – Java Applets & Strings

Sample Test – February 12, 2025

Name: \_\_\_\_\_

Total	Knowledge 	Communication 	Thinking 	Application 
(100)	(24)	(21)	(21)	(34)

## Knowledge

1. This is the original String:  
String r = "Roronoa Zoro";

0	1	2	3	4	5	6	7	8	9	10	11

/10

Match the code with the output.

8	a. System.out.println (r.length ());
12	b. System.out.println (r.charAt (0));
97	c. System.out.println ((int) r.charAt (6));
true	d. System.out.println (r.charAt (r.length () - 1));
false	e. System.out.println (r.charAt (4) + "" + r.charAt (0));
a Zo	f. System.out.println (r.toUpperCase ());
nR	g. System.out.println (r.toLowerCase ());
o	h. System.out.println (r.replace ('o', 'y'));
on	i. System.out.println (r.indexOf ('Z'));
R	j. System.out.println (r.substring (r.length () / 2, 10));
Ro	k. System.out.println (r.substring (0, 2));
RORONOA ZORO	l. System.out.println (r.substring (3, 5) + r.substring (7, 8));
Ryrynya Zyry	m. System.out.println (r.compareTo ("Blackbeard") > 0);
roronoa zoro	n. System.out.println (r.equals ("Nami"));

2. Use this code to fill in the memory diagram. Then, write out what each substring prints.

String x = "Straw Hat Pirates";

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16



/5

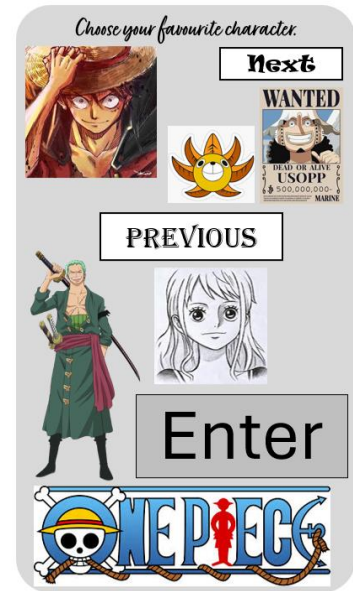
(a)	System.out.println (x.substring (0, 5));	
(b)	System.out.println (x.substring (10, x.length ()));	
(c)	System.out.println (x.substring (x.indexOf ('a'), x.length () / 2));	



7. Name each PARC principle and explain how each is broken by this app.

/8

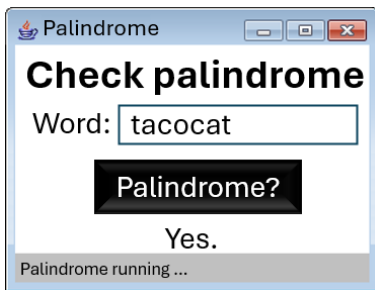
P	
A	
R	
C	



## Thinking

8. White Box and Black Box test this app.

/9



Word	Black Box Test Case
Word	White Box Test Case & Line Number

A palindrome is a word that reads the same backward as forward.

For example "racecar" or "nurses run".

```

1 public void actionPerformed (ActionEvent e) {
2     String s = input.getText();
3     String rev = "";

4     for (int i = s.length () - 1 ; i >= 0 ; i--)
5         rev += s.charAt (i);

6     if (rev.equals (s))
7         output.setText ("Yes");
8     else
9         output.setText ("No");
10 }
    
```



9. Decrypt the following messages. This chart may be useful:

/12

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z

kpmmz sphfs

draebkcalb

iratepay hipsay

15 14 5 16 9 5 3 5

Hint: lagiwm vfa1 = pirate ship, Hint #2: All punctuation ', . is at it appears.

wfm fillamvw lagiwm ligwamv rmig wfmag vfa1'v lamg.

wfmo prmigwfmv wfmag fmigw'v bmvagm, i villfagm.

## Application

10. This is the original String: String p = "King of the Pirates";

/10

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

Write the code to produce the following output:

(a)	KING OF THE PIRATES	System.out.println( ) ;
(b)	king of the pirates	System.out.println( ) ;
(c)	g	System.out.println( ) ;
(d)	Kyng of the Pyrates	System.out.println( ) ;
(e)	rates	System.out.println( ) ;
(g)	19 //the length	System.out.println( ) ;
(h)	110 //ASCII of n	System.out.println( ) ;
(i)	6 //position of f	System.out.println( ) ;
(j)	thing	System.out.println( ) ;
(k)	KING	System.out.println( ) ;

11. Make a loop to print all of the positions of the e's and the E's on the screen. Note that indexOf will not be able to do this, as it only returns the first value.

/8

Example 1: Input? <b>Monkey D. Luffy</b> <b>4</b>	Example 2 Input? <b>Sanji</b> <b>none</b>	Example 3 Input? <b>EeAbEp</b> <b>0 1 4</b>	Example 4 Input? <b>Nothing entered</b>
---	---	---	---

```
String s = IO.inputString("_____");

//Handle nothing entered

if(s._____(""))

    System.out.println("_____");

//Otherwise, they entered something, count the e's and E's
else {

    //variable to hold index values of E or e
    String ans = "";

    //loop through String
    for(_____)
    {
        //Check current place for E or e
        if (_____) {

            //Add current place to index variable
            ans+= " " + _____;

        }

        //Results of loop -----

        //if no index values, ans is empty. Print none
        if(ans._____(""))

            System.out.println("_____");

        //otherwise, display all index values stored in ans
        else

            System.out.println(_____);

    }
}
```



12. (a) Fill in init for the Encryption App (shown in on the right)

```
import java.awt.*; import javax.swing.*; import java.applet.Applet; import java.awt.event.*;
public class Encrypt extends Applet implements ActionListener
{
    JTextField word;
//The other global variable:
    _____;
    public void init ()
    { resize (300, 100);
//The first label: (Font is Arial, Font.BOLD and 30 pt)
    JLabel title = new _____ ("_____");
    title.setFont (new Font ("_____", Font._____, ____));
//The prompt
    JLabel pmt = new _____ ("_____");
//The textfield:
    word = new _____ (_____);
//The button: (Black background, white writing)
    JButton b = new _____ ("_____");
    b.setBackground(_____);
    b.setForeground(_____);
    b.addActionListener(_____);
    b.setActionCommand("_____");
//The last label:
    _____;
//add the widgets:
    add(_____);
    add(_____);
    add(_____);
    add(_____);
    add(_____);
} //init
```

(b) Fill in the Encryption App's actionPerformed using the comments.



/16

```
public void _____ (ActionEvent e)
{
    if(e.getActionCommand().equals(_____))
    {
        String s = _____ .getText();
        //switch it to lowercase

        s = _____
        //replace all 'a' with '@'

        s = _____
        //replace all 'e' with '$"

        s = _____
        //chop the string in half

        String first = s.substring(____, _____);

        String last = s.substring(_____, _____);

        //switch the order of the two halves

        s = _____ + _____;

        //output the s variable on the screen in the JLabel

        _____ .setText(____);
    } //if
} //actionPerformed
} //Applet
```