

TUTORIAL: MODULE 7 (STRING & STRING PROCESSING)

Section A

1. String is a primitive data type. True or False?
2. Briefly describe the immutability of a string, and give one example:

False. String is not primitive data type.

Once a String object has been created, neither its value nor its length can be changed

Section B: Hands Tracing

Consider the following declaration:

```
Scanner sc = new Scanner(System.in);
```

1. Using a string literal, write a program to reverse every character in the string.

```
String str = sc.nextLine();
String result = "";

for (int k = str.length() - 1 ; k >= 0; k-- )
{
    result = result + str.charAt(k);
}

System.out.println(result);
```

2. What is the output of the following code segments if the input is “University Kebangsaan Malaysia”?

```
String str = sc.nextLine();
System.out.print(str.charAt(str.length()-1));
```

a

3. What is the output of the following code segments if the input is “University Kebangsaan Malaysia”?

```
String str = sc.next();
System.out.print(str.length()-1);
```

9

4. What is the output of the following code segments if the input is “Star Wars”?

```
String str = sc.nextLine();  
int k = str.indexOf(' ');  
String newstr = str.substring(0, k);  
System.out.print(newstr);
```

Star

5. What is the output of the following code segments if the input is “Star Wars”?

```
String str = sc.nextLine();  
char ch = str.charAt(1);  
System.out.print(ch);
```

t

6. What is the output of the following code segments if the input is “kebangsaan”?

```
strOrig = sc.nextLine();  
String strNew = strOrig.replaceAll("[an]", "");  
System.out.println(strNew);
```

kebgs

7. What is the output of the following code segments if the input is “kebangsaan”?

```
strOrig = sc.nextLine();  
String strNew2 = strOrig.replace("b", "B");  
System.out.println(strNew2);
```

keBangsaan

Section C: Write Code Segments

1. Given the following declaration:

```
Scanner sc = new Scanner(System.in);
String str = sc.nextLine();
String str2 = new String();
```

Write code segments for the following tasks.

- a. Print the length of the inputted string.

```
String str = sc.nextLine();
int length = str.length();
System.out.println("Length is : " + length);
```

- b. Convert all characters in `str` to uppercase.

```
System.out.println( str.toUpperCase());
```

- c. Count the total number of consonants in `str`.

```
Scanner sc = new Scanner(System.in);
String str = sc.nextLine();
String consonantOnly = "";

consonantOnly = str.replaceAll("[aeiou]", ""); //remove vowel in String

System.out.println( consonantOnly.length()); //kira bilangan consonant
```

- d. Count the total number of digits in `str`.

```
Scanner sc = new Scanner(System.in);
String str = sc.nextLine();

System.out.println( str.length()); //kira bilangan digit
```

- e. Count the number of blank spaces in `str`.

```
String str = sc.nextLine();
int countSpace = 0;

for (int i = 0 ; i < str.length() ; i++)
{
    char ch = str.charAt(i);

    if(ch==' ')
    { countSpace++; }
}

System.out.println(countSpace); //kira bilangan space
```

- f. Replace all character `'a'` in `str` to `'*'` and store the new string in `str2`.

```
String str = sc.nextLine();
String str2 = str.replaceAll("a", "*");
System.out.println(str2);
```

- g. Remove all vowels in `str` and store the new string in `str2`.

```
String str = sc.nextLine();
String str2 = "";

str2 = str.replaceAll("[aeiou]", ""); //remove vowel in String

System.out.println( str2);
```

2. Write code segments that reads 12-digit Mykad number and display the person's gender. If the last digit is even number, then the person's gender is female and otherwise is male. For example, if the input is 971225561234 then the output is 'Female'.

```
Scanner sc = new Scanner(System.in);
long n = sc.nextLong();

String gender;

if (n%2 == 0)
    gender = "female";
else
    gender = "male";

System.out.println(gender);
```