

Practical- Unit 1 [Assignment]

** runjava is a alias that I use to compile and run the program under a single command in terminal

** the code for the same is uploaded to the github <https://github.com/avinashkkumar/java>

// 4A. Write a java program to display alternate character from a given string.

```
import java.util.Scanner;
```

```
public class alternativeChar {
```

```
    public static void main(String args[]){
```

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

```
        String st = sc.nextLine();
```

```
        for( int i = 0 ; i < st.length() ; i ++ ){
```

```
            if(i%2 == 0){
```

```
                System.out.print(st.charAt(i));
```

```
            }
```

```
            else{
```

```
                System.out.print(" ");
```

```
            }
```

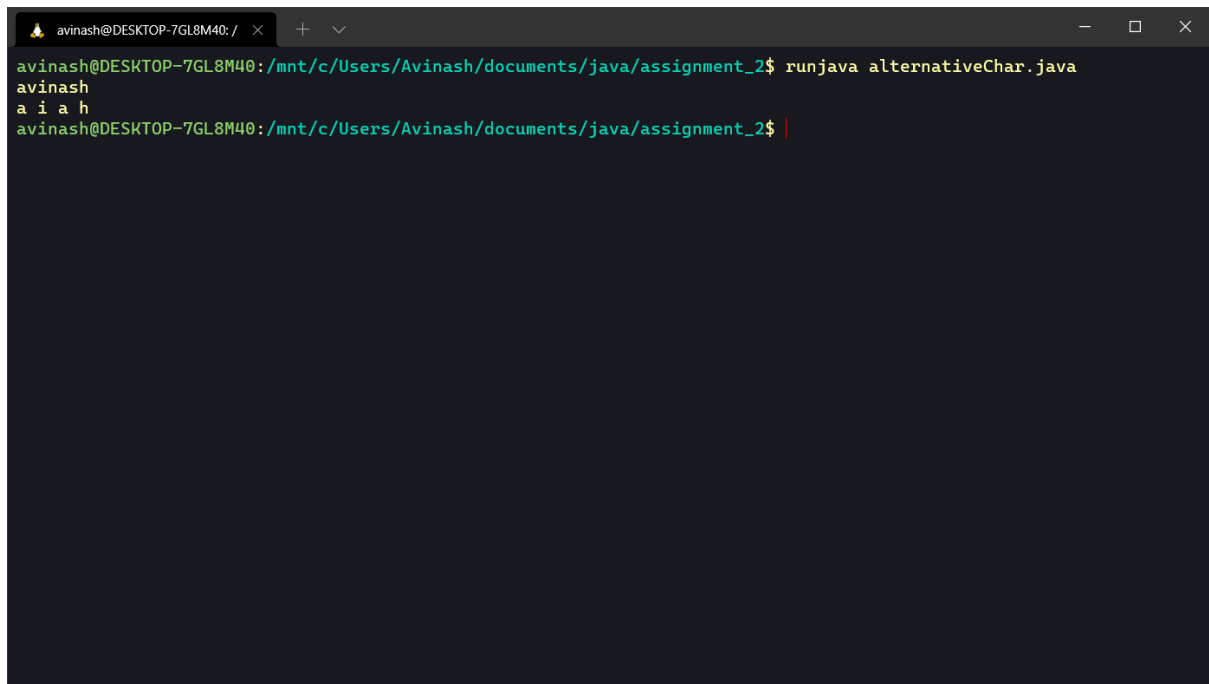
```
        }
```

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

```
        sc.close();
```

```
    }
```

```
}
```

A terminal window with a dark background. The title bar shows 'avinash@DESKTOP-7GL8M40: /'. The prompt is 'avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2\$'. The command 'runjava alternativeChar.java' has been executed. The output shows 'avinash' on the first line, 'a i a h' on the second line, and the prompt 'avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2\$' on the third line.

```
avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2$ runjava alternativeChar.java
avinash
a i a h
avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2$
```

```
import java.util.Scanner;
```

```
public class armStrong {

    public static void main(String[] args) {

        int num, temp, totalDigit = 0, res = 0, rem, pow, i;

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter the Number: ");

        num = sc.nextInt();

        temp = num;

        while (num > 0) {

            num = num / 10;

            totalDigit++;

        }

        num = temp;

        while (num > 0) {

            rem = num % 10;

            pow = 1;
```

```
i = 0;

while (i < totalDigit) {

    pow = pow * rem;

    i++;

}

res = res + pow;

num = num / 10;

}

if (res == temp)

    System.out.println("Armstrong Number");

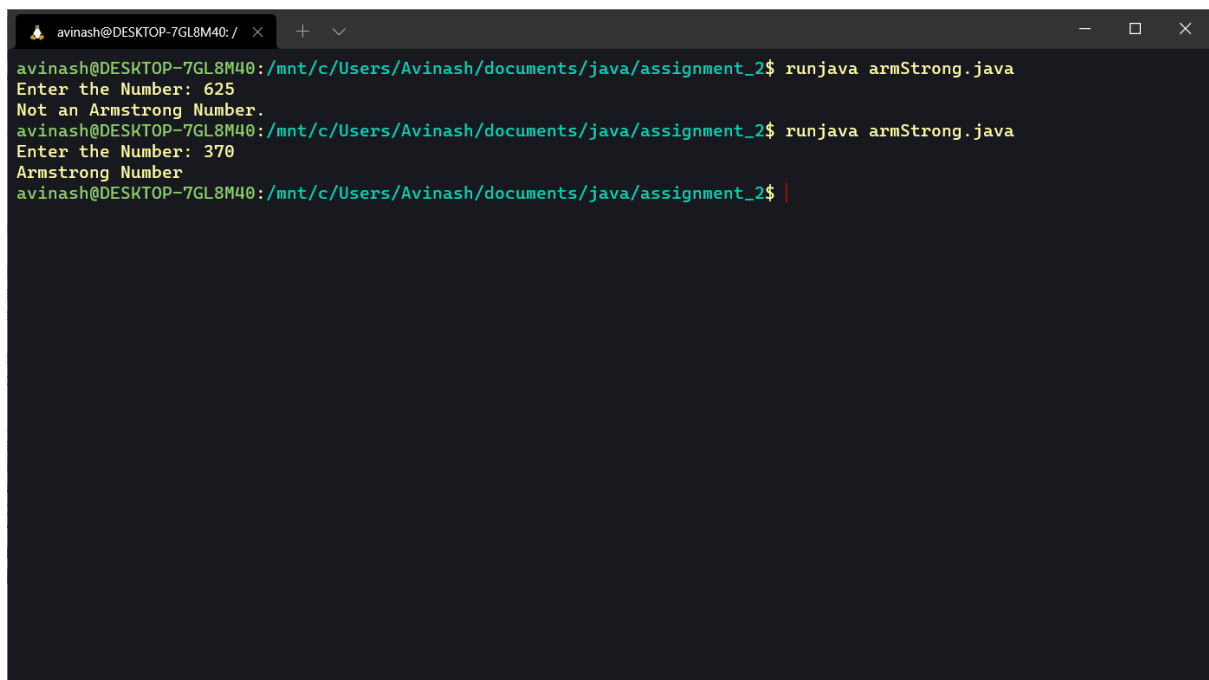
else

    System.out.println("Not an Armstrong Number.");

sc.close();

}

}
```



The image shows a terminal window with a dark background. The title bar at the top reads 'avinash@DESKTOP-7GL8M40: /'. The terminal content shows the execution of a Java program named 'armStrong.java'. The first run takes the input '625' and outputs 'Not an Armstrong Number.'. The second run takes the input '370' and outputs 'Armstrong Number'. The prompt 'avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2\$' is visible at the end of each line of input.

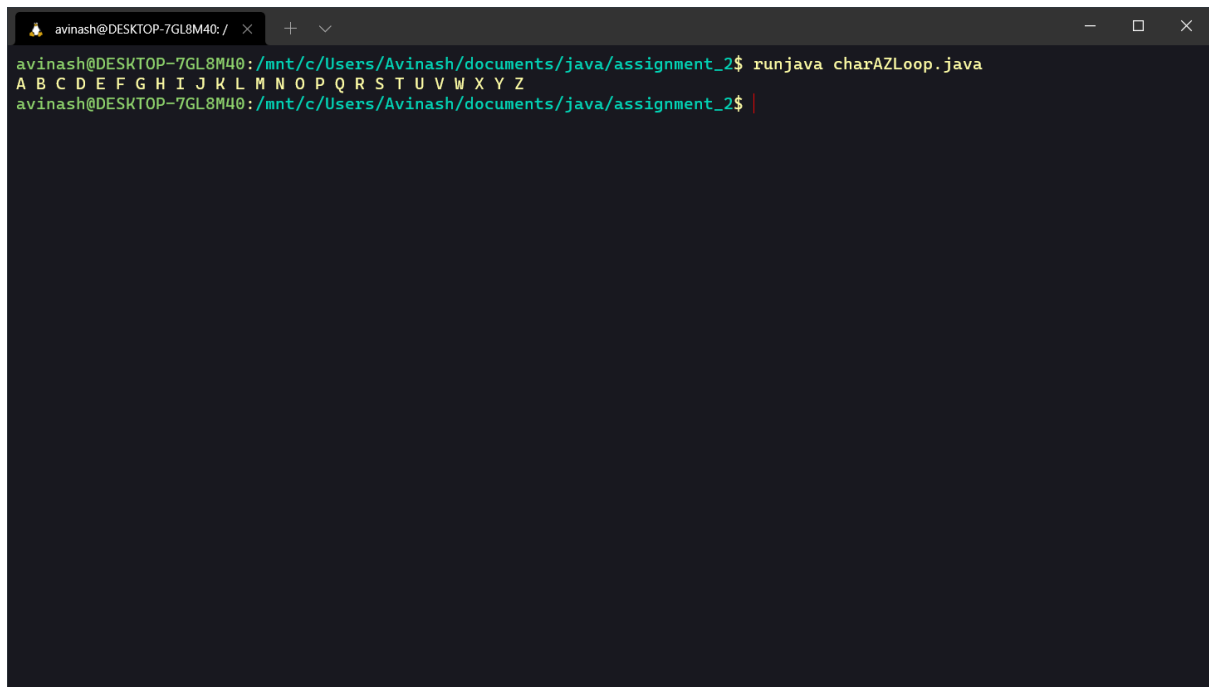
```
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava armStrong.java
Enter the Number: 625
Not an Armstrong Number.
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava armStrong.java
Enter the Number: 370
Armstrong Number
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ |
```

```
public class arrayArmstrong {  
    public static void main(String arg[]) {  
        int n, no, i = 0, sum = 0, r;  
        int arm[] = new int[10];  
        for (int j = 0; j < arg.length; j++) {  
            n = Integer.parseInt(arg[j]);  
            no = n;  
            sum = 0;  
            while (n > 0) {  
                r = n % 10;  
                n = n / 10;  
                sum = sum + (r * r * r);  
            }  
            if (sum == no) {  
                arm[i] = no;  
                i++;  
            }  
        }  
        for (int j = 0; j < i; j++) {  
            System.out.println("\n" + arm[j]);  
        }  
    }  
}
```

```
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava arrayArmstrong.java 8 153 10 1 370
153
1
370
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$
```

// 1A. Write a 'java' program to display characters from 'A' to 'Z'. [15 M]

```
public class charAZLoop {
    public static void main(String args[]){
        for(char c = 'A' ; c <= 'Z' ; ++c){
            System.out.print(c + " ");
        }
        System.out.println();
    }
}
```



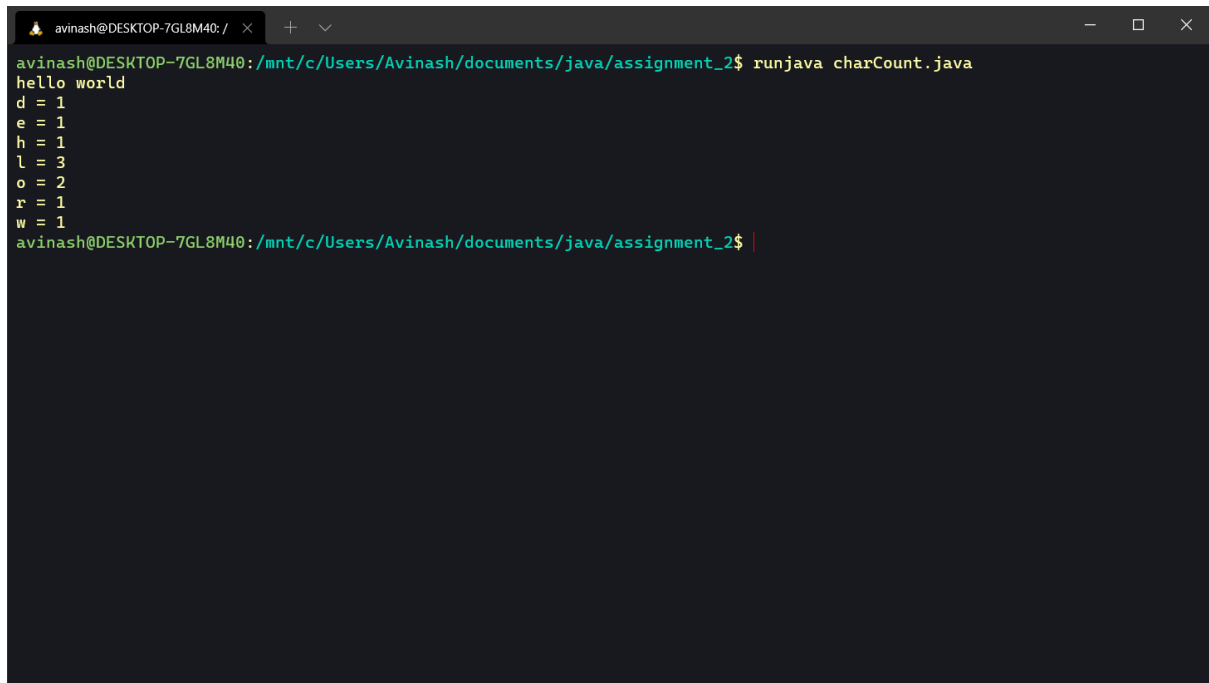
```
avinash@DESKTOP-7GL8M40: /  
avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2$ runjava charAZLoop.java  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2$
```

// Write a java program to count the frequency of each character in a given string.

```
import java.util.Scanner;
```

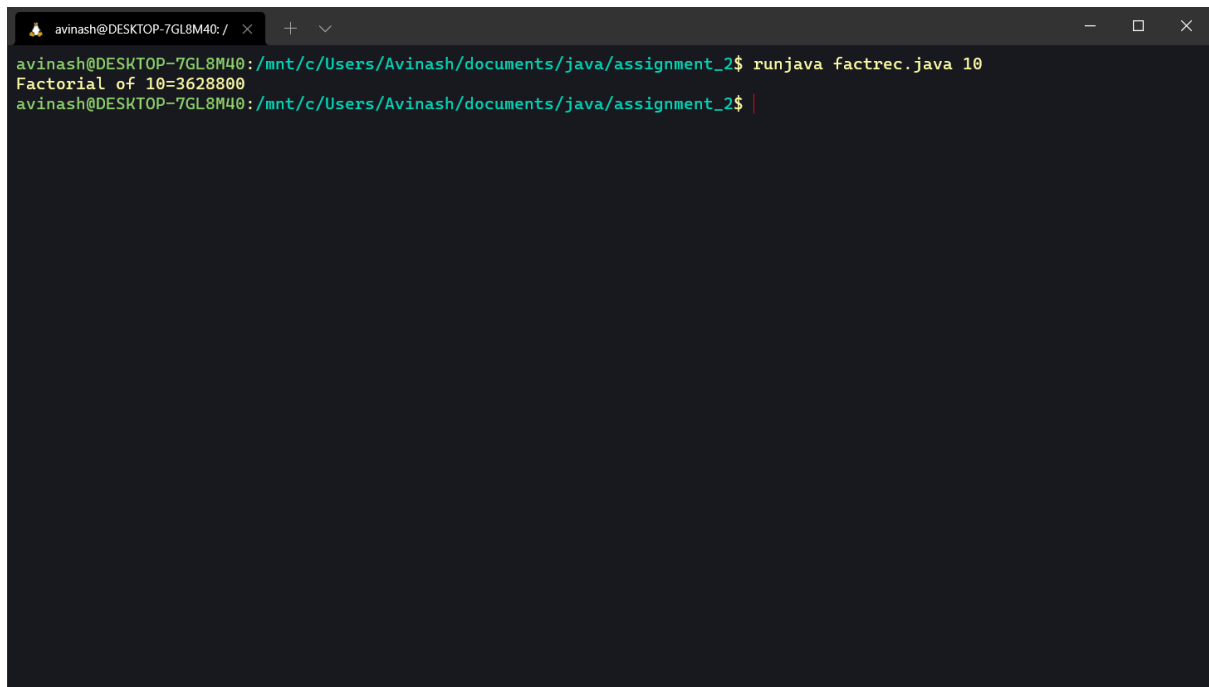
```
public class charCount {  
    public static void main(String args[]){  
        Scanner sc = new Scanner(System.in);  
        String st = sc.nextLine();  
        for(char ch = 'a' ; ch <= 'z' ; ch ++){  
            int count = 0;  
            for( int i = 0 ; i < st.length() ; i++){  
                if(ch == st.charAt(i)){  
                    count = count + 1;  
                }  
            }  
            if( count > 0){  
                System.out.println(ch + " = " + count);  
            }  
        }  
    }  
}
```

```
}  
  
sc.close();  
  
}  
  
}
```

A terminal window with a dark background. The title bar shows 'avinash@DESKTOP-7GL8M40: /'. The command prompt is 'avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2\$'. The command 'runjava charCount.java' has been executed. The output shows the string 'hello world' followed by character counts: 'd = 1', 'e = 1', 'h = 1', 'l = 3', 'o = 2', 'r = 1', 'w = 1'. The prompt is now 'avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2\$' with a red cursor.

```
avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2$ runjava charCount.java  
hello world  
d = 1  
e = 1  
h = 1  
l = 3  
o = 2  
r = 1  
w = 1  
avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2$
```

```
public class factrec {  
  
    public static void main(String arg[]) {  
  
        int num = Integer.parseInt(arg[0]);  
  
        long fact = funfact(num);  
  
        System.out.println("Factorial of " + num + "=" + fact);  
  
    }  
  
    public static long funfact(int num) {  
  
        if (num >= 1)  
            return num * funfact(num - 1);  
  
        else  
            return 1;  
  
    }  
  
}
```

A terminal window with a dark background. The title bar shows 'avinash@DESKTOP-7GL8M40: /'. The prompt is 'avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2\$'. The command 'runjava factrec.java 10' has been entered. The output is 'Factorial of 10=3628800'. The prompt is now 'avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2\$' with a red cursor.

```
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava factrec.java 10
Factorial of 10=3628800
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$
```

```
public class fibgen {
    public static void main(String args[]){
        int num = Integer.parseInt(args[0]);
        gen(num);
    }
    public static void gen(int num){
        int i = 0 , j = 1;
        System.out.print(" " + i);
        for( int t = 0 ; t < num ; t++){
            int sum = i + j;
            i = j;
            j = sum;
            System.out.print(" " + i);
        }
        System.out.println();
    }
}
```



```
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava fibgen.java 7
0 1 1 2 3 5 8 13
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$
```

// 8. write a java program to accept two numbers using command line arguement and claculate addition, subtraction, multiplication and dividion

```
public class mathoper {
    public static void main(String args[]) {
        int a = Integer.parseInt(args[0]);
        int b = Integer.parseInt(args[1]);
        int c = Integer.parseInt(args[2]);
        int sum = a + b;
        int multi = a * b;
        int minus = a - b;
        int div = a / b;
        switch (c) {
            case 1:
                System.out.println("the sum of " + a + " and " + b + " is " + sum);
                break;
            case 2:
                System.out.println("the multiplication of " + a + " and " + b + "is " + multi);
```

```

        break;
    case 3:
        System.out.println(a + " divided by " + b + " is " + div);
        break;
    case 4:
        System.out.println(a + " munus " + b + " is " + minus);
        break;
    default:
        System.out.println("please enter a valid input \"\\_(ツ)_/\"");
        break;
    }
}
}

```

```

avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava mathoper.java 1 2 5
please enter a valid input "\\_(ツ)_/"
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava mathoper.java 1 2 3
1 divided by 2 is 0
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava mathoper.java 1 2 4
1 munus 2 is -1
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava mathoper.java 1 2 2
the multiplication of 1 and 2 is 2
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava mathoper.java 1 2 1
the sum of 1 and 2 is 3
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$

```

```
import java.util.Scanner;
```

```

public class nameSearch {
    public static void main(String[] args) {
        String s[] = args;

```

```

int l = args.length;

int i = 0, flag = 0;

System.out.print("Enter the string to search: ");

Scanner sc = new Scanner(System.in);

String s2 = sc.nextLine();

sc.close();

for (i = 0; i < l; i++){

    System.out.println(" " + args[i]);

}

for (i = 0; i < l; i++) {

    if (s[i].compareTo(s2) == 0) {

        flag = 1;

        break;

    } else

        flag = 0;

}

if (flag == 1){

    System.out.println("\n String found at index:" + i);

}

else{

    System.out.println("\n Matching ````" + s2 + "```` String NOT found");

}

}

}

```

```
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava nameSearch.java avinash nishant omkar
Enter the string to search: avinash
    avinash
    nishant
    omkar

String found at index:0
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$
```

```
import java.util.Scanner;

import java.util.Arrays;

class nameSort {

    public static void main(String args[]){

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter the length of the array of string : ");

        int len = sc.nextInt();

        String st[] = new String[len] ;

        for( int i = 0 ; i < len ; i++){

            System.out.print("Enter the character at " + (i + 1) + " : ");

            st[i] = sc.next();

        }

        sc.close();

        Arrays.sort(st);

        for( int i = 0 ; i < len ; i++ ){

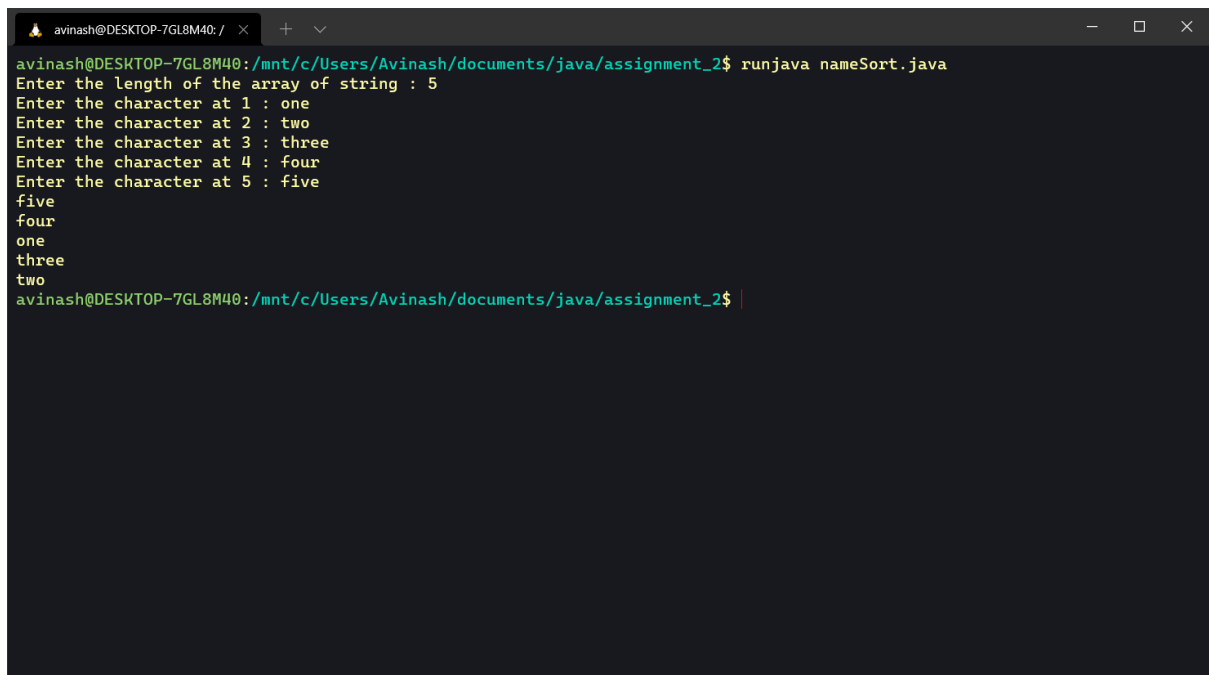
            System.out.println(st[i]);

        }

    }

}
```

}



```
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava nameSort.java
Enter the length of the array of string : 5
Enter the character at 1 : one
Enter the character at 2 : two
Enter the character at 3 : three
Enter the character at 4 : four
Enter the character at 5 : five
five
four
one
three
two
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$
```

```
import java.util.Scanner;

class pattern {

    public static void main(String args[]){

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter the Length of Pattern : ");

        int l = sc.nextInt();

        sc.close();

        for( int j = l ; j >= 1 ; j--){

            for( int i = j ; i <= l ; i++){

                System.out.print(" " + i);

            }

            System.out.println();

        }

    }

}
```

```
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava pattern.java
Enter the Length of Pattern : 10
10
9 10
8 9 10
7 8 9 10
6 7 8 9 10
5 6 7 8 9 10
4 5 6 7 8 9 10
3 4 5 6 7 8 9 10
2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ |
```

// write a java program to check whether given string is palindrome or not

```
import java.util.*;

public class pelendrome {

    public static void main(String arge[]){

        Scanner sc = new Scanner(System.in);

        String str = sc.nextLine();

        int i = 0 ;

        int j = str.length()-1;

        boolean b = true;

        while ( j > i ) {

            if( str.charAt(i) != str.charAt(j)){

                b = false;

            }

            i++;

            j--;

        }

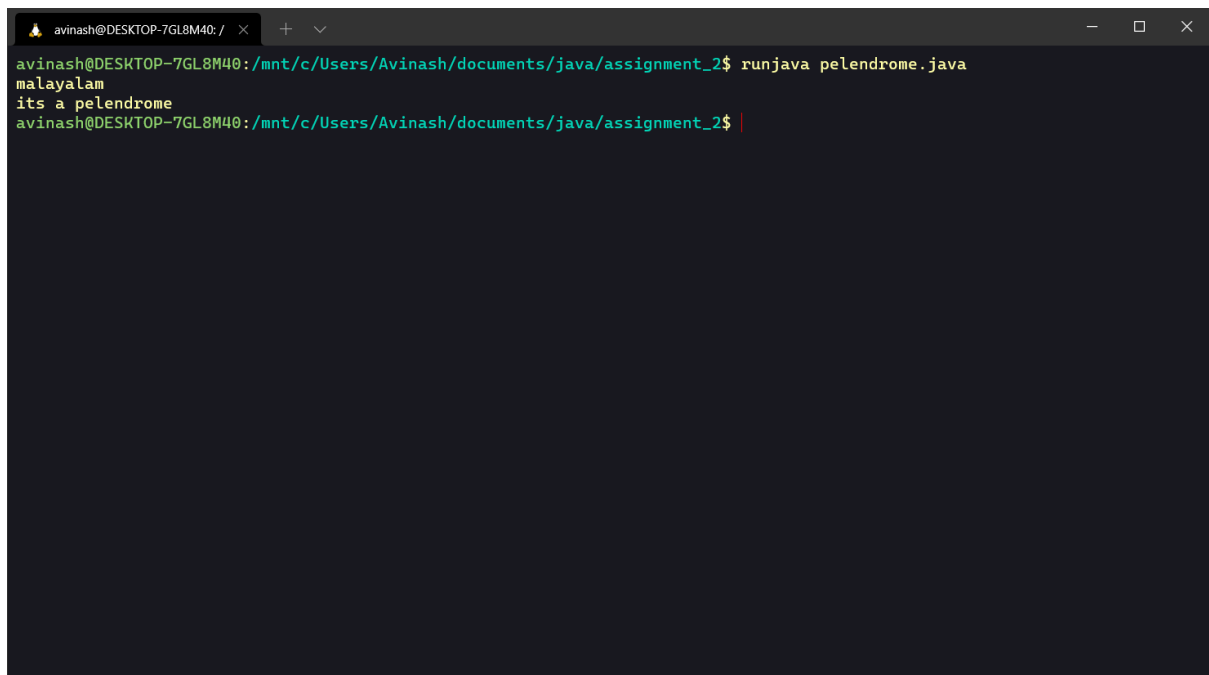
    }

}
```

```

    if(b == true){
        System.out.println("its a pelendrome");
    }
    else{
        System.out.println("its not a pelendrome");
    }
    sc.close();
}
}

```



```

avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava pelendrome.java
malayalam
its a pelendrome
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$

```

// Write a java program to display each String in reverse order from a String array.

```

import java.util.Scanner;

public class reverString {
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);

        String st = sc.nextLine();

        String rstring = new String();

        for(int i = st.length()-1 ; i >= 0 ; i--){

```

```

        rstring = rstring + st.charAt(i);
    }

    System.out.println(rstring);

    sc.close();
}
}

```

```

avinash@DESKTOP-7GL8M40: /  ×  +  ▾
avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2$ runjava reverString.java
hello world
dlrow olleh
avinash@DESKTOP-7GL8M40:/mnt/c/Users/Avinash/documents/java/assignment_2$ |

```

```

// Write a java program that asks the user name, and then greets the user by name.

// Before outputting the user's name, convert it to upper case letters. For

// example, if the user's name is Raj, then the program should respond

// "Hello, RAJ, nice to meet you!".

```

```

import java.util.Scanner;

public class userGreet {

    public static void main(String args[]){

        Scanner sc = new Scanner(System.in);

        System.out.print("Please Enter your name ");

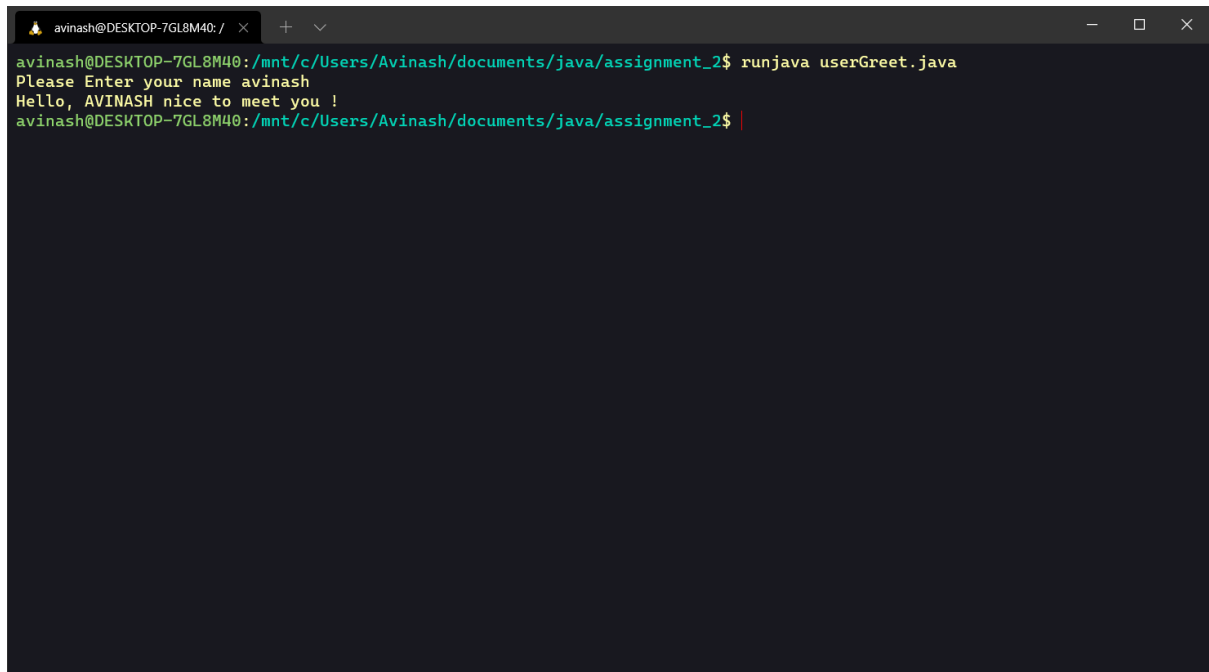
        String st = sc.nextLine();

        st = st.toUpperCase();
    }
}

```



```
        System.out.println("Hello, " + st + " nice to meet you !" );  
        sc.close();  
    }  
}
```

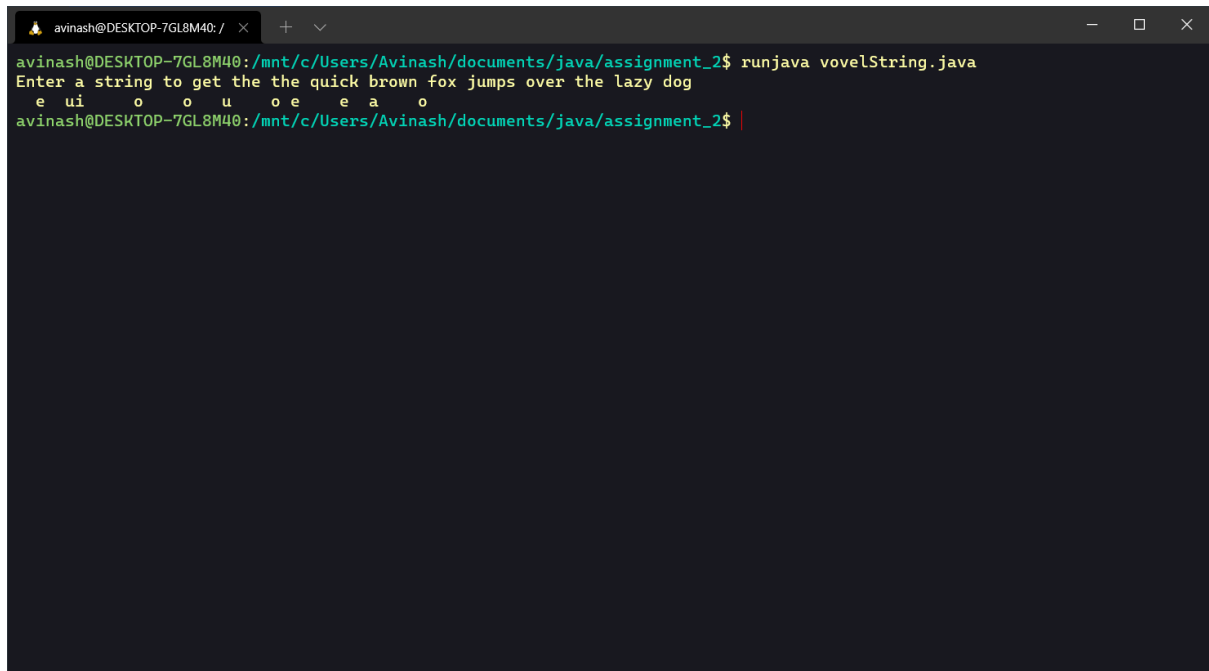
A screenshot of a terminal window with a dark background. The window title bar shows 'avinash@DESKTOP-7GL8M40: /'. The terminal content shows the command 'runjava userGreet.java' being executed. The program prompts 'Please Enter your name avinash', and the user input 'avinash' is shown. The program then outputs 'Hello, AVINASH nice to meet you !'. The prompt 'avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2\$' is visible at the bottom.

```
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava userGreet.java  
Please Enter your name avinash  
Hello, AVINASH nice to meet you !  
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$
```

// 2A. Write a java program to display all the vowels from a given string.

```
import java.util.Scanner;  
  
public class vowelString {  
    public static void main(String args[]){  
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter a string to get the ");  
        String st = sc.nextLine();  
  
        for( int i = 0 ; i < st.length() ; i++ ){  
            if( st.charAt(i) == 'a' || st.charAt(i) == 'e' || st.charAt(i) == 'i' || st.charAt(i) == 'o' ||  
st.charAt(i) == 'u' || st.charAt(i) == 'A' || st.charAt(i) == 'E' || st.charAt(i) == 'I' || st.charAt(i) == 'O'  
|| st.charAt(i) == 'U'){  
                System.out.print(st.charAt(i));  
            }  
        }  
    }  
}
```

```
        }  
    else{  
        System.out.print(" ");  
        continue;  
    }  
}  
System.out.println();  
sc.close();  
}  
}
```

A terminal window with a dark background and light green text. The window title bar shows 'avinash@DESKTOP-7GL8M40: /' and standard window controls. The terminal content shows the command 'runjava vowelString.java' being executed. The output is a string of vowels: 'e ui o o u oe e a o'.

```
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ runjava vowelString.java  
Enter a string to get the the quick brown fox jumps over the lazy dog  
e ui o o u oe e a o  
avinash@DESKTOP-7GL8M40: /mnt/c/Users/Avinash/documents/java/assignment_2$ |
```