Saturday, November 20, 2021 10:49 AM

```
Arrays.asList(12,10,13,23,34,45)
                .stream()
                    .forEach((element)->{System.out.println(element*element);} )
```

```
Class Stream    // Library CLass
{
            public void forEach (  Consumer obj )
            {
                    For(int i=0;i<list.size();i++)
                     obj.accept(list.get(i) )
            }


}
```

Class MyConsumer implements Consumer
{
Public accept(int element)
{
System.out.println(element*element);
}
}
	(element)->{System.out.println(element*element);}

streamobj.forEach(new MyConsumer()) ;	Streamobj.forEach((element)->{System.out.println(element*element);});

Predicate = Condition !!!

if(a<n)

predicate resolves to a boolean ????

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0. Try out the codes done in class

1. Write a class Palette study.collections
   Property - TreeSet of Strings ----colors

   class Palette
   {
   Private TreeSet<String> colors;

   2 constructors
   Getters setters
   toString

   addToPalette (String color) --- this should add the color in lowercase to the TreeSet

   showAllColorsInPallete()
   {
   //traverse the TreeSet using Iterator
   // traverse the TreeSet using stream forEach
   }

   removeFromPalette(String color)

   boolean isColorInPalette(String color)

}

User
Main
Create a Palette
perform different operations on it (switch case quit MAY be used)

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2. Write a class Login
Main
HashMap<String,String> users
populate the uname and password key values (at least have 5 entry)(u may take values from user)

Ask the user to login
ask the user to enter uname
Ask the user to enter password

If uname is correct and pwd is wrong print wrong pwd
If uname is wrong print wrong user
If both are correct print welcome username

Ask user to change password
Set the new password
show all unames and password

---

3. Practice stream methods as discussed in class !!!

File IO in Java ----------

What is IO = input output

Input-Device =====> InputStream==========>JVM (RAM) }}} **Input flow**

Keyboad ========>System.in ==========> String s = sc.next();

JVM =======>OutputStream ==========>Output-Device }}} **output flow**

Int x = 400 =====> System.out ==========>CONSOLE

Abstract class InputStream ---------- reading methods that read from Input device ,
Methods to check if **input has ended**
Obj . Read()
String s =Obj.readLine
Obj.next()
Int x = Obj.nextInt()
Obj.hasNext()

Abstract class OutputStream ---------- writing/printing methods that write/print to output device
Methods to **flush** output from buffer to hard disk file

InputStream
|
FileInputStream === sub class

OutputStream
|
FileOutputStream !!!

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2 types of files

1. Text file
   When each character is treated as ASCII Value(Unicode Value) then the file is text file
   We can open the text file using TEXT EDITOR , notepad, vi ,gedit, atom , VSS code, editplus,.....
   Examples ====== .txt , .c, .java , .html ,.cpp , .xml , .json ,.php ,.py,.js, .sh

2. Binary file
   When characters are treated as per their data types then the file is binary file
   We cannot open the binary files using text editor
   These files are written and read using their own readers and writers .

   Examples ---- .class, .pdf, .jpg,gif,.mp4, .doc ,.pptx ,.xsl , .bmp ,.gif ,
   PDFReader , PDFWriter

Example

Prachi 45.56 true } Textfile ASCII 16 bytes (1 byte per char) , Unicode (32 bytes)

Binary file
Prachi } ASCII 6 bytes
45.56 } float 4bytes
true } boolean 1 byte

123456 } ASCII 6bytes
12345 } ASCII 5 bytes
12 } ASCII 2bytes
1 } 1 byte

144.667 } ASCII 7 bytes
144.66 } Ascii 6 byte

123456 } binary int 4bytes
12345 } 4 bytes
12 } 4 bytes
1 } 4 bytes

144.667 } binary 4 bytes
144.66 } 4 bytes

A === 65 === 01000001 } hard disk storage TEXT
1 === 49 ==== 00110001

A 10 } Text file } HARD DISK 01000001 00110001 00110000 } ASCII ENCODING
A 10} binary file } HARD DISK 01000001 00000000 000000000 0000000000 00001010 } BINARY ENCODING

Write a java code --- to read from file and show on console

Scanner , BuffereReader , FileInputStream , System.out

Write a java code to write to Text file }}} PrintWriter

We read strings , we wrote string !!! ---- Reader / Writer TEXT IO

Can we write object in a file ??? YES === it is called as object PERSISTENCE
This will preserve object even after machine shutdown!!!!

Will be text file or binary file ??? Binary file !!!

Serialization ----------saving object to file with data + metadata
DeSerialization ---------- retrieving an object from file to RAM

Marker Interface /Tagging Interface /Empty Interface = 0 methods interface

java .io. Serializable !!

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1. Write a program to accept names of cities from user till user says quit
   Append the name in a text file cities.txt
2. Write a program to read all names from the cities.txt
   a. Show the count of cities
   b. Show all cities in sorted order !!! Use ArrayList + Collections.sort OR use TreeSet
3. Write a class Book in study.io
   a. Name, author name, cost, date of publication --- MyDate3
4. Write a class SerializeBook
   a. Main
      i. Create 5 Book objects and write them to a file books.bingo
5. Write a class DeserializeBook
   a. Main
      i. Read all books from books.bingo and show name and cost of each book also show publication year

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