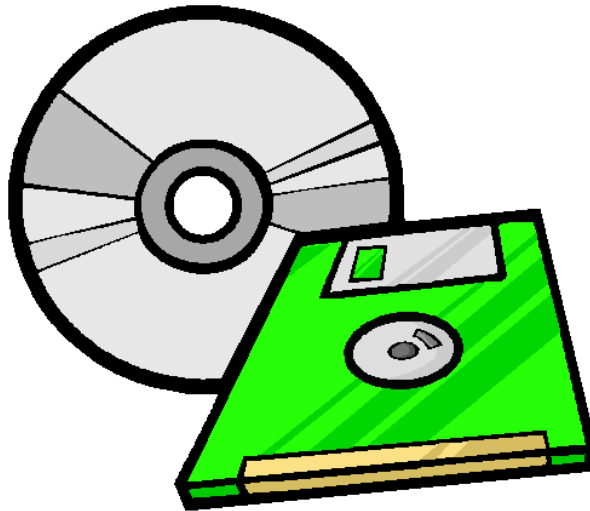# A+ Computer Science

FILES

Scanner

Scanner kb = new Scanner(System.in);

int val = kb.nextInt();

kb connects to the keyboard

Data Files

A data file is a sequential list of data.
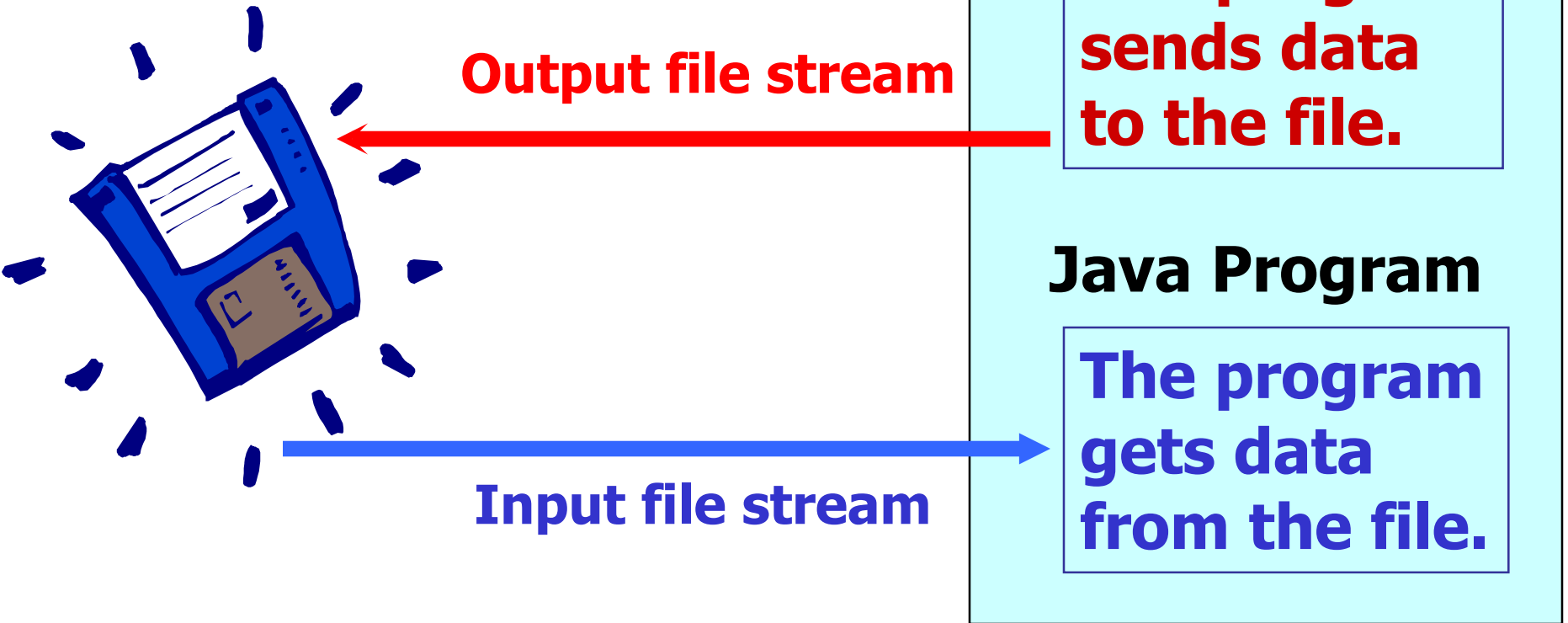
nums.dat
123
567
345
128

The Program

Output file stream

The program sends data to the file.

Java Program

Input file stream

The program gets data from the file.

The program is always in control when working with files.

Scanner

Scanner file =
   new Scanner(new File("nums2.dat"));

int val = file.nextInt();

file connects to nums2.dat

file →

nums2.dat
567
345
25

Scanner

Scanner is a class in Java that can be used to read in data from the keyboard or from a data file.

Scanner can also be used to chop up Strings.

Scanner

Scanner kb = new Scanner(System.in);

Scanner chopper = new Scanner("a b c d e");

Scanner file =
new Scanner(new File("pr21.dat"));

Scanner

Scanner **keyboard** **= new** **Scanner(****System.in****);**

object / reference   **constructor**   **parameter**

Scanner **file**

= new **Scanner(****new File("prxx.dat")****));**

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Scanner Methods

Scanner
frequently used methods

Name	Use
nextInt()	returns the next int value
nextDouble()	returns the next double value
next()	returns the next one word String
nextLine()	returns the next multi word String
hasNextInt()	checks to see if there are more ints
hasNextDouble()	checks to see if there are more doubles
hasNext()	checks to see if there are more Strings

import java.util.Scanner;

Reading From Files

File Input

for.dat

6   ⟵   **# of data sets (6)**

23

11

6634

123

532

123

File Input

```
Scanner file =
   new Scanner(new File("for.dat"));

int cnt = file.nextInt();
for(int i=0; i<cnt; i++)
{
   int num = file.nextInt();
   out.println(num);
}
```

File Input

```
Scanner file =
  new Scanner(new File("for.dat"));

int cnt = file.nextInt();
for(int i=0; i<cnt; i++)
{
  int num = file.nextInt();
  out.println(num);
}
```

for.dat
3
11
5
67

OUTPUT
11
5
67

filefor.java

File Input

while.dat

34
23
11
6634
123
532
123
531

← # of data sets (?)

File Input

```
Scanner file =
   new Scanner(new File("while.dat"));

while(file.hasNextInt())
{
   int num = file.nextInt();
   out.println(num);
}
```

File Input

```
Scanner file =
   new Scanner(new File("while.dat"));

while(file.hasNextInt())
{
  int num = file.nextInt();
  out.println(num);
}
```

while.dat
11
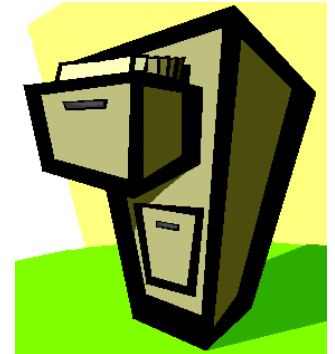5
67

OUTPUT
11
5
67

filewhile.java

File Input

forlines.dat

```
3
I went to the store.
The big dog ran.
How are you doing?
```

# of data sets (3)

File Input

```
Scanner file;
file = new Scanner(new File("forlines.dat"));
int cnt = file.nextInt();
file.nextLine();        //clear out whitespace
for(int i=0; i<cnt; i++)
{
  String sentence = file.nextLine();
  out.println(sentence);
}
```

fileforlines.java

File Input

whilelines.dat

I went to the store.
The big dog ran.
How are you doing?

← **# of data sets (?)**

File Input

```
Scanner file;
file = new Scanner( new File("whilelines.dat"));
while(file.hasNext())
{
    out.println(file.nextLine());
}
```

filewhilechop.java

Use Delimeter

```
Scanner  chopper;
chopper = new Scanner("one-two-three");
chopper.useDelimiter("\\-");

while(chopper.hasNext())
{
  out.println(chopper.next());
}
```

OUTPUT
one
two
three

Use Delimeter

```java
Scanner  chopper
    = new Scanner("1-2-3-4-55-122-0---11");
chopper.useDelimiter("\\-");

int sum = 0;
while(chopper.hasNextInt())
{
  sum += chopper.nextInt();
}
System.out.println( sum );
```

OUTPUT
187

delimiter.java

Writing Files

Writing Files

```java
PrintWriter fileOut =
    new PrintWriter(
        new FileWriter("out.dat"));
```

Writing Files

```
PrintWriter fileOut =
    new PrintWriter(
        new FileWriter("out.dat"));

for(int i=0; i<10; i++)
{
    fileOut.println(i);
}
fileOut.close();
```

fileout.java

Work on Programs!

Crank Some Code!

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FILES

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