*Random Access File – Findings*

*Advantages of RAF –*

* If a file has a vast quantity of data, using random access will allow you to look through it more **quickly**. If it had been a sequential access file, you would have had to go through each record one by one until you got to the desired information. A random-access file allows you to **jump right to the data's target address**.

*Disadvantages of RAF –*

* Because of the random location of data, it is **not suited for storing vast volumes** of data because retrieval would take a **lengthy time**.

*Usage of RAF –*

* The Random-Access File class in Java allows you to **read and write data to a file**. Random-Access File treats a file as a **wide array of bytes** stored in the file system, as well **as a cursor** that may be used **to manipulate** the file pointer.

*Syntax of RAF –*

import java.io.RandomAccessFile;

{

RandomAccessFile raf = new RandomAccessFile("file.txt", "r");

raf.seek(1);

byte[] bytes = new byte[5];

raf.read(bytes);

raf.close();

System.out.println(new String(bytes));

}

*Constructors of RAF –*

* [**RandomAccessFile**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#RandomAccessFile(java.io.File,%20java.lang.String))([**File**](https://docs.oracle.com/javase/7/docs/api/java/io/File.html) file, [**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html) mode)
  + Creates a random access file stream to read from, and optionally to write to, the file specified by the [**File**](https://docs.oracle.com/javase/7/docs/api/java/io/File.html) argument.
* [**RandomAccessFile**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#RandomAccessFile(java.lang.String,%20java.lang.String))([**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html) name, [**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html) mode)
  + Creates a random-access file stream to read from, and optionally to write to, a file with the specified name.

*Methods of RAF –*

|  |  |
| --- | --- |
| void | [**close**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#close())()  Closes this random access file stream and releases any system resources associated with the stream. |
| [**FileChannel**](https://docs.oracle.com/javase/7/docs/api/java/nio/channels/FileChannel.html) | [**getChannel**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#getChannel())()  Returns the unique [**FileChannel**](https://docs.oracle.com/javase/7/docs/api/java/nio/channels/FileChannel.html) object associated with this file. |
| [**FileDescriptor**](https://docs.oracle.com/javase/7/docs/api/java/io/FileDescriptor.html) | [**getFD**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#getFD())()  Returns the opaque file descriptor object associated with this stream. |
| long | [**getFilePointer**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#getFilePointer())()  Returns the current offset in this file. |
| long | [**length**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#length())()  Returns the length of this file. |
| int | [**read**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#read())()  Reads a byte of data from this file. |
| int | [**read**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#read(byte[]))(byte[] b)  Reads up to b.length bytes of data from this file into an array of bytes. |
| int | [**read**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#read(byte[],%20int,%20int))(byte[] b, int off, int len)  Reads up to len bytes of data from this file into an array of bytes. |
| boolean | [**readBoolean**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readBoolean())()  Reads a boolean from this file. |
| byte | [**readByte**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readByte())()  Reads a signed eight-bit value from this file. |
| char | [**readChar**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readChar())()  Reads a character from this file. |
| double | [**readDouble**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readDouble())()  Reads a double from this file. |
| float | [**readFloat**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readFloat())()  Reads a float from this file. |
| void | [**readFully**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readFully(byte[]))(byte[] b)  Reads b.length bytes from this file into the byte array, starting at the current file pointer. |
| void | [**readFully**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readFully(byte[],%20int,%20int))(byte[] b, int off, int len)  Reads exactly len bytes from this file into the byte array, starting at the current file pointer. |
| int | [**readInt**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readInt())()  Reads a signed 32-bit integer from this file. |
| [**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html) | [**readLine**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readLine())()  Reads the next line of text from this file. |
| long | [**readLong**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readLong())()  Reads a signed 64-bit integer from this file. |
| short | [**readShort**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readShort())()  Reads a signed 16-bit number from this file. |
| int | [**readUnsignedByte**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readUnsignedByte())()  Reads an unsigned eight-bit number from this file. |
| int | [**readUnsignedShort**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readUnsignedShort())()  Reads an unsigned 16-bit number from this file. |
| [**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html) | [**readUTF**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#readUTF())()  Reads in a string from this file. |
| void | [**seek**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#seek(long))(long pos)  Sets the file-pointer offset, measured from the beginning of this file, at which the next read or write occurs. |
| void | [**setLength**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#setLength(long))(long newLength)  Sets the length of this file. |
| int | [**skipBytes**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#skipBytes(int))(int n)  Attempts to skip over n bytes of input discarding the skipped bytes. |
| void | [**write**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#write(byte[]))(byte[] b)  Writes b.length bytes from the specified byte array to this file, starting at the current file pointer. |
| void | [**write**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#write(byte[],%20int,%20int))(byte[] b, int off, int len)  Writes len bytes from the specified byte array starting at offset off to this file. |
| void | [**write**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#write(int))(int b)  Writes the specified byte to this file. |
| void | [**writeBoolean**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeBoolean(boolean))(boolean v)  Writes a boolean to the file as a one-byte value. |
| void | [**writeByte**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeByte(int))(int v)  Writes a byte to the file as a one-byte value. |
| void | [**writeBytes**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeBytes(java.lang.String))([**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html) s)  Writes the string to the file as a sequence of bytes. |
| void | [**writeChar**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeChar(int))(int v)  Writes a char to the file as a two-byte value, high byte first. |
| void | [**writeChars**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeChars(java.lang.String))([**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html) s)  Writes a string to the file as a sequence of characters. |
| void | [**writeDouble**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeDouble(double))(double v)  Converts the double argument to a long using the doubleToLongBits method in class Double, and then writes that long value to the file as an eight-byte quantity, high byte first. |
| void | [**writeFloat**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeFloat(float))(float v)  Converts the float argument to an int using the floatToIntBits method in class Float, and then writes that int value to the file as a four-byte quantity, high byte first. |
| void | [**writeInt**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeInt(int))(int v)  Writes an int to the file as four bytes, high byte first. |
| void | [**writeLong**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeLong(long))(long v)  Writes a long to the file as eight bytes, high byte first. |
| void | [**writeShort**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeShort(int))(int v)  Writes a short to the file as two bytes, high byte first. |
| void | [**writeUTF**](https://docs.oracle.com/javase/7/docs/api/java/io/RandomAccessFile.html#writeUTF(java.lang.String))([**String**](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html) str)  Writes a string to the file using [**modified UTF-8**](https://docs.oracle.com/javase/7/docs/api/java/io/DataInput.html#modified-utf-8) encoding in a machine-independent manner. |

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