

Java Programming Model

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- Explore the programming model using a binary search example
 - Binary Search
 - Determine if a value is present within an array of value (and return it)
 - Divide and conquer approach
 - Expects data to be in sorted order
 - Whitelisting:
 - Binary search in the example is being used to process a file only permitting whitelisted strings from being output to the console

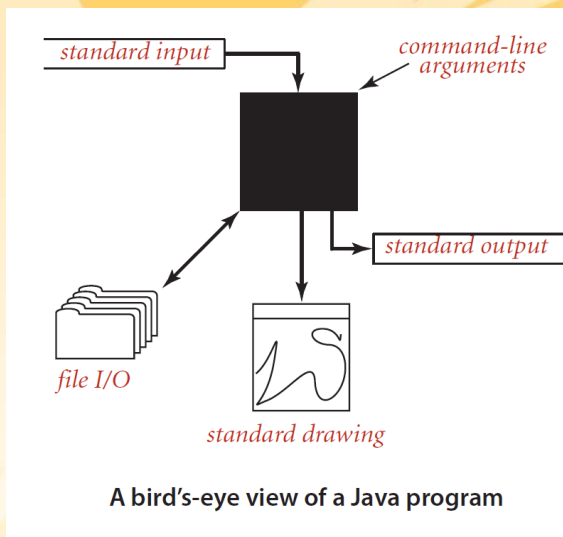
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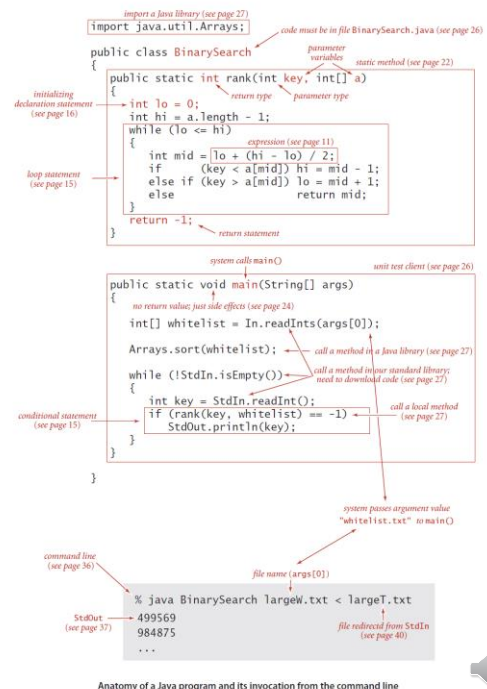
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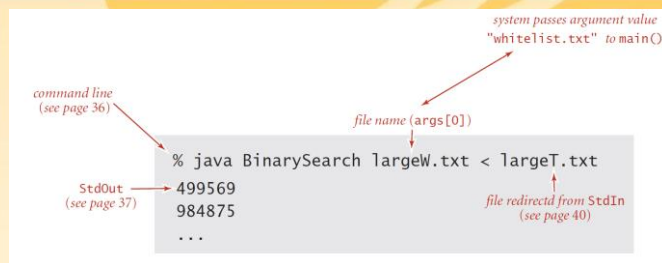
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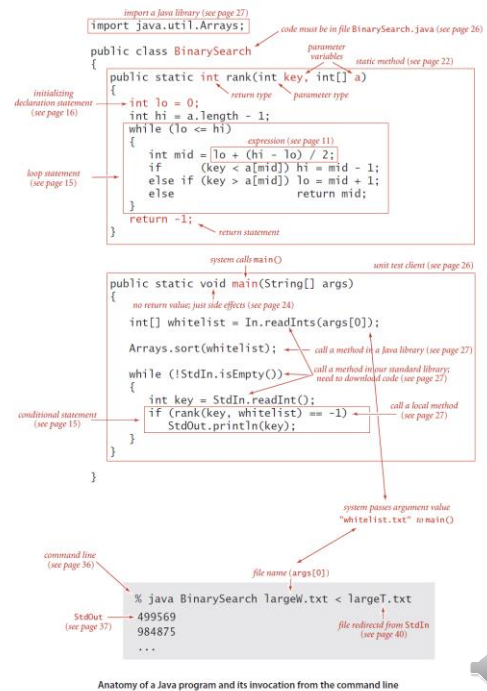
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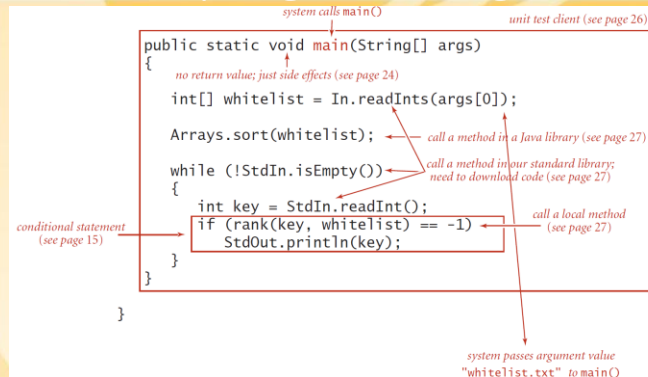


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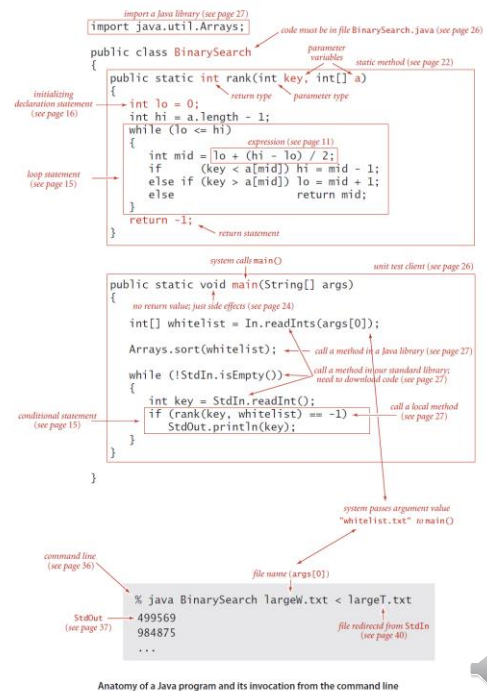


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Java programming model

```

import java.util.Arrays;

public class BinarySearch
{
    public static int rank(int key, int[] a)
    {
        int lo = 0;
        int hi = a.length - 1;
        while (lo <= hi)
        {
            int mid = (lo + (hi - lo) / 2);
            if (key < a[mid]) hi = mid - 1;
            else if (key > a[mid]) lo = mid + 1;
            else return mid;
        }
        return -1;
    }
}

```

import a Java library (see page 27)
code must be in file BinarySearch.java (see page 26)
parameter variables
static method (see page 22)
return type
parameter type
initializing declaration statement (see page 16)
loop statement (see page 15)
expression (see page 11)
return statement

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