How to get the value of Environment variables?

- The System class in Java provides a method named **System.getenv()**

- The **System.getenv()** is used to get the value of an environment variable set in the current system.

- This method returns the string value of the variable, or null if the variable is not defined in the system environment.

- Syntax:

    o **System.getenv(name)**   **// name** is the environment variable name.

Example: 1

```java
public class SysEnv {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        // Get the value of the TEMP environment variable
        System.out.print("System.getenv(\"TEMP\") =");
        System.out.println(System.getenv("TEMP"));

        // Get the value of the OS environment variable
        System.out.print("System.getenv(\"OS\") =");
        System.out.println(System.getenv("OS"));

        // Get the value of the JAVA_HOME environment variable
        System.out.print("System.getenv(\"JAVA_HOME\") = ");
        System.out.println(System.getenv("JAVA_HOME"));

        // gets the value of the specified environment variable "PATH"
        System.out.print("System.getenv(\"PATH\") = ");
        System.out.println(System.getenv("PATH"));

        // gets the value of the specified environment variable "TEMP"
        System.out.print("System.getenv(\"TEMP\") = ");
```

```java
        System.out.println(System.getenv("TEMP"));

        // gets the value of the specified environment variable "USERNAME"
        System.out.print("System.getenv(\"USERNAME\") = ");
        System.out.println(System.getenv("USERNAME"));
    }

}
```

Output:

System.getenv("TEMP") =C:\Users\Sangram\AppData\Local\Temp
System.getenv("OS") =Windows_NT
System.getenv("JAVA_HOME") = null
System.getenv("PATH") = C:/Program
Files/Java/jdk8/bin/../jre/bin/server;C:/Program
Files/Java/jdk8/bin/../jre/bin;C:/Program
Files/Java/jdk8/bin/../jre/lib/amd64;C:\Program
Files\Dell\DWWLANcard;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDO
WS\System32\Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\Pro
gramFiles\HDF_Group\HDFView\2.10.1\bin;C:\ProgramFiles\MATLAB\R2014a\
runtime\win64;C:\ProgramFiles\MATLAB\R2014a\bin;C:\ProgramFiles\MATLA
B\R2014a\polyspace\bin;C:\ProgramFiles(x86)\MATLAB\R2014a\runtime\win32;
C:\Program Files (x86)\MATLAB\R2014a\bin;C:\Program Files
(x86)\MATLAB\R2014a\polyspace\bin;C:\ProgramFiles\MiKTeX2.9\miktex\bin\x
64\;C:\ProgramFiles(x86)\Skype\Phone\;C:\WINDOWS\System32\OpenSSH\;C:\
ProgramFiles\Java\jdk8\bin;C:\ProgramFiles\Java\jre8\bin;C:\Users\Sangram\App
Data\Local\Microsoft\WindowsApps;;C:\eclipse;
System.getenv("TEMP") = C:\Users\Sangram\AppData\Local\Temp
System.getenv("USERNAME") = Sangram

Example 2: Java program to get the value of all environment variables at once using System.getenv() method

```java
import java.util.Map;

public class SysEnvAll {

    public static void main(String[] args) {

        // Get the value of  all environment variables at once
        // and store it in Map
        Map<String, String> env = System.getenv();

        for (String envName : env.keySet()) {

            System.out.format("%s=%s%n", envName, env.get(envName));
        }
    }
}
```

Output:

```
USERDOMAIN_ROAMINGPROFILE=Sangram-PC
LOCALAPPDATA=C:\Users\Sangram\AppData\Local
PROCESSOR_LEVEL=6
FP_NO_HOST_CHECK=NO
USERDOMAIN=Sangram-PC
FPS_BROWSER_APP_PROFILE_STRING=Internet Explorer
LOGONSERVER=\\SANGRAM-PC
SESSIONNAME=Console
ALLUSERSPROFILE=C:\ProgramData
PROCESSOR_ARCHITECTURE=AMD64
PSModulePath=C:\WINDOWS\system32\WindowsPowerShell\v1.0\Modules\
SystemDrive=C:
OneDrive=C:\Users\Sangram\OneDrive
APPDATA=C:\Users\Sangram\AppData\Roaming
USERNAME=Sangram
windows_tracing_logfile=C:\BVTBin\Tests\installpackage\csilogfile.log
ProgramFiles(x86)=C:\Program Files (x86)
CommonProgramFiles=C:\Program Files\Common Files
```

Path=C:/Program Files/Java/jdk8/bin/../jre/bin/server;C:/Program Files/Java/jdk8/bin/../jre/bin;C:/Program Files/Java/jdk8/bin/../jre/lib/amd64;C:\Program Files\Dell\DW WLAN Card;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wbem;C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\Program Files\HDF_Group\HDFView\2.10.1\bin;C:\Program Files\MATLAB\R2014a\runtime\win64;C:\Program Files\MATLAB\R2014a\bin;C:\Program Files\MATLAB\R2014a\polyspace\bin;C:\Program Files (x86)\MATLAB\R2014a\runtime\win32;C:\Program Files (x86)\MATLAB\R2014a\bin;C:\Program Files (x86)\MATLAB\R2014a\polyspace\bin;C:\Program Files\MiKTeX 2.9\miktex\bin\x64\;C:\Program Files (x86)\Skype\Phone\;C:\WINDOWS\System32\OpenSSH\;C:\Program Files\Java\jdk8\bin;C:\Program Files\Java\jre8\bin;C:\Users\Sangram\AppData\Local\Microsoft\WindowsApps;;C:\eclipse;
FPS_BROWSER_USER_PROFILE_STRING=Default
PATHEXT=.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
DriverData=C:\Windows\System32\Drivers\DriverData
OS=Windows_NT
windows_tracing_flags=3
COMPUTERNAME=SANGRAM-PC
PROCESSOR_REVISION=2a07
CommonProgramW6432=C:\Program Files\Common Files
ComSpec=C:\WINDOWS\system32\cmd.exe
ProgramData=C:\ProgramData
ProgramW6432=C:\Program Files
HOMEPATH=\Users\Sangram
SystemRoot=C:\WINDOWS
TEMP=C:\Users\Sangram\AppData\Local\Temp
HOMEDRIVE=C:
PROCESSOR_IDENTIFIER=Intel64 Family 6 Model 42 Stepping 7, GenuineIntel
USERPROFILE=C:\Users\Sangram
TMP=C:\Users\Sangram\AppData\Local\Temp
CommonProgramFiles(x86)=C:\Program Files (x86)\Common Files
ProgramFiles=C:\Program Files
PUBLIC=C:\Users\Public
NUMBER_OF_PROCESSORS=4
windir=C:\WINDOWS
=::=::\

How to get the value of System Property?

- The System.*getProperty(key)* method gets the system property indicated by the specified key.

- key is the name of the system property.

- This method returns the string value of the system property, or null if there is no property with that key.

Example 3:

```java
public class SysProp {

    public static void main(String[] args) {

        // Printing Name of the system property
        System.out.print("user.dir: ");
        System.out.println(System.getProperty("user.dir"));

        // Fetches the property set with 'home' key
        System.out.print("home: ");
        System.out.println(System.getProperty("home"));

        // Printing 'name of Operating System'
        System.out.print("os.name: ");
        System.out.println(System.getProperty("os.name"));

        // Printing 'Version of Operating System'
        System.out.print("os.version: ");
        System.out.println(System.getProperty("os.version"));

        // Printing 'File Separator'
        System.out.print("file.separator:  ");
        System.out.println(System.getProperty("file.separator"));

        // Printing 'JAVA Runtime version'
        System.out.print("JDK version: ");
        System.out.println(System.getProperty("java.runtime.version"));
```

```java
            // Printing 'JAVA Class Path'
            System.out.print("java.class.path: ");
            System.out.println(System.getProperty("java.class.path"));

            // Printing 'name' property
            System.out.print("name: ");
            System.out.println(System.getProperty("name"));
        }
}
```

Output:

user.dir: C:\Users\Sangram\eclipse-workspace\SysProp
home: null
os.name: Windows 10
os.version: 10.0
file.separator: \
version: 1.8.0_171-b11
java.class.path: C:\Program Files\Java\jdk8\jre\lib\resources.jar;C:\Program
Files\Java\jdk8\jre\lib\rt.jar;C:\Program Files\Java\jdk8\jre\lib\jsse.jar;C:\Program
Files\Java\jdk8\jre\lib\jce.jar;C:\Program
Files\Java\jdk8\jre\lib\charsets.jar;C:\Program
Files\Java\jdk8\jre\lib\jfr.jar;C:\Program Files\Java\jdk8\jre\lib\ext\access-bridge-
64.jar;C:\Program Files\Java\jdk8\jre\lib\ext\cldrdata.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\dnsns.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\jaccess.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\jfxrt.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\localedata.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\nashorn.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\sunec.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\sunjce_provider.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\sunmscapi.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\sunpkcs11.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\zipfs.jar;C:\Users\Sangram\eclipse-
workspace\SysProp\bin
name: null

How to get all the value of System Property?

- The **System.getProperties():** fetches all the properties – values that the JVM on your System gets from the Operating System.

Example: 4

```java
public class SysPropAll {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        // this will list the current system properties
        System.out.println(System.getProperties());
    }

}
```

Output:

{java.runtime.name=Java(TM) SE Runtime Environment, sun.boot.library.path=C:\Program Files\Java\jdk8\jre\bin, java.vm.version=25.171-b11, java.vm.vendor=Oracle Corporation, java.vendor.url=http://java.oracle.com/, path.separator=;, java.vm.name=Java HotSpot(TM) 64-Bit Server VM, file.encoding.pkg=sun.io, user.country=US, user.script=, sun.java.launcher=SUN_STANDARD, sun.os.patch.level=, java.vm.specification.name=Java Virtual Machine Specification, user.dir=C:\Users\Sangram\eclipse-workspace\SysPropAll, java.runtime.version=1.8.0_171-b11, java.awt.graphicsenv=sun.awt.Win32GraphicsEnvironment, java.endorsed.dirs=C:\Program Files\Java\jdk8\jre\lib\endorsed, os.arch=amd64, java.io.tmpdir=C:\Users\Sangram\AppData\Local\Temp\, line.separator=
, java.vm.specification.vendor=Oracle Corporation, user.variant=, os.name=Windows 10, sun.jnu.encoding=Cp1252, java.library.path=C:\Program Files\Java\jdk8\bin;C:\WINDOWS\Sun\Java\bin;C:\WINDOWS\system32;C:\WINDOWS;C:/Program Files/Java/jdk8/bin/../jre/bin/server;C:/Program Files/Java/jdk8/bin/../jre/bin;C:/Program Files/Java/jdk8/bin/../jre/lib/amd64;C:\Program Files\Dell\DW WLAN

Card;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wbem;
C:\WINDOWS\System32\WindowsPowerShell\v1.0\;C:\Program
Files\HDF_Group\HDFView\2.10.1\bin;C:\Program
Files\MATLAB\R2014a\runtime\win64;C:\Program
Files\MATLAB\R2014a\bin;C:\Program
Files\MATLAB\R2014a\polyspace\bin;C:\Program Files
(x86)\MATLAB\R2014a\runtime\win32;C:\Program Files
(x86)\MATLAB\R2014a\bin;C:\Program Files
(x86)\MATLAB\R2014a\polyspace\bin;C:\Program Files\MiKTeX
2.9\miktex\bin\x64\;C:\Program Files
(x86)\Skype\Phone\;C:\WINDOWS\System32\OpenSSH\;C:\Program
Files\Java\jdk8\bin;C:\Program
Files\Java\jre8\bin;C:\Users\Sangram\AppData\Local\Microsoft\WindowsApps;;C:
\eclipse;;., java.specification.name=Java Platform API Specification,
java.class.version=52.0, sun.management.compiler=HotSpot 64-Bit Tiered
Compilers, os.version=10.0, user.home=C:\Users\Sangram, user.timezone=,
java.awt.printerjob=sun.awt.windows.WPrinterJob, file.encoding=Cp1252,
java.specification.version=1.8, java.class.path=C:\Program
Files\Java\jdk8\jre\lib\resources.jar;C:\Program
Files\Java\jdk8\jre\lib\rt.jar;C:\Program Files\Java\jdk8\jre\lib\jsse.jar;C:\Program
Files\Java\jdk8\jre\lib\jce.jar;C:\Program
Files\Java\jdk8\jre\lib\charsets.jar;C:\Program
Files\Java\jdk8\jre\lib\jfr.jar;C:\Program Files\Java\jdk8\jre\lib\ext\access-bridge-
64.jar;C:\Program Files\Java\jdk8\jre\lib\ext\cldrdata.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\dnsns.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\jaccess.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\jfxrt.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\localedata.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\nashorn.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\sunec.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\sunjce_provider.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\sunmscapi.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\sunpkcs11.jar;C:\Program
Files\Java\jdk8\jre\lib\ext\zipfs.jar;C:\Users\Sangram\eclipse-
workspace\SysPropAll\bin, user.name=Sangram,
java.vm.specification.version=1.8, sun.java.command=SysPropAll,
java.home=C:\Program Files\Java\jdk8\jre, sun.arch.data.model=64,
user.language=en, java.specification.vendor=Oracle Corporation,
awt.toolkit=sun.awt.windows.WToolkit, java.vm.info=mixed mode,
java.version=1.8.0_171, java.ext.dirs=C:\Program

Files\Java\jdk8\jre\lib\ext;C:\WINDOWS\Sun\Java\lib\ext,
sun.boot.class.path=C:\Program Files\Java\jdk8\jre\lib\resources.jar;C:\Program
Files\Java\jdk8\jre\lib\rt.jar;C:\Program
Files\Java\jdk8\jre\lib\sunrsasign.jar;C:\Program
Files\Java\jdk8\jre\lib\jsse.jar;C:\Program Files\Java\jdk8\jre\lib\jce.jar;C:\Program
Files\Java\jdk8\jre\lib\charsets.jar;C:\Program
Files\Java\jdk8\jre\lib\jfr.jar;C:\Program Files\Java\jdk8\jre\classes,
java.vendor=Oracle Corporation, file.separator=\,
java.vendor.url.bug=http://bugreport.sun.com/bugreport/,
sun.io.unicode.encoding=UnicodeLittle, sun.cpu.endian=little,
sun.desktop=windows, sun.cpu.isalist=amd64}

Example: 5 Java Program illustrating the working of getProperties() method.

```java
public class SysPropAll {

        public static void main(String[] args) {
                // TODO Auto-generated method stub

                // this will list the current system properties
                java.util.Properties jvm =  System.getProperties();
                jvm.list(System.out);
        }
}
```

Note: System class refers to the JVM on which you are compling your JAVA code getProperty fetches the actual properties that JVM on your Sysytem gets from your Operating System.

Output:

-- listing properties --
java.runtime.name=Java(TM) SE Runtime Environment
sun.boot.library.path=C:\Program Files\Java\jdk8\jre\bin
java.vm.version=25.171-b11
java.vm.vendor=Oracle Corporation
java.vendor.url=http://java.oracle.com/
path.separator=;

java.vm.name=Java HotSpot(TM) 64-Bit Server VM
file.encoding.pkg=sun.io
user.script=
user.country=US
sun.java.launcher=SUN_STANDARD
sun.os.patch.level=
java.vm.specification.name=Java Virtual Machine Specification
user.dir=C:\Users\Sangram\eclipse-workspace\Sy...
java.runtime.version=1.8.0_171-b11
java.awt.graphicsenv=sun.awt.Win32GraphicsEnvironment
java.endorsed.dirs=C:\Program Files\Java\jdk8\jre\lib\en...
os.arch=amd64
java.io.tmpdir=C:\Users\Sangram\AppData\Local\Temp\
line.separator=

java.vm.specification.vendor=Oracle Corporation
user.variant=
os.name=Windows 10
sun.jnu.encoding=Cp1252
java.library.path=C:\Program Files\Java\jdk8\bin;C:\WIN...
java.specification.name=Java Platform API Specification
java.class.version=52.0
sun.management.compiler=HotSpot 64-Bit Tiered Compilers
os.version=10.0
user.home=C:\Users\Sangram
user.timezone=
java.awt.printerjob=sun.awt.windows.WPrinterJob
file.encoding=Cp1252
java.specification.version=1.8
user.name=Sangram
java.class.path=C:\Program Files\Java\jdk8\jre\lib\re...
java.vm.specification.version=1.8
sun.arch.data.model=64
java.home=C:\Program Files\Java\jdk8\jre
sun.java.command=SysPropAll
java.specification.vendor=Oracle Corporation
user.language=en
awt.toolkit=sun.awt.windows.WToolkit
java.vm.info=mixed mode
java.version=1.8.0_171

java.ext.dirs=C:\Program Files\Java\jdk8\jre\lib\ex...
sun.boot.class.path=C:\Program Files\Java\jdk8\jre\lib\re...
java.vendor=Oracle Corporation
file.separator=\
java.vendor.url.bug=http://bugreport.sun.com/bugreport/
sun.cpu.endian=little
sun.io.unicode.encoding=UnicodeLittle
sun.desktop=windows
sun.cpu.isalist=amd64

Example: 6

```java
import java.io.IOException;
public class SysPropAll {

    public static void main(String[] argv) throws IOException {

        if (argv.length == 0)
            System.getProperties().list(System.out);
        else {
            for (String s : argv) {
                System.out.println(s + " = " + System.getProperty(s));
            }
        }
    }
}
```

Output:

java.runtime.name=Java(TM) SE Runtime Environment
sun.boot.library.path=C:\Program Files\Java\jdk8\jre\bin
java.vm.version=25.171-b11
java.vm.vendor=Oracle Corporation
java.vendor.url=http://java.oracle.com/
path.separator=;
java.vm.name=Java HotSpot(TM) 64-Bit Server VM
file.encoding.pkg=sun.io
user.script=

user.country=US
sun.java.launcher=SUN_STANDARD
sun.os.patch.level=
java.vm.specification.name=Java Virtual Machine Specification
user.dir=C:\Users\Sangram\eclipse-workspace\Sy...
java.runtime.version=1.8.0_171-b11
java.awt.graphicsenv=sun.awt.Win32GraphicsEnvironment
java.endorsed.dirs=C:\Program Files\Java\jdk8\jre\lib\en...
os.arch=amd64
java.io.tmpdir=C:\Users\Sangram\AppData\Local\Temp\
line.separator=

java.vm.specification.vendor=Oracle Corporation
user.variant=
os.name=Windows 10
sun.jnu.encoding=Cp1252
java.library.path=C:\Program Files\Java\jdk8\bin;C:\WIN...
java.specification.name=Java Platform API Specification
java.class.version=52.0
sun.management.compiler=HotSpot 64-Bit Tiered Compilers
os.version=10.0
user.home=C:\Users\Sangram
user.timezone=
java.awt.printerjob=sun.awt.windows.WPrinterJob
file.encoding=Cp1252
java.specification.version=1.8
user.name=Sangram
java.class.path=C:\Program Files\Java\jdk8\jre\lib\re...
java.vm.specification.version=1.8
sun.arch.data.model=64
java.home=C:\Program Files\Java\jdk8\jre
sun.java.command=SysPropAll
java.specification.vendor=Oracle Corporation
user.language=en
awt.toolkit=sun.awt.windows.WToolkit
java.vm.info=mixed mode
java.version=1.8.0_171
java.ext.dirs=C:\Program Files\Java\jdk8\jre\lib\ex...
sun.boot.class.path=C:\Program Files\Java\jdk8\jre\lib\re...
java.vendor=Oracle Corporation

file.separator=\
java.vendor.url.bug=http://bugreport.sun.com/bugreport/
sun.cpu.endian=little
sun.io.unicode.encoding=UnicodeLittle
sun.desktop=windows
sun.cpu.isalist=amd64

Test the presence of a particular class

Example: 7 Check the Java Swing is Present or not.

```java
public class CheckForSwing {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        try {
            Class.forName("javax.swing.JButton");
            System.out.println("Java Swing is present");
        } catch (ClassNotFoundException e) {

            String failure =  "Sorry, but this version of MyApp needs \n" +
                    "a Java Runtime with JFC/Swing components\n" +
                    "having the final names (javax.swing.*)";

            System.err.println(failure);
        }
    }
}
```

Output:

Java Swing is present

Print Null device of your System

- In some operating systems, the null device is a device file that discards all data written to it but reports that the write operation succeeded.

- It provides no data to any process that reads from it, yielding EOF immediately.

- In Unix and Linux System, /dev/null

- In Windows System, NULL:

- Other Systems, jnk

Example: 8

```java
import java.io.File;

public class TestNullDevice {

    final static String UNIX_NULL_DEV = "/dev/null";
    final static String WINDOWS_NULL_DEV = "NUL:";
    final static String FAKE_NULL_DEV = "jnk";

    public static String getNullDev(){

        if(new File(UNIX_NULL_DEV).exists()){
            return UNIX_NULL_DEV;
        }

        String sys=System.getProperty("os.name");

        if(sys==null){
            return FAKE_NULL_DEV;
        }

        if(sys.startsWith("Windows")){
            return WINDOWS_NULL_DEV;
```

```java
        }

        return FAKE_NULL_DEV;
    }

    /** Return the name of the "Null Device" on platforms which support it,
    * or "jnk" (to create an obviously well-named temp file) otherwise.*/

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        String devNull=getNullDev();
        System.out.println(devNull);
    }

}
```

Output:

NUL: