

Basics of Java

OOPS Concepts

String Handling

Exception Handling

Java Multithreading

Advanced Topics

Collection Framework

Java GUI

Reflection API

RMI Application

Inner Class

Wrapper Class

File Handling

List

Set

Map

Queue & Deque

JDBC

Layout Managers

Introduction to Multithreading

Thread Class

Creating a thread

Joining threads

Sleeping Thread in Java

Naming Thread in Java

Thread Priority in Java

Daemon Thread in Java

Synchronization

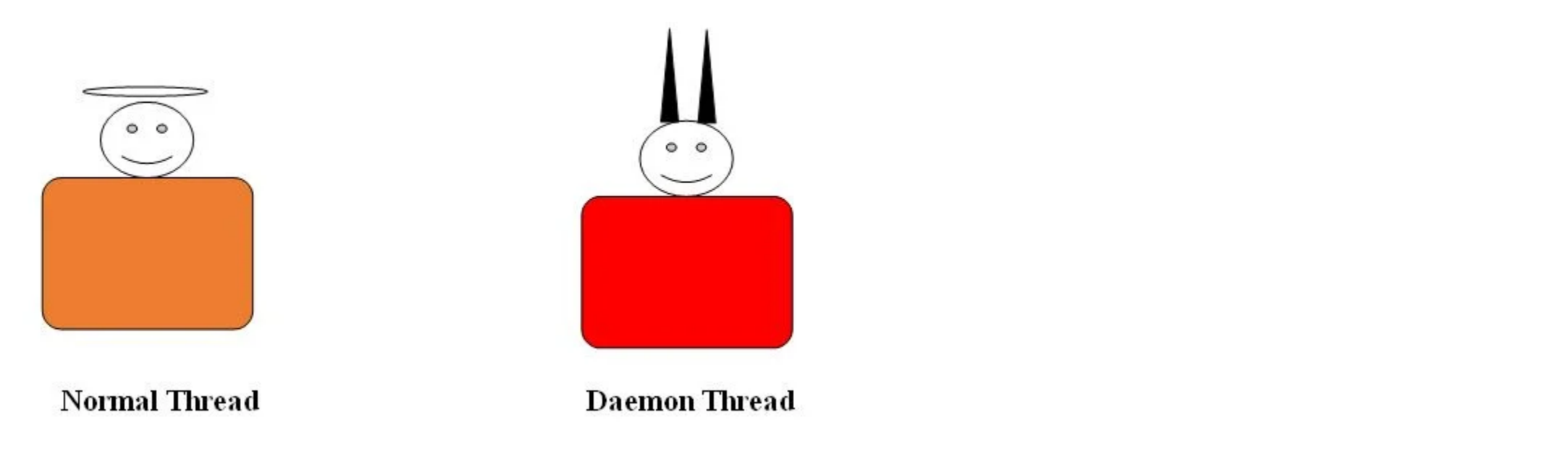
Interthread Communication

Thread group

Java Daemon Thread

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Daemon threads are a low priority thread that provide supports to user threads. These threads can be user defined and system defined as well. Garbage collection thread is one of the system generated daemon thread that runs in background. These threads run in the background to perform tasks such as garbage collection. Daemon thread does allow JVM from existing until all the threads finish their execution. When a JVM founds daemon threads it terminates the thread and then shutdown itself, it does not care Daemon thread whether it is running or not.



Following are the methods in Daemon Thread

1. void setDaemon(boolean status)

In Java, this method is used to create the current thread as a daemon thread or user thread. If there is a user thread as obj1 then obj1.setDaemon(true) will make it a Daemon thread and if there is a Daemon thread obj2 then calling obj2.setDaemon(false) will make it a user thread.

Syntax:

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2. boolean isDaemon()

In Java, this method is used to check whether the current thread is a daemon or not. It returns true if the thread is Daemon otherwise it returns false.

Syntax:

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Example:

Lets create an example to create daemon and user threads. To create daemon thread setdaemon() method is used. It takes boolean value either true or false.

```
public class DaemonDemo1 extends Thread
{
    public DaemonDemo1(String name1)
    {
        super(name1);
    }
    public void run()
    {
        if(Thread.currentThread().isDaemon())
        {
            System.out.println(getName() + " is Daemon thread");
        }
        else
        {
            System.out.println(getName() + " is User thread");
        }
    }
    public static void main(String[] args)
```

OUTPUT:

```
D:\Studytonight>javac DaemonDemo1.java
D:\Studytonight>java DaemonDemo1
D1 is Daemon thread
D3 is Daemon thread
D2 is User thread
```

Example : Daemon thread Priority

Since daemon threads are low level threads then lets check the priority of these threads. The priority we are getting is set by the JVM.

```
public class DaemonDemo1 extends Thread
{
    public DaemonDemo1(String name1)
    {
        super(name1);
    }
    public void run()
    {
        if(Thread.currentThread().isDaemon())
        {
            System.out.println(getName() + " is Daemon thread");
        }
        else
        {
            System.out.println(getName() + " is User thread");
        }
        System.out.println(getName()+" priority "+Thread.currentThread().getPriority());
    }
}
```

OUTPUT:

```
D1 is Daemon thread
D1 priority 5
D2 is User thread
D3 is Daemon thread
D2 priority 5
D3 priority 5
```

Example

While creating daemon thread make sure the setDaemon() is called before starting of the thread. Calling it after starting of thread will throw an exception and terminate the program execution.

```
public class DaemonDemo1 extends Thread
{
    public DaemonDemo1(String name1)
    {
        super(name1);
    }
    public void run()
    {
        if(Thread.currentThread().isDaemon())
        {
            System.out.println(getName() + " is Daemon thread");
        }
        else
        {
            System.out.println(getName() + " is User thread");
        }
        System.out.println(getName()+" priority "+Thread.currentThread().getPriority());
    }
}
```

OUTPUT:

```
D1 is Daemon threadException in thread "main"
D1 priority 5
D3 is User thread
D2 is User thread
D2 priority 5java.lang.IllegalThreadStateException

D3 priority 5
at java.base/java.lang.Thread.setDaemon(Thread.java:1418)
at myjavaproject.DaemonDemo1.main(DaemonDemo1.java:32)
```

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