multiple   process

multi   thread   light-weighted
   process

Threads

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A Basic Example

```
1  class HelloThread extends Thread {
2    int num;
3    HelloThread(int n){ num = n; }
4    public void run() {
5      for(int t = 0; t < 10; t++)
6        System.out.println(t + ":_Hello_from_thread_" + num);
7    }
8  }
9
10 public class ThreadDemo1{
11   public static void main(String[] argv){
12     HelloThread[] tarr = new HelloThread[5];
13     for(int i=0;i<5;i++){
14       tarr[i] = new HelloThread(i);
15       tarr[i].start();
16     }
17   }
18 }
```
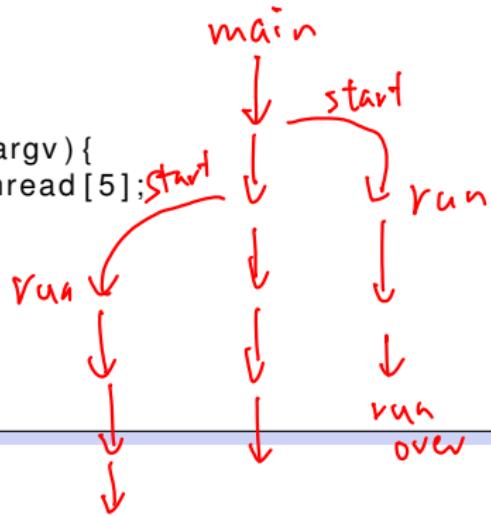
Another Route: Runnable

```
1   class HelloRunnable implements Runnable {
2     int num;
3     HelloRunnable(int n){ num = n; }
4     public void run() {
5       for(int t = 0; t < 10; t++)
6         System.out.println(t + ":_Hello_from_thread_" + num);
7     }
8   }
9
10  public class ThreadDemo2{
11    public static void main(String[] argv){
12      Thread[] tarr = new Thread[5];
13
14      for(int i=0;i<5;i++){
15        HelloRunnable r = new HelloRunnable(i);
16        tarr[i] = new Thread(r);
17        tarr[i].start();
18      }
19    }
20  }
```

Slow Things Down: `sleep`

```
1  public class ThreadDemo3{
2    public static void main(String[] argv)
3      throws InterruptedException{
4
5      for(int i=0;i<10;i++){
6        System.out.println(i);
7        Thread.sleep(1000);
8      }
9    }
10 }
```

main

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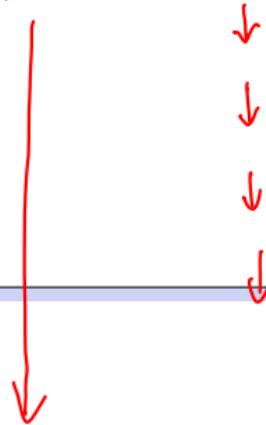
```
1   class HelloThread extends Thread {
2     int num;   Thread tr;
3     HelloThread(int n, Thread _tr){ num = n; tr = _tr; }
4     public void run() {
5       for(int t = 0; t < 10; t++){
6         System.out.println(t + ":_Hello_from_thread_" + num);
7         tr.interrupt();
8         try{ Thread.sleep(500); }
9         catch(InterruptedException e){
10          System.out.println("the_sleep_of_" + num + "_interrupted");
11        }
12      }
13    }
14  }
15  public class ThreadDemo4{
16    public static void main(String[] ar) throws InterruptedException{
17      HelloThread[] tarr = new HelloThread[5];
18      for(int i=0;i<5;i++){
19        tarr[i] = new HelloThread(i,
20          (i == 0? Thread.currentThread() : tarr[i−1]));
21        tarr[i].start();
22      }
23    }
```