

MODULE 6 - SHEET 1

```
public class ChineseRings
{ private static final int NRINGS = 4;

  private static int line = 0;

  public static void main(String[] args)
  { remove(NRINGS);
    System.out.printf("%n");
  }

  private static void remove(int n)
  { if (n>0)
    { remove(n-2);
      printOut(n,"off");
      replace(n-2);
      remove(n-1);
    }
  }

  private static void replace(int n)
  { if (n>0)
    { replace(n-1);

      remove(n-2);
      printOut(n, "on ");
      replace(n-2);
    }
  }

  private static void printOut(int n, String s)
  { System.out.printf("%3d %s", n, s);
    line++;
    if (line%10 == 0)
      System.out.printf("%n");
  }
}

public class Cross16
{ public static void main(String[] args)
  { int l = 0x0F0F0F;
    int r = 0xF0F0F0;
    int n = 0x123456;
    int L = (n&l) << 4;
    int R = (n&r) >> 4;
    n = L | R;
    System.out.printf("n is %s%n", Integer.toHexString(n));
  }
}
```

MODULE 6 - SHEET 2

```
public class ListExample
{
    public static void main(String[] args)
    {
        Link start = new Link(16);
        start.put(8);
        start.put(4);
        start.put(64);
        start.put(32);
        System.out.printf("List elements:  %s%n", start);
        System.out.printf("Element sum:    %d%n", start.sum());
    }
}

class Link
{
    private int val;
    private Link next;

    public Link(int n)
    {
        this.val = n;
        this.next = null;
    }

    public void put(int k)
    {
        if (this.next == null)
            this.next = new Link(k);
        else
            this.next.put(k);
    }

    public String toString()
    {
        if (this.next == null)
            return this.val + "";
        else
            return this.val + " " + this.next.toString();
    }

    public int sum()
    {
        return this.val + (this.next == null ? 0 : this.next.sum());
    }
}

// The toString() method may be written like the sum() method:
//
// public String toString()
// { return this.val + (this.next == null ? "" : " " + this.next.toString());
// }
```