

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.println();
    }

    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.print(fmtInt(n,3) + " " + s);
      line++;
      if (line%10 == 0)
        System.out.println();
    }

    private static String fmtInt(int n, int d)
    { String s = String.valueOf(n);
      while (s.length() < d)
        s = " " + s;
      return s;
    }
}
```

```
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.println("n is " + 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.println("List elements:  " + start);
    System.out.println("Element sum:    " + 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());
// }
```