TP rec2

1 Quicksort

Écrire le programme qui trie un tableau par la methode *quicksort*. Voici un programme C.

```
#include<stdio.h>

int a[20],n;

void quicksort(int l,int r)
{ int i,j,v,aux;
  if ( r>l )
  {  v=a[r]; i=l-1; j=r;
     do
     {  do  i++;  while ( ( a[i]<v )  && ( i<r ) );
        do  j--;  while ( ( a[j]>=v ) && ( j>=l ) );
        if (i<j) { aux=a[i]; a[i]=a[j]; a[j]=aux; }
     } while ( j>=i );
     aux=a[i]; a[i]=a[r]; a[r]=aux;

   quicksort(l,i-1);
   quicksort(i+1,r);
  }
}

main()
{ int i;
  printf("donnez la taille"); scanf("%d",&n);
  for(i=1;i<=n;i++)
  {  printf("donnez la tab[%d]",i);
     scanf("%d",&a[i]);
  }
  quicksort(1,n);
  for(i=1;i<=n;i++)
    printf("%d\t", a[i]);
 printf("\n");
}
```

2 Sequences de Fibonacci

```
#include<stdio.h>
int b[20],n;

type()
{int i;
  for(i=1;i<=n;i++) printf("%d ",b[i]);
  printf("\n");
}

fib(int k)
{ if(k<=1)
  { if(k==0) type();
    else { b[n]=0; type();
           b[n]=1; type();
         }
  }
  else
  { b[n-k+1]=0;              fib(k-1);
    b[n-k+1]=1;b[n-k+2]=0;  fib(k-2);
  }
}

main()
{  printf("donnez n:");scanf("%d",&n);
   fib(n);
}
```

3 Nombre de Stirling