

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>1 )
  { 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