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\* Fibonacco.c 斐波那契查找

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#include <stdio.h>

#define FIB\_MAXSIZE 100

void ProduceFib(int \*fib,int size)

{

int i;

fib[0] = 1;

fib[1] = 1;

for(i=2;i<size;i++)

{

fib[i] = fib[i-1] + fib[i-2];

}

}

int FibonacciSearch(int data[],int length,int key)

{

int low,high,mid,k,i,fib[FIB\_MAXSIZE];

low = 0;

high = length-1;

ProduceFib(fib,FIB\_MAXSIZE);

k = 0;

while(high>fib[k]-1)

{

k++;

}

for(i=length;i<=fib[k]-1;i++)

{

data[i] = data[high];

}

while(low<=high)

{

mid = low + fib[k-1] -1;

if(data[mid]==key)

{

if(mid <=length-1)

{

return mid;

}

else

{

return length -1;

}

}

if(data[mid]>key)

{

high = mid -1;

k = k-1;

}

if(data[mid]<key)

{

low = mid +1;

k = k -2;

}

}

return -1;

}

int main()

{

int data[] = {1,3,5,7,9,11,13,15,17,19,21};

int index,key;

printf("FibonacciSearch.c test\n");

printf("Please enter what you want find :\n");

scanf("%d",&key);

index = FibonacciSearch(data,11,key);

printf("%d\n",index);

return 0;

}

