

フィボナッチ数列を求める 3題

A

```
/* Fibonacci Series c language */
#include<stdio.h>
int main()
{
    int n, first = 0, second = 1, next, c;
    printf("Enter the number of terms\n");
    scanf("%d",&n);
    printf("First %d terms of Fibonacci series are :-\n",n);
    for ( c = 0 ; c < n ; c++ )
    {
        if ( c <= 1 )
            next = c;
        else
        {
            next = first + second;
            first = second;
            second = next;
        }
        printf("%d ",next);
    }
    return 0;
}
```

計算結果:

```
Enter the number of terms
First 15 terms of Fibonacci series are :-
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377
```

B

```
#include<stdio.h>
int Fibonacci(int);
int main()
{
    int n, i = 0, c;
    scanf("%d",&n);
    printf("Fibonacci series\n");
    for ( c = 1 ; c <= n ; c++ )
    {
        printf("%d\n", Fibonacci(i));
        i++;
    }
    return 0;
}
int Fibonacci(int n)
{
    if ( n == 0 )
```

```
    return 0;
else if ( n == 1 )
    return 1;
else
    return ( Fibonacci(n-1) + Fibonacci(n-2) );
}
```

計算結果:

Fibonacci series

```
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
```

C

```
/* 漸化式の演習 */
```

```
/* Fibonacci S. Kusafusa */
```

```
# include <stdio.h>
```

```
int main(){
```

```
double a0, a1, a2;
```

```
int i;
```

```
a0=1, a1=1;
```

```
printf("a0 is: %.fn", a0);
```

```
printf("a1 is: %.fn", a1);
```

```
    for (i=2; i<=100; i++) {
```

```
        a2=a1+a0;
```

```
        printf("a%d is: %.fn", i, a2);
```

```
        a0=a1;
```

```
        a1=a2;
```

```
    }
```

```
return 0;
```

```
}
```

計算結果:

```
a0 is: 1
```

```
a1 is: 1
```

```
a2 is: 2
```

a3 is: 3
a4 is: 5
a5 is: 8
a6 is: 13
a7 is: 21
a8 is: 34
a9 is: 55
a10 is: 89
a11 is: 144
a12 is: 233
a13 is: 377
a14 is: 610
a15 is: 987
a16 is: 1597
a17 is: 2584
a18 is: 4181
a19 is: 6765
a20 is: 10946
a21 is: 17711
a22 is: 28657
a23 is: 46368
a24 is: 75025
a25 is: 121393
a26 is: 196418
a27 is: 317811
a28 is: 514229
a29 is: 832040
a30 is: 1346269
a31 is: 2178309
a32 is: 3524578
a33 is: 5702887
a34 is: 9227465
a35 is: 14930352
a36 is: 24157817
a37 is: 39088169
a38 is: 63245986
a39 is: 102334155
a40 is: 165580141
a41 is: 267914296
a42 is: 433494437
a43 is: 701408733
a44 is: 1134903170
a45 is: 1836311903
a46 is: 2971215073
a47 is: 4807526976
a48 is: 7778742049
a49 is: 12586269025
a50 is: 20365011074