1조

20171686 임성원   20171697 전하훈
20171679 이종휘   20171696 장한영

```python
import time

def fibo(n):
    if n <= 1:
        return n
    return fibo(n - 1) + fibo(n - 2)


def iterfibo(n):
    # 반복문으로 피보나치 수열 구현
    # 1 1 2 3 5 8 12 21

    if n <= 1:
        return n
    else:
        a, b = 1, 1
        for i in range(1, n):
            a, b = b, a + b
        return a
```

```python
if __name__ == "__main__":
    while True:
        nbr = int(input("Enter a number: "))
        if nbr == -1:
            break

        ts = time.time()
        fibonum = fibo(nbr)
        ts = time.time() - ts
        print("Fibo (%d)=%d, time %.6f" %(nbr, fibonum, ts))

        ts = time.time()
        fibonum = iterfibo(nbr)
        ts = time.time() - ts
        print("InterFibo (%d)=%d, time %.6f" %(nbr, fibonum, ts))
```

- While True 지양 합시다.

```python
import time

#재귀함수를 이용한 방법
def fibo(num):
    if num ==1 or num ==2:
        return 1
    else:
        return fibo(num-1) + fibo(num-2)


#반복
def iterfibo(num):
    if num == 0:
        return 0
    elif num == 1:
        return 1
    else:
        a,b = 1,1
        for i in range(num-1):
            a,b = b,a+b
        return a
```

```python
nbr = 1

while (nbr>0):

    nbr = int(input("Enter a number: "))

    ts = time.time()

    fibonumber = iterfibo(nbr)

    ts = time.time() - ts

    print("IterFibo(%d)=%d, time %.6f" %(nbr, fibonumber, ts))

    ts = time.time()

    fibonumber = fibo(nbr)

    ts = time.time() - ts

    print("Fibo(%d)=%d, time %.6f" %(nbr, fibonumber, ts))
```

- elif 경우를 줄일 수 있어보임
  ex) : if num <= 1: return num

장한영 Code Review

```python
import math
import time
def fibo(num): #재귀
    if num ==1 or num ==2:
        return 1
    else:
        return fibo(num-1) + fibo(num-2)


def iterfibo(nbr): #반복을 이용
    c=0
    d=1

    for i in range(nbr):
        c,d = d,c+d

    return c


def mathfibo(nbr): # 점화식을 이용

    a= (((1/2* (1+math.sqrt(5))) **nbr+1) -((1/2*(1-math.sqrt(5)))**nbr+1))/math.sqrt(5)
    return (a)
```

```python
while True:
    nbr = int(input("Enter a number: "))
    if nbr == -1:

        break
    ts = time.time()
    fibonumber = fibo(nbr)
    ts = time.time() - ts
    print("IterFibo(%d)=%d, time %.6f" %(nbr, fibonumber, ts))
    ts = time.time()
    fibonumber = fibo(nbr)
    ts = time.time() - ts
    print("Fibo(%d)=%d, time %.6f" %(nbr, fibonumber, ts))
    ts = time.time()
    fibonumber = mathfibo(nbr)
    ts = time.time() - ts
    print("Fibo(%d)=%d, time %.6f" % (nbr, fibonumber, ts))
```

- While True 지양 합시다.

전하훈 Code Review

```python
import time

#리스트와 반복을 이용한 피보나치 구하기
def interfibo_lis(num):
    answer = 0
    lis = [num]
    while lis[0] > 0 :
        lis.append(lis[0]-1)
        lis.append(lis[0]-2)
        if lis[0] == 1:
            answer += 1
        del lis[0]
        lis.sort(reverse = True)

    return answer

#단순한 점화식 반복을 이용한 피보나치 구하기
def interfibo(num) :
    if num == 1 :
        return 1
    else :
        a0 = 0
        a1 = 1
        answer = 0
        for i in range(num-1) :
            answer = a0 + a1
            a0 = a1
            a1 = answer
```

```python
#재귀적 피보나치 구하기
def fibo(num):
    if num == 1 or num == 2 :
        return 1
    else :
        return fibo(num-1) + fibo(num-2)


num = int(input('Enter a number : '))
while num > 0 :
    ts = time.time()
    fibonumber = interfibo(num)
    ts = time.time() - ts
    print("Interfibo(%d) = %d, time = %.6f" %(num, fibonumber, ts))
    ts = time.time()
    fibonumber = interfibo_lis(num)
    ts = time.time() - ts
    print("Interfibo_lis(%d) = %d, time = %.6f" %(num, fibonumber, ts))
    ts = time.time()
    fibonumber = fibo(num)
    ts = time.time() - ts
    print("Fibo(%d) = %d, time = %.6f" %(num, fibonumber, ts))
    num = int(input('Enter a number : '))
```