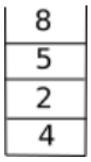
Piles_Files_Exercices_Corrigé

Sujets bac

Exercice 1 : Piles et langage Python

1



2.1

```
def hauteur_pile(P):
    Q = creer_pile_vide()
    n = 0
    while not est_vide(P):
        n = n + 1
        x = depiler(P)
        empiler(Q,x)
    while not est_vide(Q):
        x =  depiler(Q)
        empiler(P,x)
    return n
```

2.2

```
def max_pile(P,i):
    # si la pile  comporte moins de i élément ou que i=0 on renvoie 0
    if i > hauteur_pile(P) or i==0:
        return 0
    maxi = depiler(P)
    Q = creer_pile_vide()
    empiler(Q,maxi)
    j = 1
    indice = 1
    while j < i:
        j = j + 1
        x =  depiler(P)
        if  x > maxi:
            maxi = x
            indice = j
        empiler(Q,x)
    while not est_vide(Q):
        empiler(P, depiler(Q))
    return indice
```

3

```
def retourner(P,j):
    Q1 = creer_pile_vide()
    Q2 = creer_pile_vide()
    i = 0
    while not est_vide(P) and i < j:
        i = i + 1
        x = depiler(P)
        empiler(Q1, x)
    while not est_vide(Q1):
        x = depiler(Q1)
        empiler(Q2, x)
    while not est_vide(Q2):
        x = depiler(Q2)
        empiler(P, x)
```

4

```
def tri_crepes(P):
    N = hauteur_pile(P)
    i = N
    while i > 1:
        j = max_pile(P,i)
        retourner(P,j)
        retourner(P,i)
        i = i -1
```

Exercice 2 : Piles et files

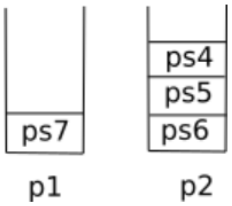
1

file

2

```
def ajouter(lst,proc):
    lst.append(proc)
```

3



4a

```
def est_vide(f):
    return pile_vide(f[0]) and pile_vide(f[1])
```

4b

```
def enfiler(f,elt):
    empiler(f[0],elt)
```

4c

```
def defiler(f):
    p1 = f[0]
    p2 = f[1]
    if pile_vide(p2):
        while not pile_vide(p1):
            v = depiler(p1)
            empiler(p2,v)
    return depiler(p2)
```