Corrigé

option informatique

Implémentation d'une file

Exercice 1. Implémentation d'une file à l'aide d'une liste circulaire

```
let new () = {Queue = Nil} ;;
```

```
let peek f = match f.Queue with
  | Nil       -> raise Empty
  | Cellule c -> c.Next.Valeur ;;
```

```
let take f = match f.Queue with
  | Nil       -> raise Empty
  | Cellule c -> let d = c.Next in
                 if c = d then f.Queue <- Nil else c.Next <- d.Next ;
                 d.Valeur ;;
```

```
let add x f =
  let rec c = {Valeur = x; Next = c} in
  match f.Queue with
    | Nil       -> f.Queue <- Cellule c
    | Cellule d -> c.Next <- d.Next ; d.Next <- c ; f.Queue <- Cellule c ;;
```

Exercice 2. Implémentation d'une file à l'aide de deux piles

```
let new () = {Pile1 = stack__new(); Pile2 = stack__new()} ;;
```

```
let add x f = stack__push x f.Pile1 ;;
```

```
exception Empty ;;

let take f =
  let transfert f =
    try while true do stack__push (stack__pop f.Pile1) f.Pile2 done
    with stack__Empty -> ()
  in
  try stack__pop f.Pile2
  with stack__Empty -> transfert f ;
                       try stack__pop f.Pile2
                       with stack__Empty -> raise Empty ;;
```