



```
abstract class Personnage {  
    private Action a;  
    Personnage (Action a)  
        this.a = a;  
    {  
}
```

```
class Guerrier extends {  
    Guerrier (Arme arme) {  
        super(arme);  
    {  
        Guerrier (Lanceur l) {  
            super(l);  
        {  
            {
```

```
A.m();
```

```
A a = new A();
```

```
a.m();
```

```
class Base {
```

```
    Object data;
```

```
    Base (Object data) {  
        this.data = data;
```

```
    }
```

```
    Object get () { return data }
```

```
    void set (Object data) { this.data  
        = data; }
```

```
}
```



```
class Base<T> {  
    T data;  
    Base(T data) {}  
    T get() {}  
    void set(T data) {}  
}
```

```
Base<String> bs = new Base<String>  
    ("abc")
```

```
String s = bs.get();  
bs.set("abc")
```

Base(Integer) be = new Base() (48)
|||
Integer value

```
interface Accumulator <S> {  
    void accumulate(S arg),  
    S read();  
    boolean isOver();  
}
```

```
interface AccFunction <S, T> {  
    S.apply(S acc, S exit,  
            T done);  
}
```



```
class InvalidContentException  
    extends RuntimeException  
    InvalidContentException  
        (String msg) {  
        super();  
    }  
}
```

```
    }  
}
```

```
interface Accumulator<S> {  
    void accumulate (S a);  
    S read();  
    boolean isOver();  
}
```

```
final Integer tab = ...;
```

```
Accumulator < Integer > a =  
    new Accumulator < > {  
        Integer acc = 0;  
        int index;
```

```
public void accumulate (Integer b) {  
    if (!isOver()) {  
        acc = acc + b * tab[index++];  
    }  
}  
Integer read() { return acc; }  
boolean isOver() { return index ==
```


$= \text{tab.length};$

```
class Matrix<T> {
```

```
    T data;
```

```
    Matrix(T data) {
```

```
        if (!checkContent(data))
```

```
            throw new InvalidContentException
```

```
        this.data = data;
```

```
    }
```

```
    int nRows() { return data.length; }
```

```
    int nCols() { return data[0].length; }
```



```
private class MatriceScanner<S>  
    implements Accumulator<S>
```

```
    S acc;
```

```
    int i, j, int di, dj,
```

```
    AccumFunction<S, T> af;
```

```
    void accumulate(S arg)
```

```
    {  
        if (checkIndex(i, j))
```

```
        {  
            acc = apply(acc, arg, data
```

```
                [i][j]);
```

```
            i += di;
```

```
            j += dj;
```

```
        }  
    }
```

