

IBM Ponther This April 2021

Code Résolution Exemple 2

Exemple 2: "Unwinable sets" $\{\{1, 2, 5, 8, 9\}, \{2, 3, 4, 5, 8\}, \{2, 5, 6, 7, 8\}\}$

Input Condition Sets-----

```
n = 9; q = 5; Rotatelimit = 500;
```

Definition "Josephus" Function-----

```
Josephus[ns_Integer, qs_Integer] :=  
(list = Range[ns];  
While[Length[list] ≠ q,  
list = Rest[RotateLeft[list, qs - 1]]];  
Sort[list])
```

Subsets All possibility-----

```
f2 = Subsets[Range[n], {q}];  
Print["All possibility : ", Length[f2]];
```

```
All possibility : 126
```

Clalcul Josephus possibility-----

```

ClearSystemCache[];
ju = {};
ju = ParallelTable[
  Josephus[n, k], {k, 1, Rotatelimit}];
ju = Sort[DeleteDuplicates[ju]];
Print["Calcul Net possibility : ",
  Length[ju]]

```

Calcul Net possibility : 123

unwinable sets-----

```

s = 0;
sec = {};
For[i = 1, i ≤ Length[ju],
  i ++, If[f2[[i + s]] != ju[[i]],
    AppendTo[sec, f2[[i + s]]];
    s = s + 1]];
Print["Unwinable sets : ", sec]

```

Unwinable sets : {{1, 2, 5, 8, 9}, {2, 3, 4, 5, 8}, {2, 5, 6, 7, 8}}
