**Algorithmes de tri**

**Prenez connaissance du diaporama**

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**Assurez-vous d’avoir bien compris les tris présentés via les nombreuses animations et vidéos proposées !**

Les solutions des exercices se trouvent à la fin de ce document.

**Algorithme de tri par comptage**

Si la table à trier est :

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 5 | 0 | 2 | 1 | 4 | 5 | 5 | 1 |

Donnez la table de comptage obtenue à la fin de la 1ère phase de l’algorithme :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2 | 3 | 1 | 0 | 1 | 3 |

Si la table de comptage obtenue à la fin de la 1ère phase de l’algorithme est :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 3 | 2 | 0 | 2 | 1 | 4 |

Donnez la table triée obtenue à partir de celle-ci à la fin de la seconde phase :

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 0 | 1 | 1 | 3 | 3 | 4 | 5 | 5 | 5 | 5 |

**Algorithme de tri par sélection**

Triez par ordre croissant, « à la main » la table suivante en utilisant l’algorithme de tri par sélection :

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | 2 | 9 | 6 | 8 | 1 | 5 | 4 |

Donnez la table obtenue après 1 étape :

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 9 | 6 | 8 | 7 | 5 | 4 |

Donnez la table obtenue après 2 étapes :

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 9 | 6 | 8 | 7 | 5 | 4 |

Donnez la table obtenue après 3 étapes :

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 4 | 6 | 8 | 7 | 5 | 9 |

**Algorithme de tri par insertion**

Triez par ordre croissant, « à la main » la table suivante en utilisant l’algorithme de tri par insertion :

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | 2 | 8 | 6 | 9 | 1 | 5 | 4 |

Donnez la table obtenue après 1 étape :

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 7 | 8 | 6 | 9 | 1 | 5 | 4 |

Donnez la table obtenue après 2 étapes :

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 7 | 8 | 6 | 9 | 1 | 5 | 4 |

Donnez la table obtenue après 3 étapes :

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 6 | 7 | 8 | 9 | 1 | 5 | 4 |

Solutions :

Tri par comptage

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2 | 3 | 1 | 0 | 1 | 3 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 0 | 1 | 1 | 3 | 3 | 4 | 5 | 5 | 5 | 5 |

Tri par sélection

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 9 | 6 | 8 | 7 | 5 | 4 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 9 | 6 | 8 | 7 | 5 | 4 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 4 | 6 | 8 | 7 | 5 | 9 |

Tri par insertion

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 7 | 8 | 6 | 9 | 1 | 5 | 4 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 7 | 8 | 6 | 9 | 1 | 5 | 4 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 6 | 7 | 8 | 9 | 1 | 5 | 4 |