# Unit 2.1 Algorithms; Lesson 4 – Merge Sort

## Activity 3

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2** | **19** | **3** | **45** | **77** | **10** | **25** | **29** | **60** | **1** |

### Low

Merge sort the list:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Split the list into individual lists:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Merge the sub- lists

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Merge the sub- lists

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Merge the sub- lists

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Merge the sub- lists

### Medium

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2** | **19** | **3** | **45** | **77** | **10** | **25** | **29** | **60** | **1** |

Merge sort the list:

1. Split the list into individual lists

|  |
| --- |
|  |

2. Merge the sub- lists

|  |
| --- |
|  |

3. Merge the sub- lists

|  |
| --- |
|  |

4. Merge the sub- lists

|  |
| --- |
|  |

5. Merge the sub- lists

|  |
| --- |
|  |

### High

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2** | **19** | **3** | **45** | **77** | **10** | **25** | **29** | **60** | **1** |

Merge sort the list:

|  |
| --- |
|  |

**Extension:** How would you apply merge sort to a list of words? Try and merge sort: John, Bob, Jane, Joan, Fred, Jade, Karl, Ciaran.

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