Merging

Merge.

- Keep track of smallest element in each sorted half.
- Insert smallest of two elements into auxiliary array.
- Repeat until done.

auxiliary array

smallest

A G L O R

smallest

H I M S T

A
Merging

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- Repeat until done.

```
smallest
A  G  L  O  R

smallest
H  I  M  S  T
```

```
A  G
auxiliary array
```
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<table>
<thead>
<tr>
<th>A</th>
<th>G</th>
<th>L</th>
<th>O</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>I</td>
<td>M</td>
<td>S</td>
<td>T</td>
</tr>
</tbody>
</table>

auxiliary array
**Merging**

**Merge.**
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- Repeat until done.

![Diagram of merging process]

```
AGLOR   HIMST
```

```
AGHILMOR
```

Auxiliary array
Merging

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```
A G L O R
H I M S T
```

```
A G H I L M O R S
```

first half exhausted

smallest
Merging

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<table>
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<tr>
<th>A</th>
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<th>L</th>
<th>O</th>
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<th>I</th>
<th>M</th>
<th>S</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>first half exhausted</td>
<td>smallest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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auxiliary array
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Merging

Merging