



- $arr[0:10]$ is divided into $arr[0:5]$ and $arr[6:10]$
 $(8, 5, 89, 30, 42, 93, 64, 4, 21, 56, 3) \rightarrow (8, 5, 89, 30, 42, 93)$ and $(64, 4, 21, 56, 3)$
 - $arr[0:5]$ is divided into $arr[0:2]$ and $arr[3:5]$
 $(8, 5, 89, 30, 42, 93) \rightarrow (8, 5, 89)$ and $(30, 42, 93)$
 - $arr[0:2]$ is divided into $arr[0:1]$ and $arr[2]$
 $(8, 5, 89) \rightarrow (8, 5)$ and (89)
 - $arr[0:1]$ is divided into $arr[0]$ and $arr[1]$
 $(8, 5) \rightarrow (8)$ and (5)
 - ❖ $arr[0]$ and $arr[1]$ are merged to produce sorted $arr[0:1]$
 (8) and $(5) \rightarrow (5, 8)$
 - ❖ $arr[0:1]$ and $arr[2]$ are merged to produce sorted $arr[0:2]$
 $(5, 8)$ and $(89) \rightarrow (5, 8, 89)$
 - $arr[3:5]$ is divided into $arr[3:4]$ and $arr[5]$
 $(30, 42, 93) \rightarrow (30, 42)$ and (93)
 - $arr[3:4]$ is divided into $arr[3]$ and $arr[4]$
 $(30, 42) \rightarrow (30)$ and (42)
 - ❖ $arr[3]$ and $arr[4]$ are merged to produce sorted $arr[3:4]$
 (30) and $(42) \rightarrow (30, 42)$
 - ❖ $arr[3:4]$ and $arr[5]$ are merged to produce sorted $arr[3:5]$
 $(30, 42)$ and $(93) \rightarrow (30, 42, 93)$
 - ❖ $arr[0:2]$ and $arr[3:5]$ are merged to produce $arr[0:5]$
 $(5, 8, 89)$ and $(30, 42, 93) \rightarrow (5, 8, 30, 42, 89, 93)$
- $arr[6:10]$ is divided into $arr[6:8]$ and $arr[9:10]$
 $(64, 4, 21, 56, 3) \rightarrow (64, 4, 21)$ and $(56, 3)$
 - $arr[6:8]$ is divided into $arr[6:7]$ and $arr[8]$
 $(64, 4, 21) \rightarrow (64, 4)$ and (21)
 - $arr[6:7]$ is divided into $arr[6]$ and $arr[7]$
 $(64, 4) \rightarrow (64)$ and (4)
 - ❖ $arr[6]$ and $arr[7]$ are merged to produce sorted $arr[6:7]$
 (64) and $(4) \rightarrow (4, 64)$
 - ❖ $arr[6:7]$ and $arr[8]$ are merged to produce sorted $arr[6:8]$
 $(4, 64)$ and $(21) \rightarrow (4, 21, 64)$
 - $arr[9:10]$ is divided into $arr[9]$ and $arr[10]$
 $(56, 3) \rightarrow (56)$ and (3)
 - ❖ $arr[9]$ and $arr[10]$ are merged to produce sorted $arr[9:10]$
 (56) and $(3) \rightarrow (3, 56)$
 - ❖ $arr[6:8]$ and $arr[9:10]$ are merged to produce $arr[6:10]$
 $(4, 21, 64)$ and $(3, 56) \rightarrow (3, 4, 21, 56, 64)$
- ❖ $arr[0:5]$ and $arr[6:10]$ are merged to produce $arr[0:10]$
 $(5, 8, 30, 42, 89, 93)$ and $(3, 4, 21, 56, 64) \rightarrow (3, 4, 5, 8, 21, 30, 42, 56, 64, 89, 93)$