Given\_array

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 5 | 2 | 1 | 3 | 5 | 4 | 2 | 3 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|  |  |  |  |  |  |  |  | 1 |  |
|  |  |  |  |  | 1 |  |  |  |  |
|  |  | 1 |  |  |  |  |  |  |  |
|  | 1 |  |  |  |  |  |  |  |  |
|  |  |  | 1 |  |  |  |  |  |  |
|  |  |  |  |  | 2 |  |  |  |  |
|  |  |  |  | 1 |  |  |  |  |  |
|  |  | 2 |  |  |  |  |  |  |  |
| 0 | 1 | 2 | 2 | 1 | 2 | 0 | 0 | 1 | 0 |

INDEX

COUNT

COUNT

FINAL COUNT

Sum the index from 1-9 not 0-9, 0 index will be as it is ( From Final Count)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 3 | 5 | 6 | 8 | 8 | 8 | 9 | 9 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Final Index

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  | 8 |
|  |  |  |  |  |  |  | 5 |  |
|  |  | 2 |  |  |  |  |  |  |
| 1 |  |  |  |  |  |  |  |  |
|  |  |  |  | 3 |  |  |  |  |
|  |  |  |  |  |  | 5 |  |  |
|  | 2 |  |  |  | 4 |  |  |  |
|  |  |  | 3 |  |  |  |  |  |
| 1 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 8 |

Final Sorted Array

**PseudoCode Algorithm:**

Int K=Given\_array[0];

For(i=1;i<size;i++)

{

If (Given\_array[i]>K)

K=Given\_array[i];

}

For (i=0;i<=K;i++)

{

Count[i]=0;

}

For(i=0;i<size;i++)

{

++Count[Given\_array[i]];

}

For(i=1;i<=K;i++)

{

Count[i]=Count[i]+Count[i-1];

}

For (i=size-1;i>=0;i--)

{

Final\_Sorted[--Count[Given\_array[i]]]=Given\_array[i];

}

For(i=0;i<size;i++)

{

Final\_Sorted[i]=Given\_array[i];

}