|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Value | 10 | 15 | 45 | 20 | 25 | 6 | 1 | 100 | 65 | 99 |
| Index | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

1. Find the Largest Odd Number in an Array, showcase the simulation.
2. Write the appropriate pseudocode to find the item 100
3. Build a simulation to insert 84 at position 5, in the given array.
4. Write a program to delete 100 from the array.

Solution 1:

Find the Largest Odd Number in an Array – Simulation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Action | Number Checked | Odd? | TempValue |
| 1 | Compare with arr [0] | 10 | No | -1 (Initial) |
| 2 | Compare with arr [1] | 15 | Yes | 15 |
| 3 | Compare with arr [2] | 45 | Yes | 45 |
| 4 | Compare with arr [3] | 20 | No | 45 |
| 5 | Compare with arr [4] | 25 | Yes | 45 |
| 6 | Compare with arr [5] | 6 | No | 45 |
| 7 | Compare with arr [6] | 1 | Yes | 45 |
| 8 | Compare with arr [7] | 100 | No | 45 |
| 9 | Compare with arr [8] | 65 | Yes | 65 |
| 10 | Compare with arr [9] | 99 | Yes | 99 |

Final Output: 99

Solution 3:

**Step 1: Initialize the Array**

1. Define an array with 10 elements:  
   {10, 15, 45, 20, 25, 6, 1, 100, 65, 99}
2. Define the new element to be inserted: 84
3. Define the insertion position: 5

**Step 2: Shift Elements to the Right**

1. Start from the last index (9) and move each element one step to the right until reaching the insertion position (5):
   * Move the value at index 9 to index 10
   * Move the value at index 8 to index 9
   * Move the value at index 7 to index 8
   * Move the value at index 6 to index 7
   * Move the value at index 5 to index 6

**Step 3: Insert the New Element**

1. Place 84 at index 5.

**Step 4: Print the Updated Array**

1. Display the updated array after insertion.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Value | 10 | 15 | 45 | 20 | 25 | **84** | 6 | 1 | 100 | 65 | 99 |
| **Index** | 0 | 1 | 2 | 3 | 4 | **5** | 6 | 7 | 8 | 9 | 10 |

Solution 4: Program to Delete 100 from the Array

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Value | 10 | 15 | 45 | 20 | 25 | 84 | 6 | 1 | 100 | 99 |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

**Step 1: Identify the position of 100**

1. Start scanning the array from index 0.
2. Find 100 at index **8**.

**Step 2: Shift Elements Left from Index 8**

1. Move the value at index 9 (99) to index 8.

**Step 3: Remove the Last Element:** Reduce array size by 1.