**Interpolation Search**

**Interpolation Search Program:**

#include <iostream>

using namespace std;

void print\_ar (int ar[], int size)

{

for (int i = 0; i < size; ++i)

{

cout << ar[i] << " ";

}

cout << endl;

}

int interpolation\_search (int ar[], int value, int size)

{

int low = 0;

int high = size - 1;

int mid;

while (ar[low] <= value && ar[high] >= value)

{

mid = low + ((value - ar[low]) \* (high - low)) / (ar[high] - ar[low]);

if (ar[mid] < value)

{

low = mid + 1;

}

else if (ar[mid] > value)

{

low = mid - 1;

}

else

{

return mid;

}

}

if (ar[low] == value)

{

return low;

}

else

{

return -1;

}

}

int main()

{

int ar [] = {9, 1, 19, 42, 12, 55, 37, 3, 0, 87};

int value, pos;

cout << "Your Array : ";

print\_ar (ar, 10);

cout << "Enter the value to search : ";

cin >> value;

pos = interpolation\_search (ar, value, 10);

if (pos != -1)

{

cout << "Value Found at position : " << pos + 1 << endl;

}

else

{

cout << "Value is not found in the list" << endl;

}

return 0;

}