EXPERIMENT [9](binary search )

CODE:

#include <stdio.h>

int binarySearch(int arr[], int size, int key) {

int low = 0, high = size - 1;

while (low <= high) {

int mid = (low + high) / 2;

if (arr[mid] == key)

return mid; // element found

else if (arr[mid] < key)

low = mid + 1; // search in right half

else

high = mid - 1; // search in left half

}

return -1; // element not found

}

int main() {

int arr[100], n, i, key, result;

printf("Enter number of elements: ");

scanf("%d", &n);

printf("Enter %d sorted elements:\n", n);

for (i = 0; i < n; i++)

scanf("%d", &arr[i]);

printf("Enter the number to search: ");

scanf("%d", &key);

result = binarySearch(arr, n, key);

if (result == -1)

printf("Number not found in the array.\n");

else

printf("Number found at index %d (position %d).\n", result, result + 1);

return 0;

}

OUTPUT:

