QUESTION 2a: Write an efficient program to find out whether a sorted input array contains two elements whose sum is exactly equal to 198.

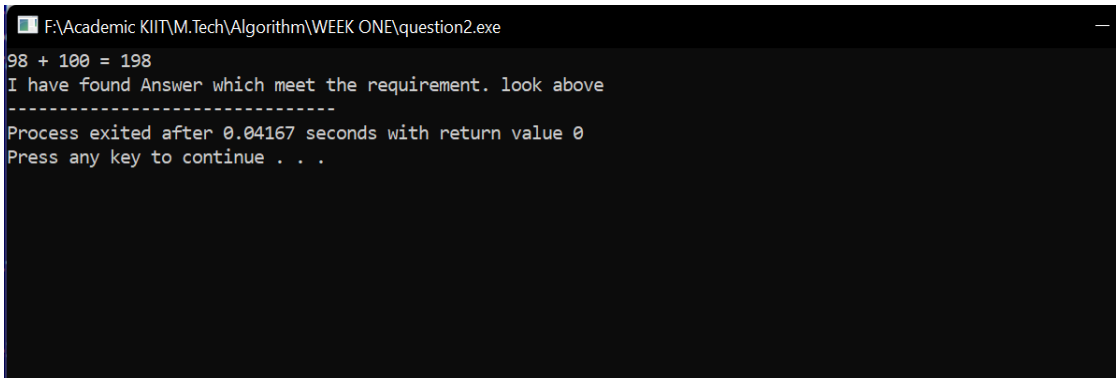
```
//(a) 100, 99, 98, ----, 3, 2,1
#include <stdio.h>
//I have used binary search algorithm to get the second number
int binarySearch(int arr[], int l, int r, int current_value)
{
	if (r >= l) {
		int mid = l + (r - l) / 2;
		if (arr[mid]+current_value == 198){
			if(mid!=current_value){
				return mid;
			}
			else{
				return 0;
			}
		}

		if (arr[mid] +current_value> 198)
			return binarySearch(arr, l, mid - 1, current_value);
		return binarySearch(arr, mid + 1, r, current_value);
	}
	return 0;
}

int main(void)
{
```

```
	int arr[101];
	int j;
	for(j=100;j>0;j--){
		arr[j]=j;
	}
	int n = sizeof(arr) / sizeof(arr[0]);
	int i,k=0;
	bool flag=false;
	for(i=100;i>0;i--){
		k=k+1;
		if(binarySearch(arr,0,n-k,i)){
			printf("%d + %d = 198\n", binarySearch(arr,0,n-1,i),i);
			flag = true;
		}
	}
	if(flag){
		printf("I have found Answer which meet the requirement.
look above");
	}
	else{
		printf("I have not found any two element which meet the
requirement.");
	}
	return 0;
}
```

OUTPUT:


F:\Academic KIIT\M.Tech\Algorithm\WEEK ONE\question2.exe
98 + 100 = 198
I have found Answer which meet the requirement. look above

Process exited after 0.04167 seconds with return value 0
Press any key to continue . . .