

Find the pair whose sum is X

```
#include <stdio.h>
#include <stdlib.h>

int cmpfunc (const void * a, const void * b)
{
    return ( *(int*)a - *(int*)b );
}

int findPairs(int *arr, int size, int sum)
{
    int left, right;

    //sort the array using quicksort (built function)
    qsort(arr, size, sizeof(int), cmpfunc);

    left = 0;
    right = size - 1;
    while(left < right)
    {
        if(arr[left] + arr[right] == sum)
            return 1;
        else if (arr[left] + arr[right] < sum)
            left++;
        else
            right--;
    }
    return 0;
}

int main()
{
    int size, index, sum, *arr;
    printf("Enter number of Elements in an array \n");
    scanf("%d", &size);
    //allocate memory for array
    arr = (int *) malloc(sizeof(int) * size);
    printf("Enter elements to array\n");
    for(index = 0; index < size; index++)
        scanf("%d", &arr[index]);
    printf("Enter sum value");
    scanf("%d", &sum);
    if(findPairs(arr, size, sum))
        printf("\nThe pairs of elements whose sum is = %d found in an array", sum);
    else
        printf("The pairs of elements whose sum is = %d not found in an array", sum);
    return 0;
}

Time complexity: O(nlogn)
Space complexity: O(1)
```