**package** Question8;

//Given an array A, Find two elements whose sum is closest to zero Page

**public** **class** Two\_Elements\_Whose\_Sum\_Is\_Closest\_To\_Zero {

**static** **void** minAbsSumPair(**int** arr[], **int** n)

{

**int** sum, min\_sum = 999999;

**int** l = 0, r = n-1;

**int** min\_l = l, min\_r = n-1;

**if**(n < 2)

{

System.***out***.println("Invalid Input");

**return**;

}

*sort*(arr, l, r);

**while**(l < r)

{

sum = arr[l] + arr[r];

**if**(Math.*abs*(sum) < Math.*abs*(min\_sum))

{

min\_sum = sum;

min\_l = l;

min\_r = r;

}

**if**(sum < 0)

l++;

**else**

r--;

}

System.***out***.println(" The two elements whose "+

"sum is minimum are "+

arr[min\_l]+ " and "+arr[min\_r]);

}

**public** **static** **void** main (String[] args)

{

**int** arr[] = {1, 60, -10, 70, -80, 85};

**int** n = arr.length;

*minAbsSumPair*(arr, n);

}

**static** **int** partition(**int** arr[], **int** low, **int** high)

{

**int** pivot = arr[high];

**int** i = (low-1);

**for** (**int** j=low; j<high; j++)

{

**if** (arr[j] <= pivot)

{

i++;

**int** temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

}

**int** temp = arr[i+1];

arr[i+1] = arr[high];

arr[high] = temp;

**return** i+1;

}

**static** **void** sort(**int** arr[], **int** low, **int** high)

{

**if** (low < high)

{

**int** pi = *partition*(arr, low, high);

*sort*(arr, low, pi-1);

*sort*(arr, pi+1, high);

}

}

}