```c
/*##############################################################################*/
/*HW05_Furkan_Erdol_131044065_part2.c                                           */
/*_____________________________                                                 */
/*Written by Furkan Erdol on March 22, 2015                                     */
/*Description                                                                   */
/*_____________                                                                 */
/*                                                                              */
/*<<<Gives one array and finds and prints the screen:                           */
/*  -Maximum value                                                              */
/*  -Maximum second value                                                       */
/*  -Sum of all array                                                           */
/*  -How many times the value entered is repeated                               */
/*  -The location of the valeu entered                                          */
/*                                                                              */
/*                                                                              */
/*Inputs:                                                                       */
/*  -Input array                                                                */
/*  -Value for counting                                                         */
/*  -Valeue for searching                                                       */
/*Outputs:                                                                      */
/*  -Maxiumum number in array                                                   */
/*  -Maxiumum second number in array                                            */
/*  -Sum of all array                                                           */
/*  -How many times the number entered is repeated                              */
/*  -The location of the number entered                                         */
/*                                                                              */
/*..............................................................................*/
/*                               Includes                                       */
/*..............................................................................*/
#include <stdio.h>
#define SIZE 9 /*Size of input array*/

/*Define enumarated type*/
typedef enum
 {FALSE=0, TRUE=1}
bool;

/*Function prototypes*/

/*Finds max number in array*/
int max_array(const int array[], int n);
/*Finds second max number in array*/
int second_max_array(const int array[], int n);
/*Finds sum of all array*/
int sum_all_array (const int array[], int n);
/*Finds how many times the number entered is repeated*/
int count_array(const int array[], int n, int value);
/*Finds the location of the number entered and prints the screen*/
bool search_array(const int array[], int n, int value);


int
main(void)
{
    /*Inputs*/
    int count_of_value1=6, /*Input for counting*/
        count_of_value2=8, /*Input for counting*/
        count_of_value3=3, /*Input for counting*/
        search_value1=2, /*Input for searching*/
        search_value2=8, /*Input for searching*/
        search_value3=12; /*Input for searching*/
    int myarray[SIZE]={6,8,3,3,12,8,3,8,2}; /*Input array*/
    /*Outputs*/
    int max, /*Maximum number in array*/
        second_max, /*Maximum second number in array*/
        sum, /*Sum of all array*/
        count, /*How many times the number entered is repeated*/
        search; /*the location of the number entered*/


    /*Finds max number in array and prints the screen*/
    printf("\n++++++++++++++++++++++++++++++");
```

```
 73      max=max_array(myarray, SIZE);
 74      printf("\nMaximum array is: %d",max);
 75
 76      /*Finds second max number in array and prints the screen*/
 77      printf("\n++++++++++++++++++++++++++++++");
 78      second_max=second_max_array(myarray, SIZE);
 79      printf("\nMaximum second array is: %d",second_max);
 80
 81      /*Finds sum of all array and prints the screen*/
 82      printf("\n++++++++++++++++++++++++++++++");
 83      sum= sum_all_array (myarray, SIZE);
 84      printf("\nSum of all array is: %d",sum);
 85
 86      /*Finds how many times the number entered is repeated and prints the screen*/
 87      /*This procedure is done three times*/
 88      printf("\n++++++++++++++++++++++++++++++");
 89      count=count_array(myarray, SIZE, count_of_value1);
 90      printf("\nCount of value %d is: %d",count_of_value1, count);
 91      count=count_array(myarray, SIZE, count_of_value2);
 92      printf("\nCount of value %d is: %d",count_of_value2, count);
 93      count=count_array(myarray, SIZE, count_of_value3);
 94      printf("\nCount of value %d is: %d",count_of_value3, count);
 95
 96      /*Finds the location of the number entered and prints the screen*/
 97      /*Gives an error message if the number entered does not exist*/
 98      /*This procedure is done three times*/
 99      printf("\n++++++++++++++++++++++++++++++");
100      search=search_array(myarray, SIZE, search_value1);
101      if(search==FALSE)
102          printf("\nNumber couldn't foun!");
103      search=search_array(myarray, SIZE, search_value2);
104      if(search==FALSE)
105          printf("\nNumber couldn't foun!");
106      search=search_array(myarray, SIZE, search_value3);
107      if(search==FALSE)
108          printf("\nNumber couldn't foun!");
109      printf("\n++++++++++++++++++++++++++++++\n");
110
111
112      return 0;
113
114  }
115
116  /*Finds max number in array*/
117  int max_array(const int array[], int n)
118  {
119
120      int i,
121          max=0; /*Maximum number in array*/
122
123      for(i=0;i<n;i++)
124      {
125          if(array[i]>max)
126              max=array[i];
127      }
128
129      return max;
130  }
131
132  /*Finds second max number in array*/
133  int second_max_array(const int array[], int n)
134  {
135
136      int i,
137          max, /*Maximum number in array*/
138          second_max=0; /*Maximum second number in array*/
139
140      max=max_array(array, n); /*Calls max array function for give maximum number*/
141
142      for(i=0;i<n;i++)
143      {
144          if(array[i]>second_max&&array[i]<max)
```

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145             second_max=array[i];
146     }
147
148
149     return second_max;
150
151 }
152
153 /*Finds sum of all array*/
154 int sum_all_array (const int array[], int n)
155 {
156
157     int i,
158         sum=0; /*Sum of all array*/
159
160         for(i=0;i<n;i++)
161             sum+=array[i];
162
163     return sum;
164
165
166 }
167
168 /*Finds how many times the number entered is repeated*/
169 int count_array(const int array[], int n, int value)
170
171 {
172
173     int i,
174         count=0; /*Counts how many times the number entered is repeated*/
175
176     for(i=0;i<n;i++)
177     {
178         if(array[i]==value)
179             count++;
180     }
181
182     return count;
183
184 }
185
186 /*Finds the location of the number entered and prints the screen*/
187 /*If have more than one of the same number, prints the screen first place*/
188 bool search_array(const int array[], int n, int value)
189 {
190
191     int i,
192         count=0; /*Counts whether number is or not*/
193
194     for(i=0;i<n;i++)
195     {
196         if(array[i]==value&&count==0)
197         {
198             printf("\n%d is at [%d]",value, i);
199             count++;
200         }
201     }
202
203     /*If there are number entered return TRUE otherwise return FALSE*/
204     if(count==1)
205         return TRUE;
206     else
207         return FALSE;
208
209 }
210
211 /*##############################################################################*/
212 /*                End of HW05_Furkan_Erdol_131044065_part2.c                    */
213 /*##############################################################################*/
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