C_96 → Passing an Array as an argument to function in C

Array → When we want to pass list of values to a function we use array.

Syntax:-

(returntype: int; datatype: int)

```
int function_name(int []);
```

function declaration ← `returntype function_name(datatype []);`

function call ← `function_name(array_name);`

`returntype function_name(datatype arrayname[]);`

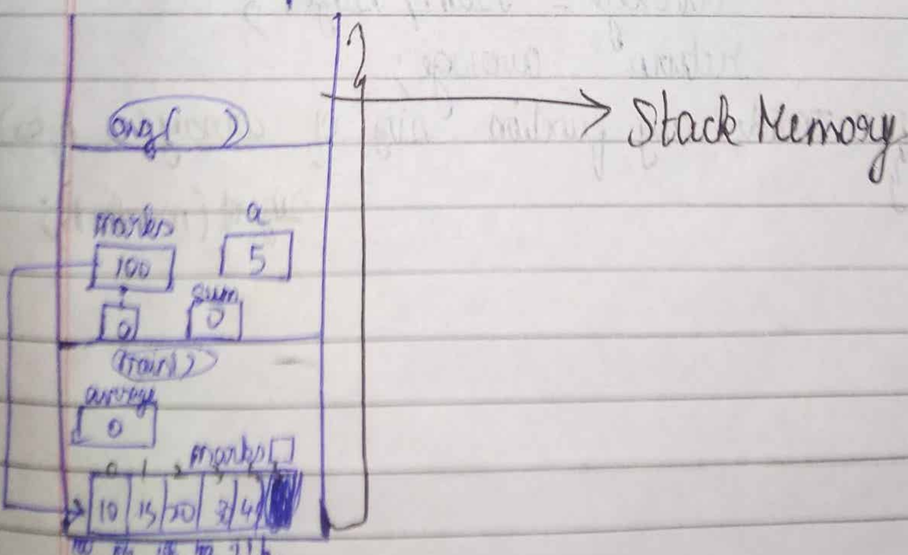
Eg:- → int avg(int []); ⇒ function declaration

Example Program:

```
int avg ( int [ ], int );

void main()
{
    int average = 0;
    int marks[5] = {10, 15, 20, 30, 45};
  average = avg(marks, 5);          // 5 -> array size

    printf ("Average is %d", average);
}   printf ("%d", sizeof(marks));   -> 20bytes

int avg ( int marks[ ], int a);     // marks[ ] acts like pointer: call by reference; a: call by value
{
  int sum=0, average =0, i;
   for( i=0; i<a ; i++)
    {
      sum = sum + marks[i];
    }
       average = sum / a;
  return average;
}
    printf ("%d", sizeof(marks));  -> 4 bytes
```

base address is passed & it acts like pointer inside memory

Eg:- call by reference

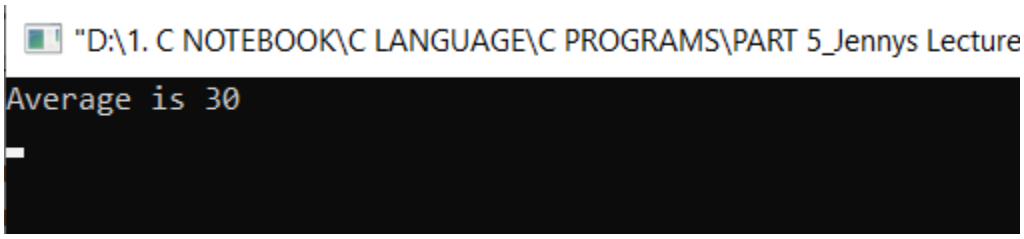


Program

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

int avg( int [], int );

void main()
{
  int marks[5] = { 10, 20, 30, 40, 50 };
  int average = 0;
  int size;
   size = sizeof(marks) / sizeof(marks[0]);
   average = avg(marks, size);
    printf(" Average = %d", average);
    printf("Inside main size of
                array is(in bytes): %d", sizeof(marks));
}

int avg( int marks1[], int size1)
{
    int i, sum = 0, average = 0;
    for(i=0; i< size1; i++)
    {
          sum = sum + marks[i];
    }
     average = sum / size1;
    return average;
printf(" Inside avg function size of array(in bytes) is %d",
                                    sizeof(marks1));
}
```

PROBLEM 1:

```c
#include <stdio.h>
#include <stdlib.h>
/** 1 - PASSING ARRAY AS AN ARGUMENT TO FUNCTION **/
int marks(int[],int);
int main()
{
 int marks[]={10,20,30,40,50};
 int size=0,average=0;
 size=sizeof(marks)/sizeof(marks[0]);
 average=avg(marks,size);
 printf("Average is %d\n",average);
 getch();
}
int avg(int marks1[],int size1)
{
 int i,sum=0,average=0;
 for(i=0;i<size1;i++)
 {
  sum=sum+marks1[i];
 }
 average=sum/size1;
 return average;
}
```



```c
#include <stdio.h>
#include <stdlib.h>
/** 1 - PASSING ARRAY AS AN ARGUMENT TO FUNCTION **/
int marks(int*,int); //or int marks(int[],int)
int main()
{
 int marks[]={10,20,30,40,50};
 int size=0,average=0;
 size=sizeof(marks)/sizeof(marks[0]);
 average=avg(marks,size); //we are passing only base address of marks
 printf("Average is %d\n",average);
 getch();
}
int avg(int* marks1,int size1) //or int avg(int marks1[],int size1)
{
 int i,sum=0,average=0;
 for(i=0;i<size1;i++)
 {
  sum=sum+marks1[i];
 }
 average=sum/size1;
 return average;
}
```