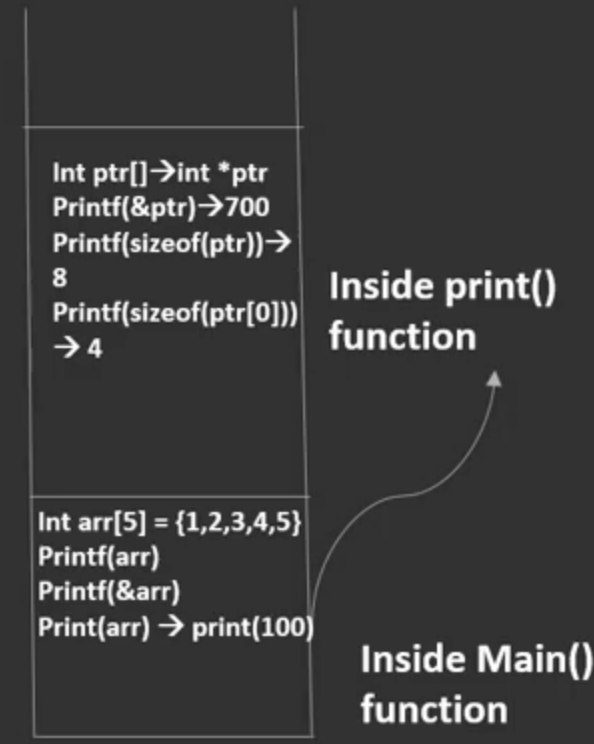
Some prerequisite …

```c
//C program
#include <stdio.h>
void print(int ptr[]);

void print(int ptr[])
{
    printf("The value of ptr inside print function is: %d\n",ptr);
    printf("The address of ptr inside print function is: %d\n",&ptr);
    printf("The size of ptr will be: %d\n",sizeof(ptr));
    printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));

}
int main()
{
    int arr[5] = {1,2,3,4,5};
    printf("The value of arr inside main function is: %d\n",arr);
    printf("The address of arr inside main function is: %d\n",&arr);
    print(arr);
}
```

Arr[0] =1	Arr[1] =2	Arr[2] =3	Arr[3] =4	Arr[4] =5
100	104	108	112	116



Ptr = 100
700

print(int ptr[]) and print(int *ptr) are same

ptr[0] → *ptr → *(100) →1
sizeof(1) →4
ptr[i] →*(ptr+i)

Stack memory

Example …

```c
// C program to demonstrate pointer to pointer
#include <stdio.h>
#include <stdlib.h>
void print(int arr[]);

void print(int arr[])
{
    int size = (sizeof(arr)/sizeof(arr[0]));
    printf("The size of array inside the print function is: %d\n",size);
    for(int i=0;i<size;i++)
    {
        printf("%d\n",arr[i]);
    }
}
int main()
{
    int arr[5] = {1,2,3,4,5};
    int size = (sizeof(arr)/sizeof(arr[0]));
    printf("The size of array inside the main function is: %d\n",size);
    print(arr);
}
```

Output:

```
5
2

1
2
```

Example …

```c
// C program
#include <stdio.h>
#include <stdlib.h>
void print(int arr[]);

void print(int arr[],int size)
{

    printf("The size of array inside the called function is: %d\n",size);
    for(int i=0;i<size;i++)
    {
        printf("%d\n",arr[i]);
    }
}
int main()
{
    int arr[5] = {1,2,3,4,5};
    int size = (sizeof(arr)/sizeof(arr[0]));
    printf("The size of array inside the main function is: %d\n",size);
    print(arr,size);
}
```

Output:

```
5
5

1
2
3
4
5
```

Final decision:

In C programming language, array parameters are treated as pointers. Because It is inefficient to copy the array data in terms of both memory and time and most of the times, when we pass an array our intention is to just tell the array we interested in, not to create a copy of the array.

Hence all the array parameters are treated as pointers.

From Beginning | From Current Slide | Present Online | Custom Slide Show — Start Slide Show

Set Up Slide Show | Hide Slide | Rehearse Timings | Record Slide Show | Play Narrations | Use Timings | Show Media Controls — Set Up

Monitor: Automatic | Use Presenter View — Monitors

1


2


3


4


5


6


Click to add notes

Final decision:

In C programming language, array parameters are treated as pointers. Because It is inefficient to copy the array data in terms of both memory and time and most of the times, when we pass an array our intention is to just tell the array we interested in, not to create a copy of the array.

Hence all the array parameters are treated as pointers.

Click to add notes

AutoSave Off | Pointers_Basic - Saved to this PC | Vishal Gulia

File Home Insert Design Transitions Animations Slide Show Review View Help Storyboarding Tell me what you want to do | Share | Comments

From Beginning | Play Narrations | Monitor: Automatic | Use Presenter View | Show Media Controls

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

basic.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",ptr);
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr);
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

Final decision:

In C programming language, array parameters are treated as pointers. Because It is inefficient to copy the array data in terms of both memory and time and most of the times, when we pass an array our intention is to just tell the array we interested in, not to create a copy of the array.

Hence all the array parameters are treated as pointers.

Click to add notes

Slide 5 of 6

C++ source file | length : 560 lines : 21 | Ln : 8 Col : 30 Sel : 0 | 0 | Windows (CR LF) UTF-8 INS

3:51 PM 3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2  //C program
3  #include <stdio.h>
4  void print(int ptr[]);
5
6  void print(int ptr[])
7  {
8      printf("The value of ptr inside print function is: %d\n",ptr);
9      printf("The address of ptr inside print function is: %d\n",&ptr);
10     printf("The size of ptr will be: %d\n",sizeof(ptr));
11     printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13 }
14 int main()
15 {
16     int arr[5] = {1,2,3,4,5};
17     printf("The value of arr inside main function is: %d\n",arr);
18     printf("The address of arr inside main function is: %d\n",&arr);
19     print(arr);
20 }
21
```

C++ source file | length : 560 | lines : 21 | Ln : 8 | Col : 30 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2  //C program
3  #include <stdio.h>
4  void print(int ptr[]);
5
6  void print(int ptr[])
7  {
8      printf("The value of ptr inside print function is: %d\n",ptr);
9      printf("The address of ptr inside print function is: %d\n",&ptr);
10     printf("The size of ptr will be: %d\n",sizeof(ptr));
11     printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13 }
14 int main()
15 {
16     int arr[5] = {1,2,3,4,5};
17     printf("The value of arr inside main function is: %d\n",arr);
18     printf("The address of arr inside main function is: %d\n",&arr);
19     print(arr);
20 }
21
```

C++ source file | length : 560 | lines : 21 | Ln : 8 | Col : 30 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp

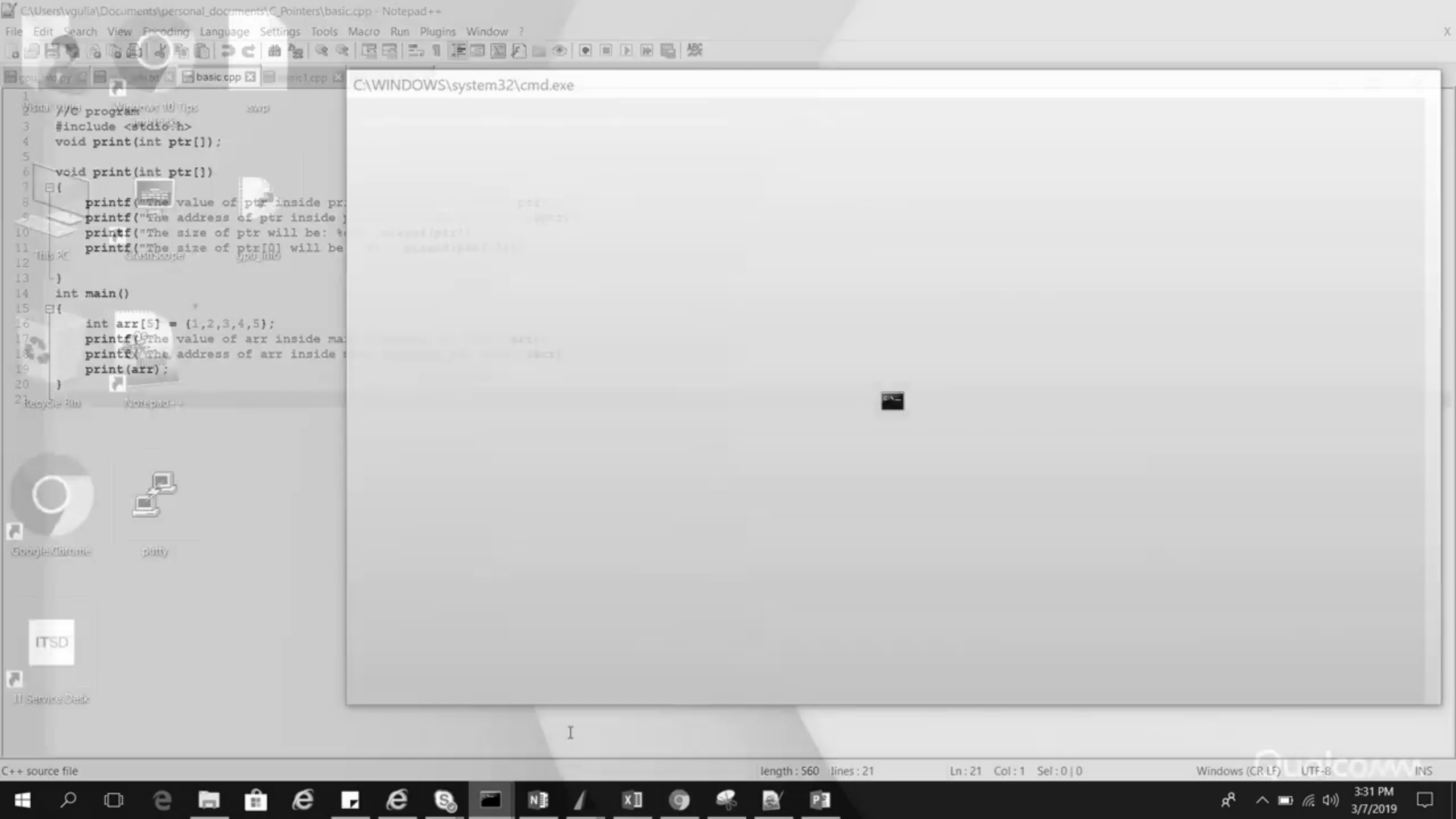
```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside pr
9       printf("The address of ptr inside
10      printf("The size of ptr will be: %
11      printf("The size of ptr[0] will be
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside ma
18      printf("The address of arr inside
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

C:\WINDOWS\system32\cmd.exe | C:\WINDOWS\system32\c...

C++ source file | length : 560 lines : 21 | Ln : 21 Col : 1 Sel : 0 | 0 | Windows (CR LF) UTF-8 INS

3:31 PM
3/7/2019


C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
basic.cpp
//C program
#include <stdio.h>
void print(int ptr[]);
void print(int ptr[])
{
printf("The value of ptr inside pr
printf("The address of ptr inside
printf("The size of ptr will be: %
printf("The size of ptr[0] will be
}
int main()
{
int arr[5] = {1,2,3,4,5};
printf("The value of arr inside ma
printf("The address of arr inside
print(arr);
}
C:\WINDOWS\system32\cmd.exe
C++ source file
length : 560 lines : 21
Ln : 21 Col : 1 Sel : 0 | 0
Windows (CR LF) UTF-8 INS
3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",ptr);
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr);
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print func
9       printf("The address of ptr inside print fu
10      printf("The size of ptr will be: %d\n",siz
11      printf("The size of ptr[0] will be: %d\n"
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main funct
18      printf("The address of arr inside main fun
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4
C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function
9       printf("The address of ptr inside print functi
10      printf("The size of ptr will be: %d\n",sizeof(p
11      printf("The size of ptr[0] will be: %d\n",sizec
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function i
18      printf("The address of arr inside main function
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4
C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is
9       printf("The address of ptr inside print function
10      printf("The size of ptr will be: %d\n",sizeof(ptr
11      printf("The size of ptr[0] will be: %d\n",sizeof(
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is:
18      printf("The address of arr inside main function i
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^
C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\
9       printf("The address of ptr inside print function is: %
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n
18      printf("The address of arr inside main function is: %d
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",pt
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",ptr);
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr);
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^
C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",ptr);
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr);
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",ptr);
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr);
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",ptr);
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr);
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",ptr);
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr);
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",ptr);
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr);
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 lines : 21 | Ln : 21 Col : 1 Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2   //C program
3   #include <stdio.h>
4   void print(int ptr[]);
5
6   void print(int ptr[])
7   {
8       printf("The value of ptr inside print function is: %d\n",ptr);
9       printf("The address of ptr inside print function is: %d\n",&ptr);
10      printf("The size of ptr will be: %d\n",sizeof(ptr));
11      printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13  }
14  int main()
15  {
16      int arr[5] = {1,2,3,4,5};
17      printf("The value of arr inside main function is: %d\n",arr);
18      printf("The address of arr inside main function is: %d\n",&arr);
19      print(arr);
20  }
21
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 560 | lines : 21 | Ln : 21 | Col : 1 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:31 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1
2  //C program
3  #include <stdio.h>
4  void print(int ptr[]);
5
6  void print(int ptr[])
7  {
8      printf("The value of ptr inside print function is: %d\n",ptr);
9      printf("The address of ptr inside print function is: %d\n",&ptr);
10     printf("The size of ptr will be: %d\n",sizeof(ptr));
11     printf("The size of ptr[0] will be: %d\n",sizeof(ptr[0]));
12
13 }
14 int main()
15 {
16     int arr[5] = {1,2,3,4,5};
17     printf("The value of arr inside main function is: %d\n",arr);
18     printf("The address of arr inside main function is: %d\n",&arr);
19     print(arr);
20 }
21
```

C++ source file | length : 526 | lines : 21 | Ln : 21 | Col : 2 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:32 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic1.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1  // C program to demonstrate pointer to pointer
2  #include <stdio.h>
3  #include <stdlib.h>
4  void print(int arr[]);
5
6  void print(int arr[])
7  {
8      int size = (sizeof(arr)/sizeof(arr[0]));
9      printf("The size of array inside the print function is: %d\n",size);
10     for(int i=0;i<size;i++)
11     {
12         printf("%d\n",arr[i]);
13     }
14 }
15 int main()
16 {
17     int arr[5] = {1,2,3,4,5};
18     int size = (sizeof(arr)/sizeof(arr[0]));
19     printf("The size of array inside the main function is: %d\n",size);
20     print(arr);
21 }
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 526 | lines : 21 | Ln : 14 | Col : 2 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:32 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic2.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
// C program to demonstrate pointer to pointer
#include <stdio.h>
#include <stdlib.h>
void print(int arr[]);

void print(int arr[],int size)
{

    printf("The size of array inside the print function is: %d\n",size);
    for(int i=0;i<size;i++)
    {
        printf("%d\n",arr[i]);
    }
}
int main()
{
     int arr[5] = {1,2,3,4,5};
     int size = (sizeof(arr)/sizeof(arr[0]));
     printf("The size of array inside the main function is: %d\n",size);
     print(arr,size);
}

```

C++ source file | length : 503 | lines : 22 | Ln : 20 | Col : 22 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:32 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic2.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1  // C program to demonstrate pointer to pointer
2  #include <stdio.h>
3  #include <stdlib.h>
4  void print(int arr[]);
5
6  void print(int arr[],int size)
7  {
8
9      printf("The size of array inside the print function is: %d\n",size);
10     for(int i=0;i<size;i++)
11     {
12         printf("%d\n",arr[i]);
13     }
14 }
15 int main()
16 {
17     int arr[5] = {1,2,3,4,5};
18     int size = (sizeof(arr)/sizeof(arr[0]));
19     printf("The size of array inside the main function is: %d\n",size);
20     print(arr,size);
21 }
22
```

C:\WINDOWS\system32\cmd.exe

```
C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic.cpp -o basic
basic.cpp: In function 'void print(int*)':
basic.cpp:10:54: warning: 'sizeof' on array function parameter 'ptr' will return size of 'int*' [-Wsizeof-array-argument]
     printf("The size of ptr will be: %d\n",sizeof(ptr));
                                                      ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic1.cpp -o basic1
basic1.cpp: In function 'void print(int*)':
basic1.cpp:8:27: warning: 'sizeof' on array function parameter 'arr' will return size of 'int*' [-Wsizeof-array-argument]
     int size = (sizeof(arr)/sizeof(arr[0]));
                           ^
basic1.cpp:6:20: note: declared here
 void print(int arr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic1.exe
The size of array inside the main function is: 5
The size of array inside the print function is: 2
1
2

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 503 | lines : 22 | Ln : 11 | Col : 6 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:32 PM
3/7/2019

C:\Users\vgulia\Documents\personal_documents\C_Pointers\basic2.cpp - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

gpu_info.py | gpu_info.txt | basic.cpp | basic1.cpp | basic2.cpp

```
1  // C program to demonstrate pointer to pointer
2  #include <stdio.h>
3  #include <stdlib.h>
4  void print(int arr[]);
5
6  void print(int arr[],int size)
7  {
8
9      printf("The size of array inside the print function is: %d\n",size);
10     for(int i=0;i<size;i++)
11     {
12         printf("%d\n",arr[i]);
13     }
14 }
15 int main()
16 {
17     int arr[5] = {1,2,3,4,5};
18     int size = (sizeof(arr)/sizeof(arr[0]));
19     printf("The size of array inside the main function is: %d\n",size);
20     print(arr,size);
21 }
22
```

C:\WINDOWS\system32\cmd.exe

```
                                                    ^
basic.cpp:6:20: note: declared here
 void print(int ptr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic.exe
The value of arr inside main function is: 6422064
The address of arr inside main function is: 6422064
The value of ptr inside print function is: 6422064
The address of ptr inside print function is: 6422032
The size of ptr will be: 8
The size of ptr[0] will be: 4

C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic1.cpp -o basic1
basic1.cpp: In function 'void print(int*)':
basic1.cpp:8:27: warning: 'sizeof' on array function parameter 'arr' will return size of 'int*' [-Wsizeof-array-argument]
     int size = (sizeof(arr)/sizeof(arr[0]));
                           ^
basic1.cpp:6:20: note: declared here
 void print(int arr[])
                    ^

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic1.exe
The size of array inside the main function is: 5
The size of array inside the print function is: 2
1
2

C:\Users\vgulia\Documents\personal_documents\C_Pointers>g++ basic2.cpp -o basic2

C:\Users\vgulia\Documents\personal_documents\C_Pointers>basic2.exe
The size of array inside the main function is: 5
The size of array inside the print function is: 5
1
2
3
4
5

C:\Users\vgulia\Documents\personal_documents\C_Pointers>
```

C++ source file | length : 503 | lines : 22 | Ln : 11 | Col : 6 | Sel : 0 | 0 | Windows (CR LF) | UTF-8 | INS

3:33 PM
3/7/2019

1


2

3

4

5

6


Final decision:

In C programming language, array parameters are treated as pointers. Because It is inefficient to copy the array data in terms of both memory and time and most of the times, when we pass an array our intention is to just tell the array we interested in, not to create a copy of the array.

Hence all the array parameters are treated as pointers.

Click to add notes

2

3

4

5

6

Final decision:

In C programming language, array parameters are treated as pointers. Because It is inefficient to copy the array data in terms of both memory and time and most of the times, when we pass an array our intention is to just tell the array we interested in, not to create a copy of the array.

Hence all the array parameters are treated as pointers.

Click to add notes

AutoSave Off | Pointers_Basic - Saved to this PC | Vishal Gulia

File Home Insert Design Transitions Animations Slide Show Review View Help Storyboarding Tell me what you want to do | Share Comments

From Beginning | From Current Slide | Present Online | Custom Slide Show — Start Slide Show

Set Up Slide Show | Hide Slide | Rehearse Timings | Record Slide Show | Play Narrations | Use Timings | Show Media Controls — Set Up

Monitor: Automatic | Use Presenter View — Monitors

2

3

4

5

6

Click to add notes

Slide 6 of 6 | Notes | 76%

3:34 PM 3/7/2019