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# Practice Questions on C-Programming

Special class

Vishvadeep Gothi • Apr 4, 2023

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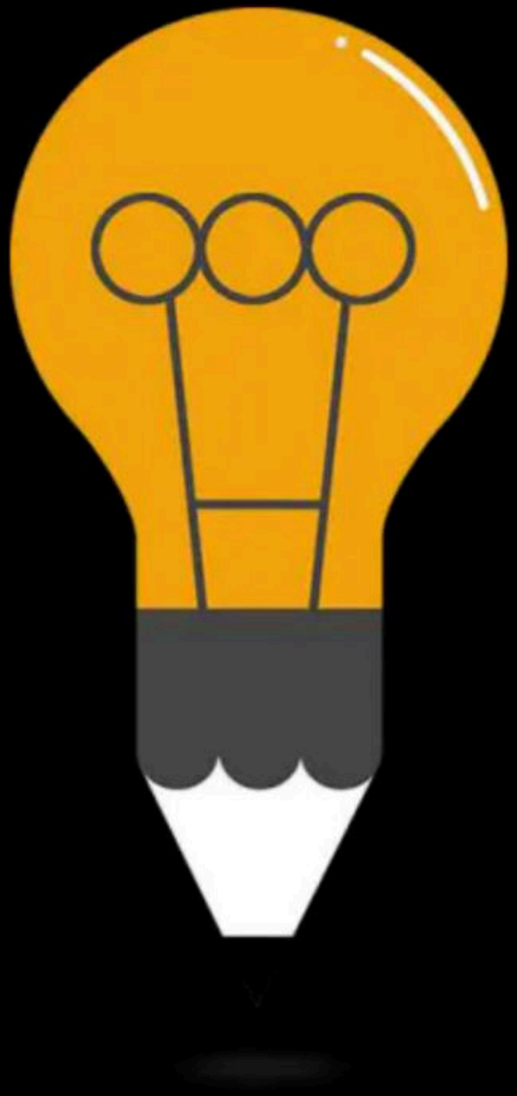

# C-Language Practice Questions

By: Vishvadeep Gothi

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# Question

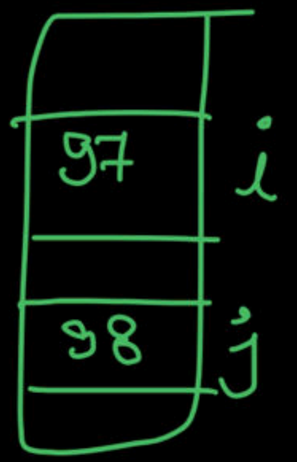
What is the output of the following programs-

```
#include<stdio.h>
int main(){
char i='a';
char j='b';
printf("%d", j-i);
return 0;
}
```

i = 'a'

j = 'b'

'b' – 'a' ⇒ 98 - 97 = 1




(a) Compilation error

(b) Runtime error

(c) 'b'-'a'

(d) 1

(e) 96

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```
char i = 'a';      97
char j = 'B';      66
printf("%d", i-j);   31 Ans
```

A => 65
B => 66
9 => 97

97 - 66 ⇒ 31

---

```
name  = "Vishvadeep";
name2 = "Vishvadeep";
```

} diff.

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# Question

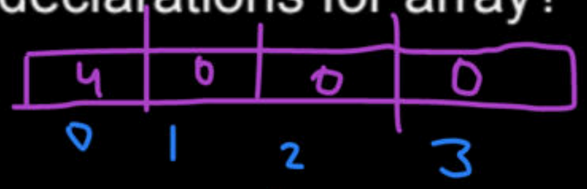
Which of the following are valid declarations for array?

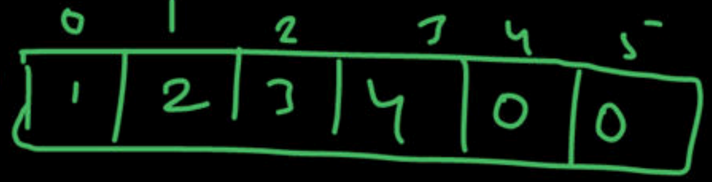
i. int a[4]={4};

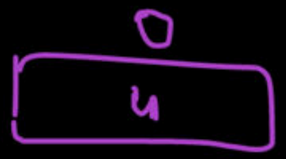
ii. int a[6]={1,2,3,4,5,6};

iii. int a[6]={1,2,3,4};

iv. int a[]={4};



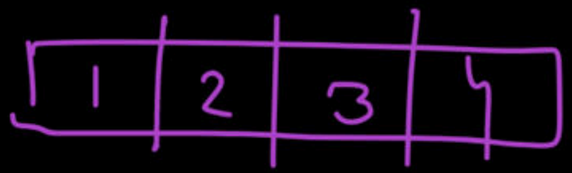

(a) I, ii & iv

(b) I, ii, iii & iv

(c) I, ii & iii

(d) I, iii & iv

int a[] = {1, 2, 3, 4};

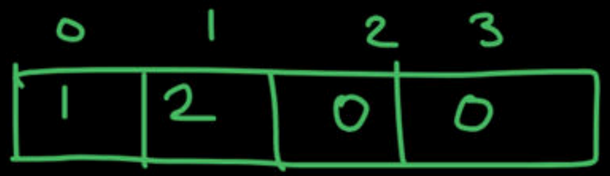


# Question

Predict the output of the following program assuming the size of integer is 2 Bytes:

```
void main(){
int a[4]={1,2};
printf("%d",sizeof(a));
printf("%d",sizeof(a)/sizeof(int));
}
```

→ array size in bytes



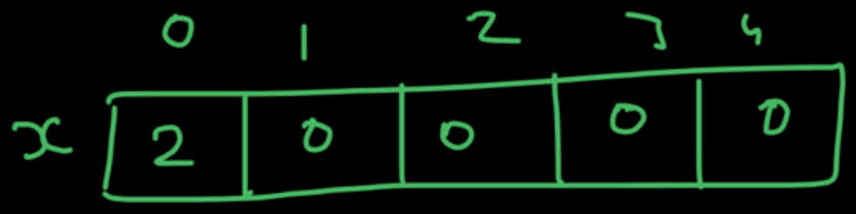

4 * 2B = 8 Bytes

(a) 6 1
(b) 12 1
(c) 4 1
(d) 8 4 ✓

# Question

Predict the output of the following program assuming the size of integer is 2 Bytes:

```
void main(){
int i;
int x[5]={2};
for(i=0;i<5;i++)
  printf("%d",x[i]);
}
```




(a) 2 followed by garbage values
(b) 2 0 0 0 0
(c) 2 1 1 1 1
(d) 2 2 2 2 2
(e) None of the above

20000

printf("%d ", x[i]);

2 0 0 0 0

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# Question

Let us assume an array ‘a’ which stores integers of size 4 Byte. Say, the integers are stored in increasing address fashion in the byte addressable memory starting from address 1000. What is the address where the value 40 gets stored?

0 1 2 3 4 5

int a[]={10,20,30,40,50,60};

(a) 1000
(b) 1008
(c) 1012
(d) 1006
(e) 1010

$$Loc(A[i]) = Base + size * i$$

$$= 1000 + 4 * 3$$

$$= 1012$$

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# Question

Assume address of first element is at 2000. If each element in an array is having 3 Bytes, then find the location of element 60.

0 1 2 3 4 5 6 7

int a[]={10,20,30,40,50,60,70,80};

$2000 + (3 * 5)$

(a) 2006
(b) 2012
(c) 2015
(d) 2010

$= 2015$

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Ques) Consider an array (int size = 2 bytes)

int A[ ] = { 4, 6, 2, 3, 9, 7, 5, 1 };

element 5 is stored on address 2040. The base address of array is?

Soln

$2040 = Base + 2 * 6$

$Base = 2040 - 12$

$= 2028$

Ques

char A[] = "GATE2023";

Size of each element = 1 Byte

element 'O' is stored on address = $(1010)_{10}$

what the following statement prints ?

printf("%u", A+2); 1007

Base = 1005

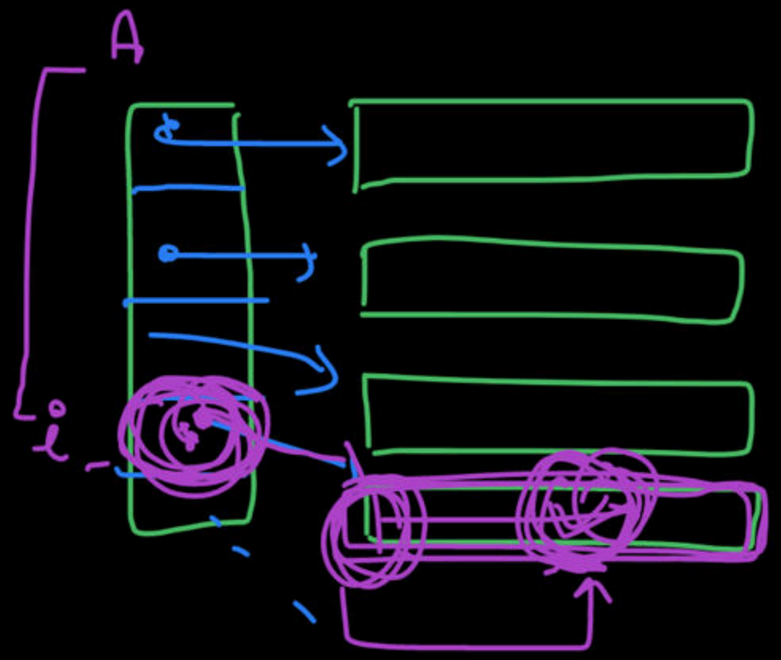
1010 = Base + 1*5

Base = 1005

# Question

If A is two-dimensional array, A[i][j] is evaluated as

(a) (A+i) + j
(b) (*A+i)+j
(c) (*(A+i)+j)
(d) *(*(A+i)+j)
(e) None of the above




A[i][j]

*(A+i)

*(*(A+i)+j)

A[i][0]

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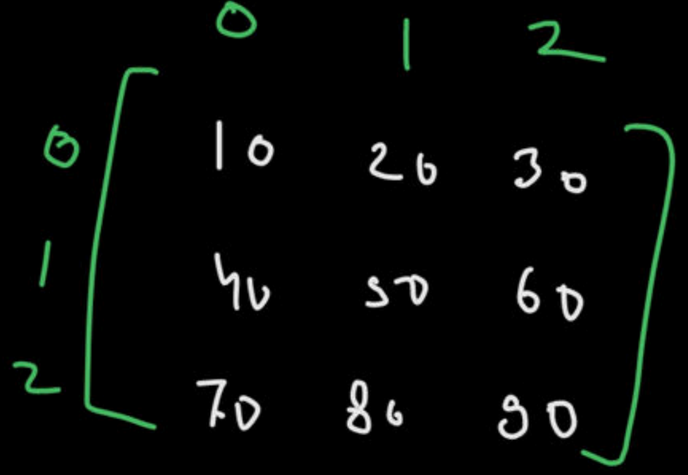
# Question

Predict the output of the following program:

```
void main(
{
int a[][3]={10,20,30,40,50,60,70,80,90};
printf("%d,%d",1[a][2],*1[a]);
}
```




(a) 60 40
(b) 80 40
(c) 80 20
(d) 60 20
(e) Compilation error

a[i][j] = i(a)[j]

*a[1] = *1[a]

= a[1][0]

# Question

m x n

Consider a declaration as following:
char a[200][250];

Assume the size of the character is 1 byte. The data gets stored in the memory in row major order and increasing address fashion starting from "X". What is the address of the element a[100][100] with zero based indexing?

(a) X+25100
(b) X+24849
(c) X+25099
(d) X+24850
(e) None of the above

Add.(A[i][j]) = Base + size * (i * n + j)

= X + 1 * [100 * 250 + 100]

= X + 25100

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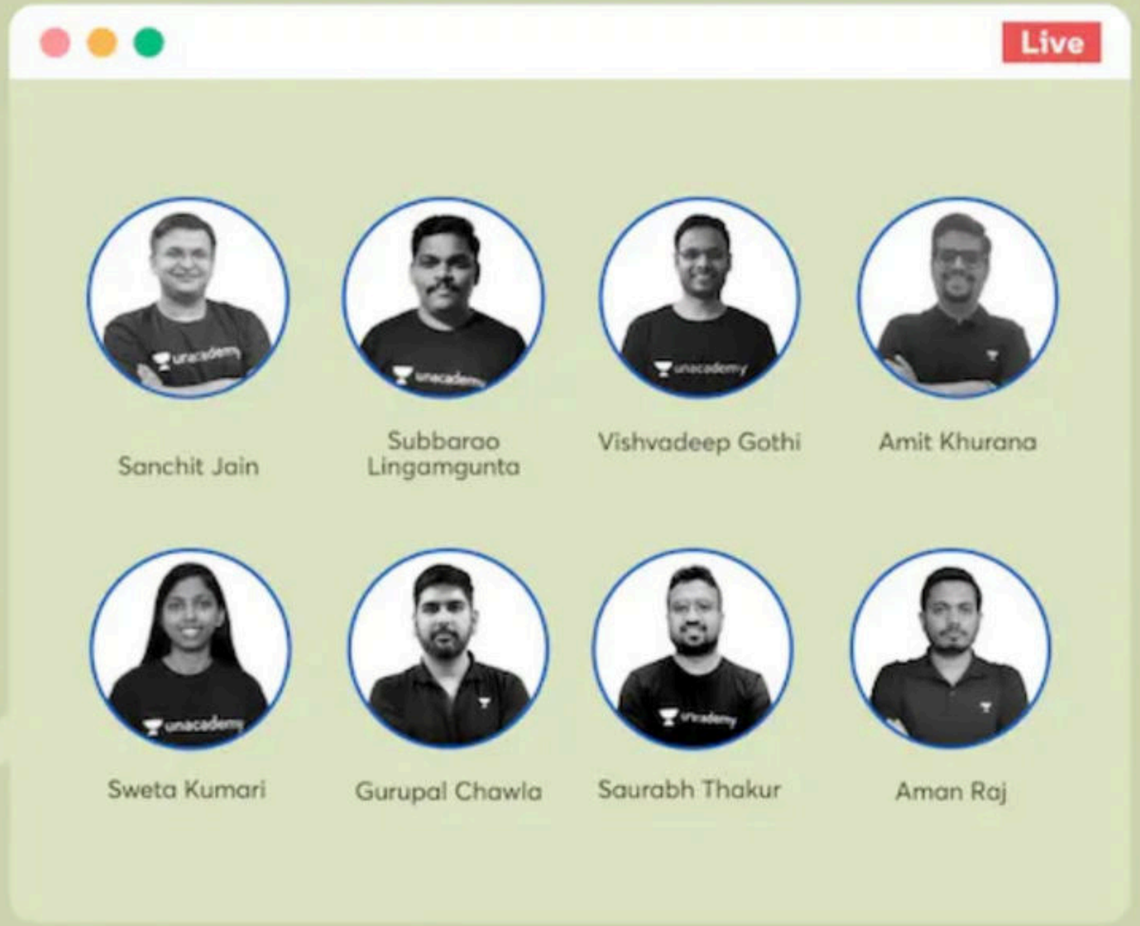


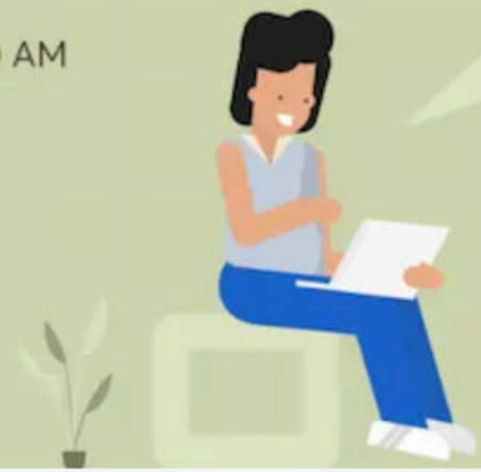

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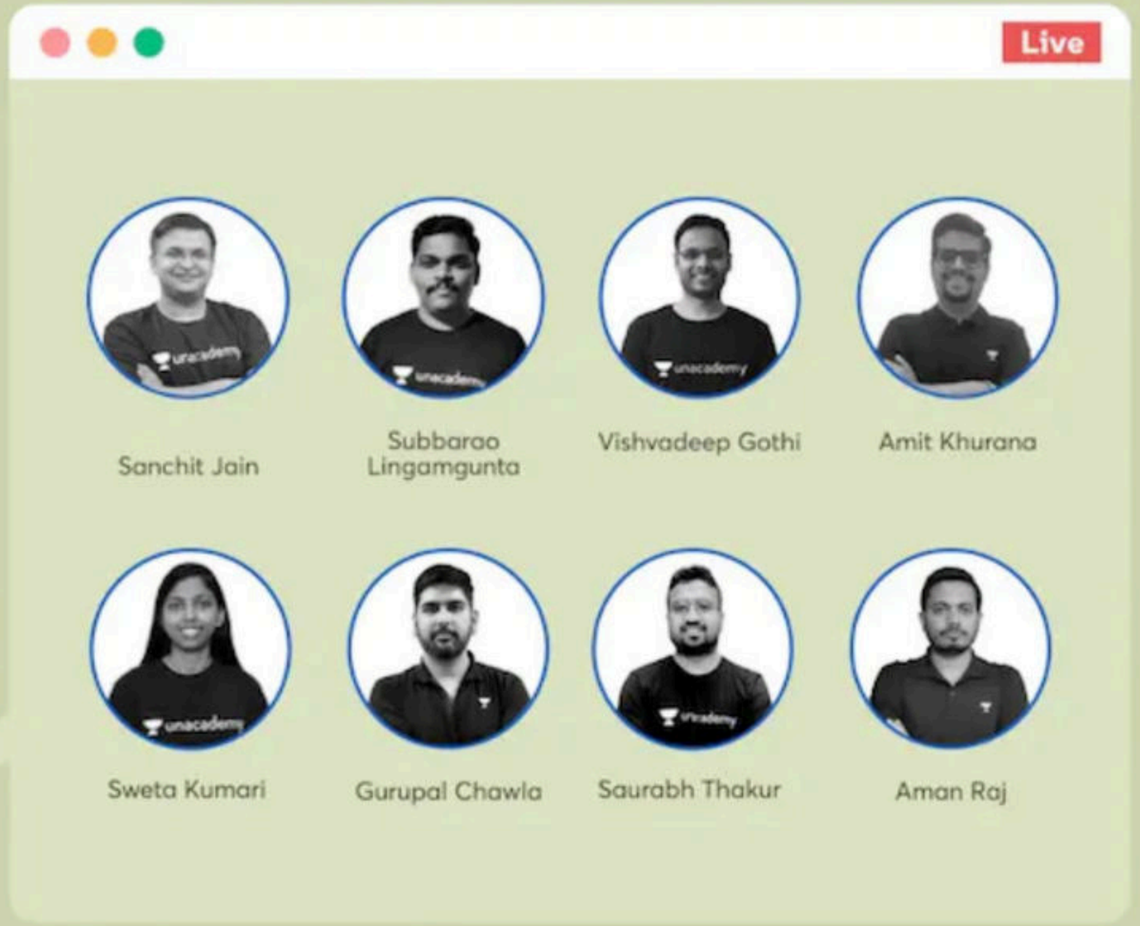


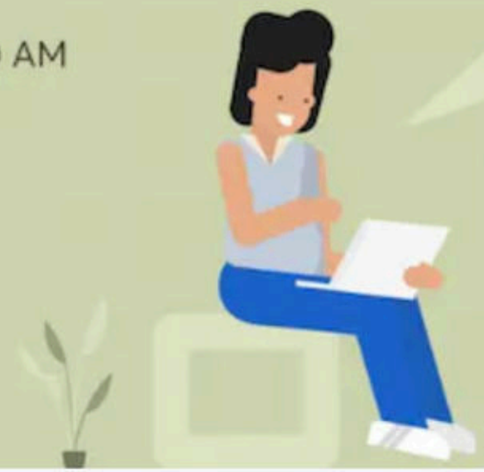

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