

## Assignment 6

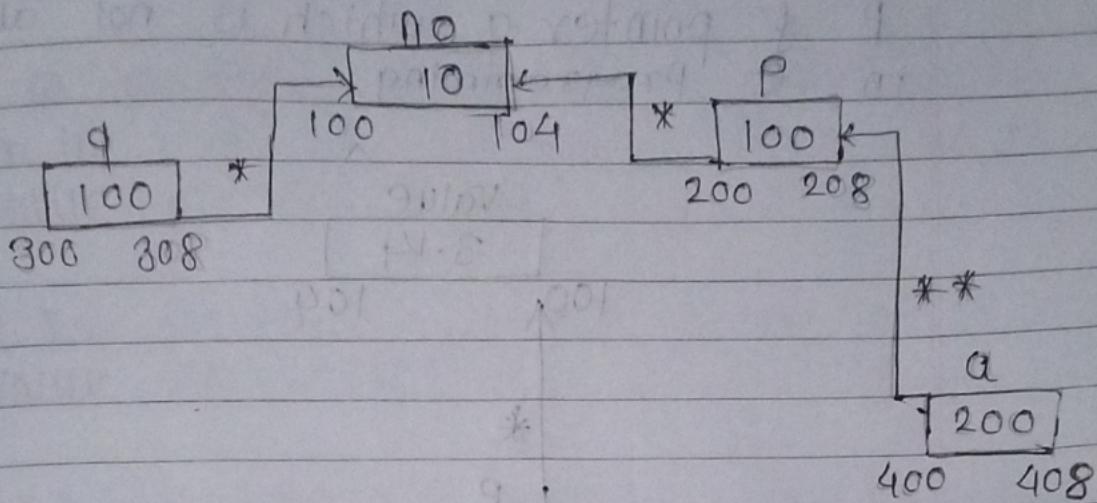
Q) Write the statement reading which describes below syntax and draw its diagrammatic layout.

1] int no = 10;  
int \* p = & no;  
int \* q = & no;  
int \*\* a = & p;

### Statement reading

- no is a variable having datatype integer & intialie with value 10
- p is a pointer which points to the int no & currently store the address of & no.
- q is a pointer which points to the int no & currently store the address of no.
- a is a pointer which points to the pointer p & currently store the address of p.

## Diagrammatic layout



2] float value = 3.14;  
 float \*p = &value;  
 float \*q = p;  
 float ans = \*p + \*q;

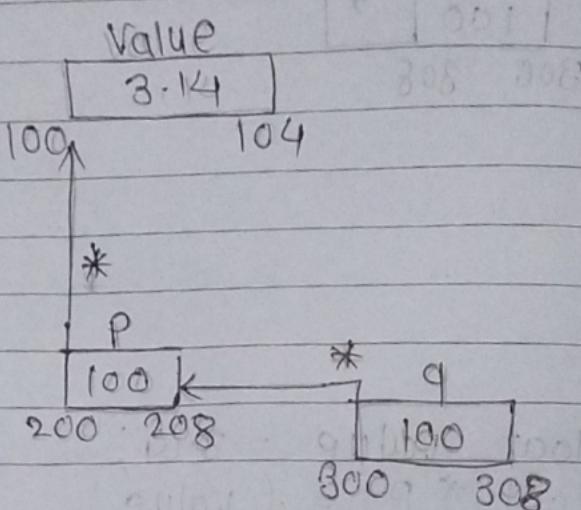
## Statement reading

- value is variable has datatype is float  
 & initialize with 3.14

- p is a pointer which points to float value  
 & currently store address of value

- q is pointer variable has which points  
 to p pointer & it holds the value of

- ans is variable having datatype float if store the addition of pointer p & pointer q which is not allowed in C programming



3) `int arr [] = {1, 2, 3, 4};  
 int * p = arr;  
 int * q = arr + 1;  
 int ans = *q - *p;`

Statement reading

- Array is one dimensional array  
 it contain 4 elements in it.

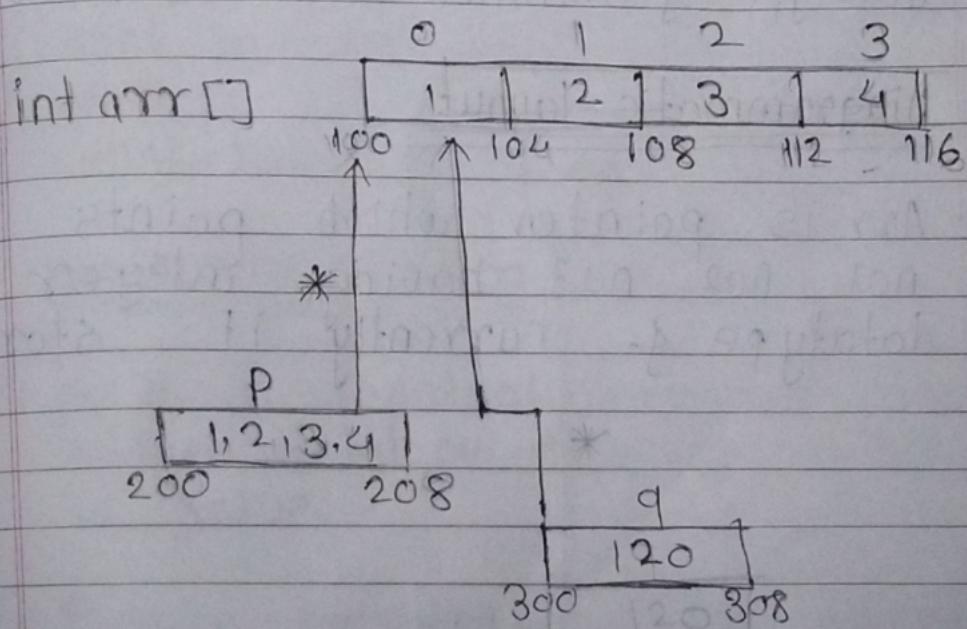
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Each element has integer datatype & initialize with 1, 2, 3, 4

- p is pointer var which points to int arr & currently store the value of arr position 4.

q is pointer which store the value is arr position 3.

ans is variable having datatype integer which stores the substraction of pointer p & pointer q.



4] int no1 = 10;  
 int no2 = 20;  
 int no3 = 30;  
 int \*Arr [] = {&no1, &no2, &no3};

### Statement reading

- no1 is a variable which datatype is integer & initialize with value 10

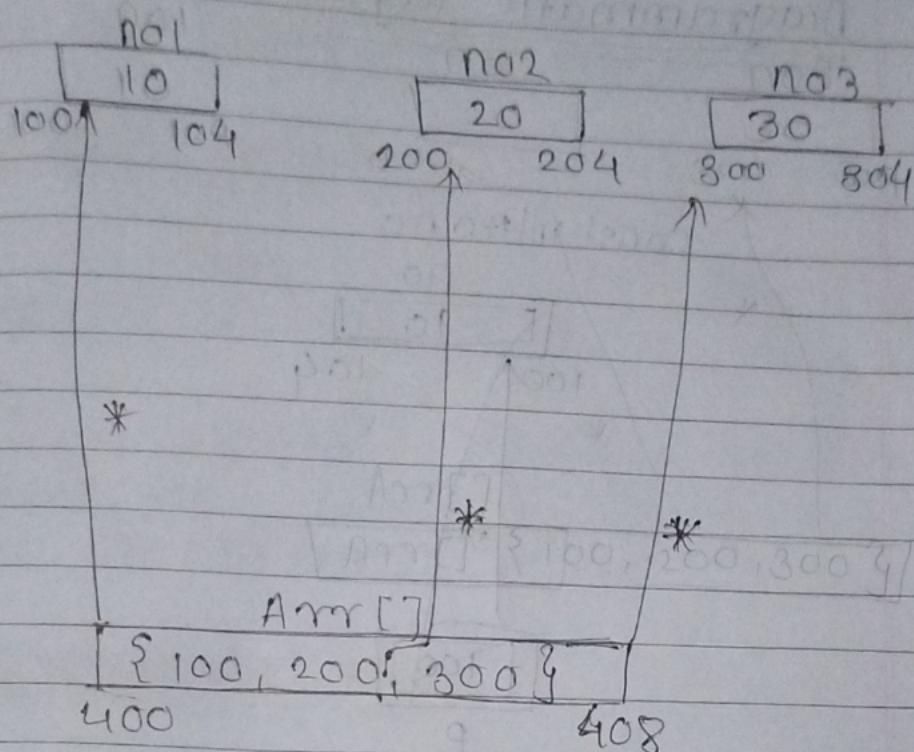
- no2 is a variable has integer datatype & initialize with value 20

- no3 is a variable has integer datatype & initialize with value 30.

### Diagrammatic layout

- Arr is pointer which points to no1, no2, no3 having integer datatype & currently it stores

## Diagrammatic layout



5] `const int no = 20;`

~~int \* p = &no;~~

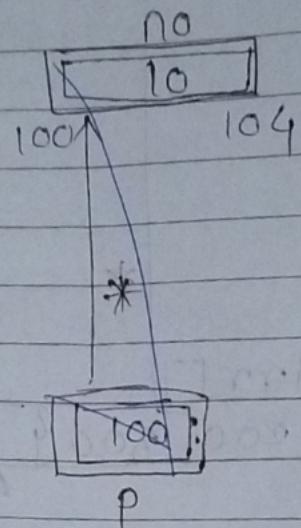
statement reading

- no is a constant variable having integer datatype initialize with 20 value.

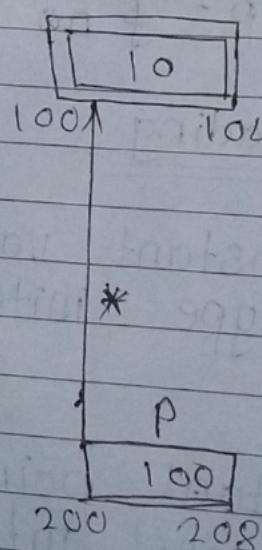
- P is a ~~constant~~ pointer which points to const int no & currently store the address of no.

## Diagrammatic layout

constant no



no



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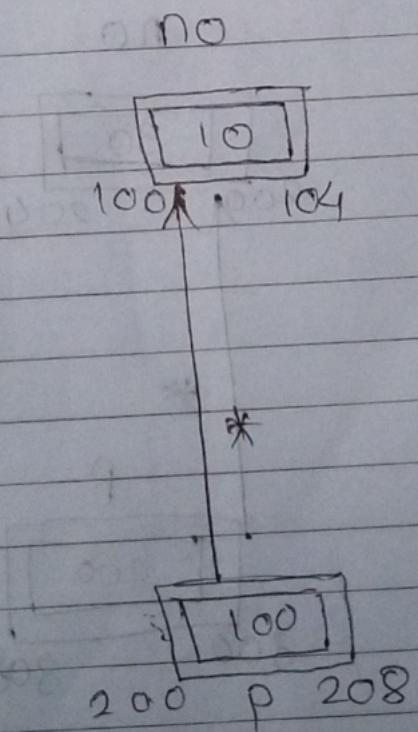
const int no = 10;  
const int \* const p = & no;

Statement reading

no is constant variable has integer datatype & initialize with 10

p is a constant pointer which points to const int no & currently store the address of no.

Diagrammatic layout



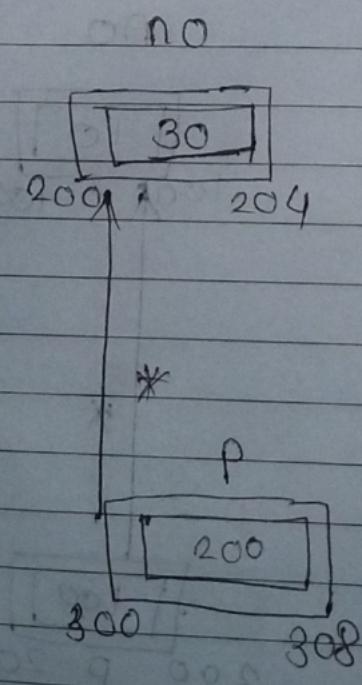
1] `const int no = 30;`  
`const int * const p = & no;`

statement reading

- no is variable of type integer  
 constant initialized with 30.

- P is a constant pointer which points  
 to integer constants & currently  
 holds the address of no.

Diagrammatic layout



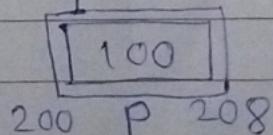
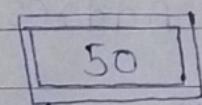
8) `const int no = 50;`  
`int const * const p = &no;`

statement reading

- no is variable of type integer  
 constant initialized with 11

- p is a constant pointer which points to integer constants & currently holds address of no

Diagrammatic layout



g] `char Arr[] = {'a', 'b', 'c', 'd', 'e'};`  
`char *p = Arr`  
`char *q = &Arr[0];`  
`char *r = &Arr[4];`

### Statement reading

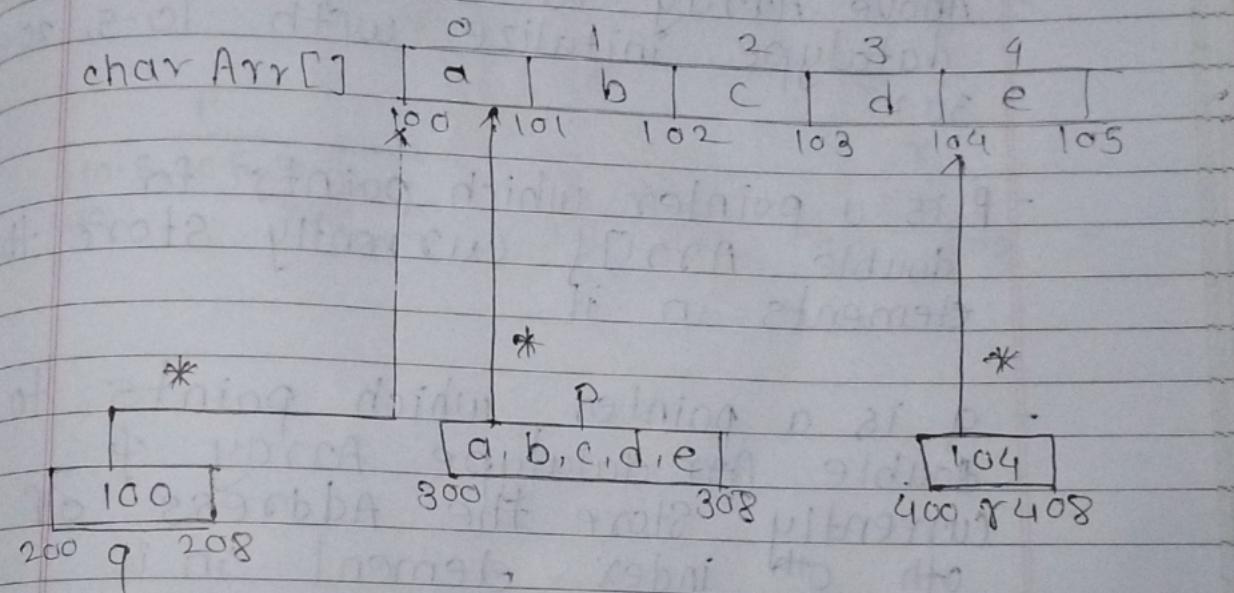
character

- Above Array is the ~~integer~~ datatype  
Array initialize with a, b, c, d, e.
- p is a pointer which points to character Array & currently store the value of character Array
- q is a pointer which points to char Array of 0th index & currently store the Address of Arr[0]
- r is a pointer which points to character Array & currently store the Address of Arr[4] 4th index of Array

|            |   |   |   |   |   |  |
|------------|---|---|---|---|---|--|
| char Arr[] | 0 | 1 | 2 | 3 | 4 |  |
|            | a | b | c | d | e |  |

100 101 102 103 104 105

Diagrammatic layout



Did

10)  $\text{double Arr}[] = \{10.5, 20.6, 30.2\};$

$\text{double } *p = \text{Arr}$

$\text{double } *q = &(\text{Arr}[0]);$

$\text{double } *r = &(\text{Arr}[2]);$

statement reading

- Above Array is Array of double datatype initialize with 10.5, 20.6, 30.2.

- p is a pointer which points to double Arr[] f currently store the elements in it.

- q, is a pointer which points to double Arr datatype Array & currently store the Address of 0th index element in ip.

- r is a pointer which points to double & Arr[] f currently store the Address of 2th element in array

10.5  
200

