

C Language

More about Pointers

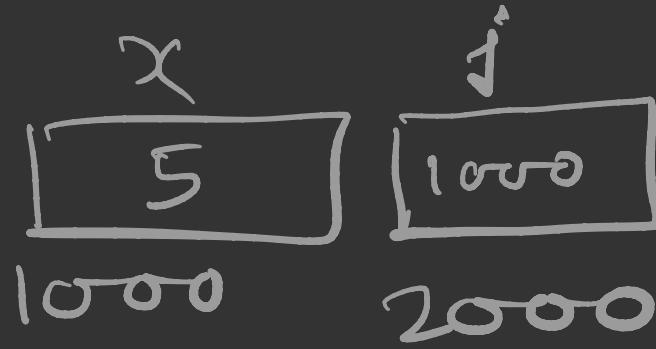


Saurabh Shukla (MySirG)

Agenda

- ① what is pointer?
- ② Size of pointer
- ③ Base address
- ④ Data type of pointer
- ⑤ Extended concept of pointers

```
int x = 5;  
int *j;  
j = &x;
```



j is a pointer variable

Two types of variables

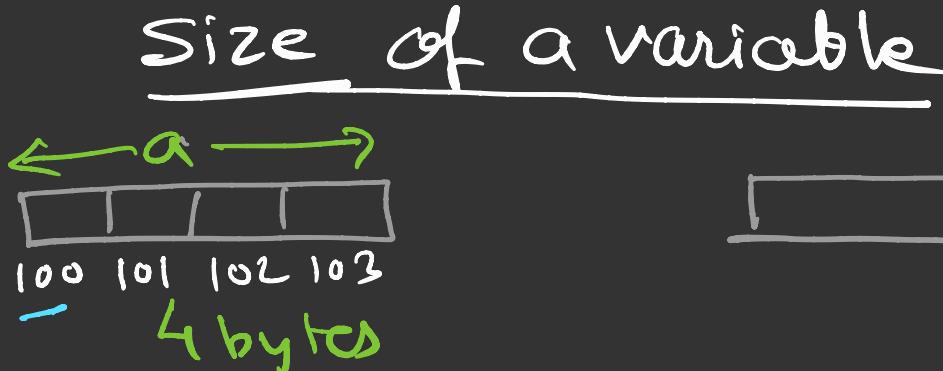
① Ordinary variables [value type variable]

② Pointer variables [Nullable type variable]

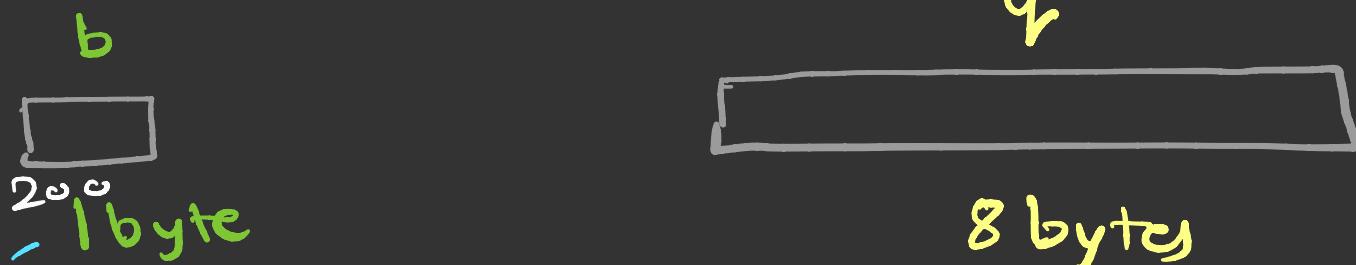
What is a Pointer?

Pointer is variable, which contains address of another variable.

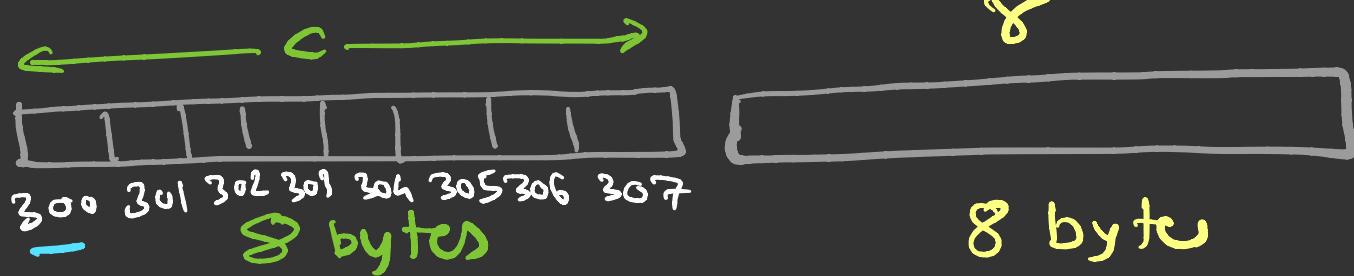
int a, *p;



char b, *q;



double c, *r;

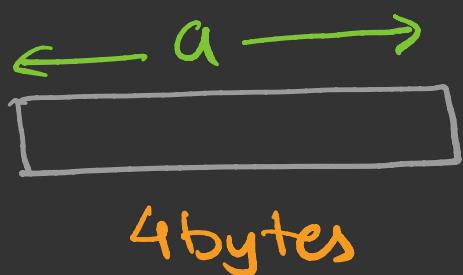


Base Address = Address of the first byte

Pointer always stores base address

Size of Pointer

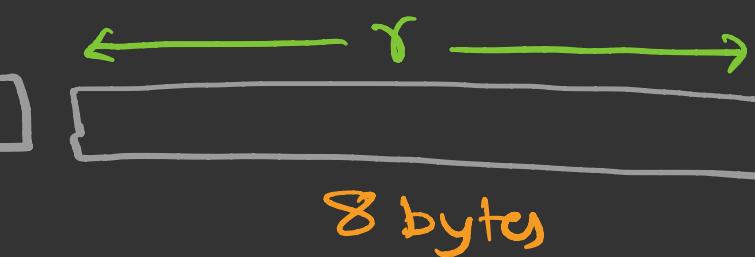
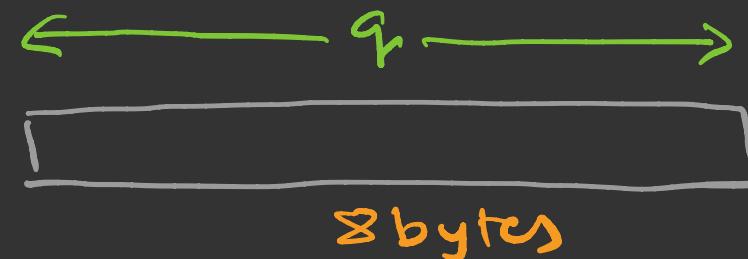
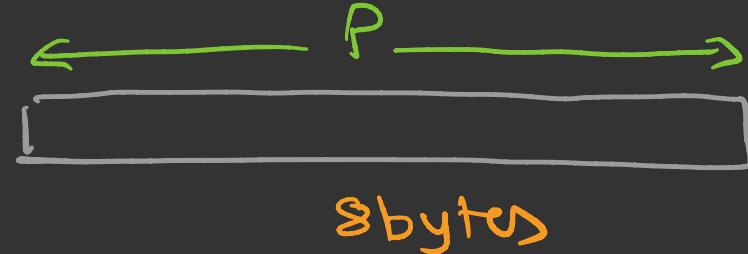
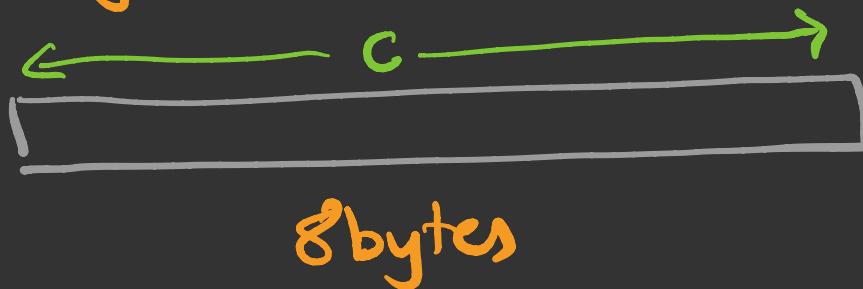
int a, *P ;



char b, *q;



double c, *s;

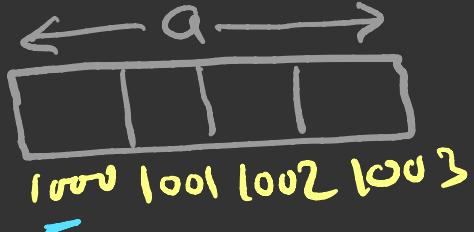


Ordinary variable ka size uske type par depend karta hai

Pointer variable kisi bhi type ka ho wo hamesha 8 bytes memory lega

Base Address

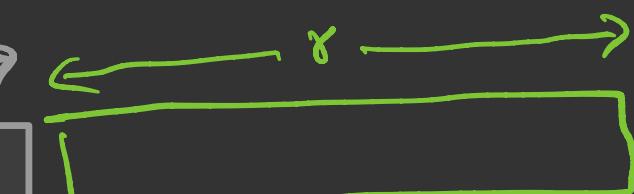
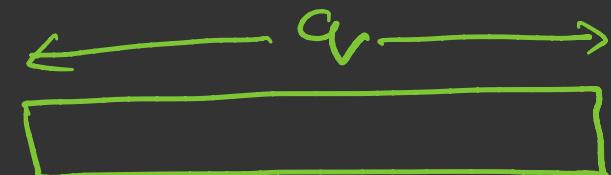
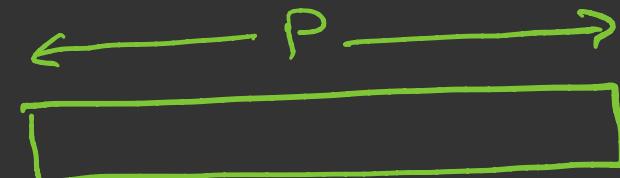
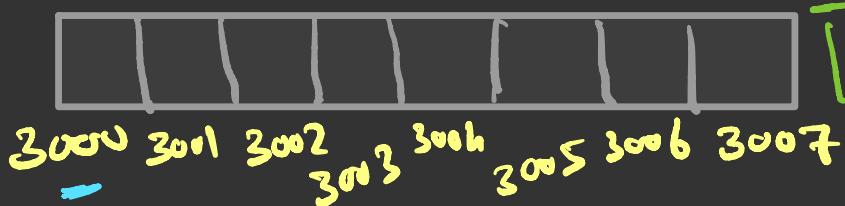
int a, *p;



char b, *q;



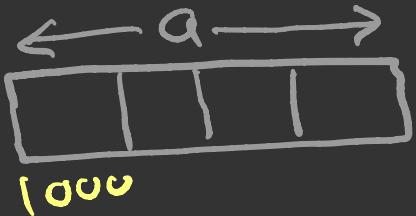
double c, *r;



Address of first byte of a variable is
known as base address
Pointer variable always stores base address

Data Type of Pointer

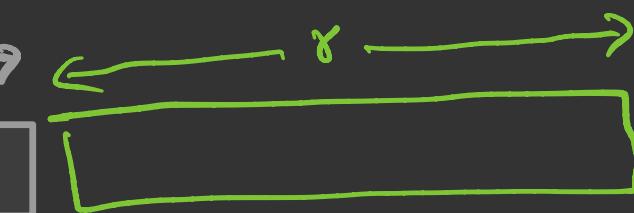
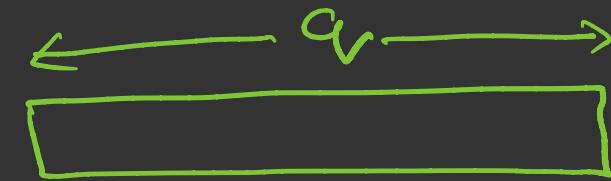
int a, *p;



char b, *q;



double c, *r;



q is a pointer to char variable

p is a pointer to int variable

r is a pointer to double variable

Extended Concept of Pointers

```
int x=5, *P, **q, ***r; x      P      q      r  
P=&x;                    5      1000     2000     3000  
                          1000     2000     3000     4000
```

q=&P;

r=&q;

```
printf("%d %d %d %d", P, &r, *q, &x);  
      1000 4000 1000 1000
```

```
printf("%d %d %d %d", **q, &q, ***&r, r);  
      1000 3000 2000 3000
```

```
printf("%d %d %d %d", ***r, ***q, *P, x);  
      5      5      5      5
```