

# POINTERS

variable that hold the address of another variable

datatype \*variable-name;

int \*a;

initialization (at compile time only)

int \*p = &a;

int \*p;

p = &a;

Q. WAP to input 2 no. and add them using pointer.

```
void main()
```

```
{
```

```
float a, b, sum, *p, *q;
```

```
printf("Enter value");
```

```
scanf("%f %f", &a, &b);
```

```
p = &a;
```

```
q = &b;
```

```
sum = *p + *q;
```

```
printf("%f", sum);
```

```
getch();
```

```
}
```



Q. main()

```
{
    int x, y;
    int *ptr;
```

x = 10;

ptr = &x;

y = \*ptr;

printf("%d", x); 10

printf("%d %u", x, &x); 10, 630

printf("%d %u", \*&x, &x); 10, 630

printf("%d %u", \*ptr, ptr); 10, 630

printf("%d %u", ptr, &ptr); 630, 660

printf("%d %u", y, &y); 10, 650

\*ptr = 25;

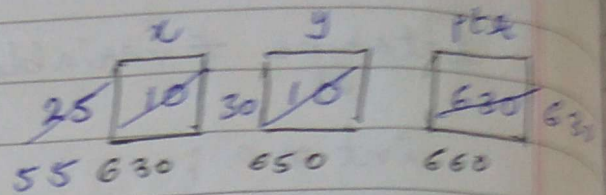
printf("%d", x); 25

y = 30;

ptr = &x;

x = y + \*ptr

30 + 25



Q. main()

{

```
int a, b, *p1, *p2, x, y, z;
```

a = 12;

b = 4;

p1 = &a;

p2 = &b;

x = \*p1 \* \*p2 - 6; 42

y = 4 \* - \*p2 / \*p1 + 10; 9

Space

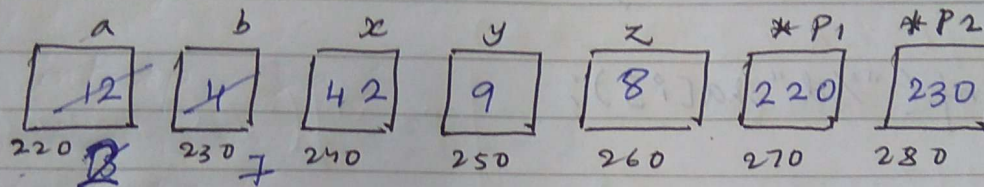
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```

printf("%u %u", P1, P2);    220, 230
printf("%d %d %d %d", a, b, x, y); 12, 4, 42, 9
* P2 = * P2 + 3; 7
* P1 = * P2 - 5; 2
Z = * P1 * (* P2) - 6    2 * 7 - 6
printf("%d %d %d", a, b, z); 2, 7, 8
}

```



Q. WAP to input 2 no. and swap them using pointers.

```

main()
{
    int a, b, *p, *q, temp;
    p = &a;
    q = &b;
    scanf("%d %d", &a, &b);
    *p =
    p = &a;
    q = &b;
    temp = *p;
    *p = *q;
    *q = temp;
    printf("%d %d", a, b);
    getch();
}

```



Q. WAP to input n no. in an array and calculate their sum using pointers.

```

void main()
{
    int n, sum=0, *p, i, a[50];
    scanf("%d", &n);
    for(i=0; i<n; i++)
    {
        scanf("%d", &a[i]);
    }

    p = &a[0];
    for(i=0; i<n; i++)
    {
        sum += *(p+i);
    }

    printf("%d", sum);
}

```

```

p = a;
sum = sum + *p;
p++;

```

Q. WAP to input an array store it and print it in reverse order using pointers.

```

void main()
{
    int n, i, *p, *q, a[50], temp;
    scanf("%d", &n);
    for(i=0; i<n; i++)
    {
        scanf("%d", &a[i]);
    }

    p = a;
    q = &a[n-1];
    while(p < q)
    {
        temp = *p;
        *p = *q;
        *q = temp;
        p++;
        q--;
    }

    for(i=0; i<n; i++)
    {
        printf("%d ", a[i]);
    }
}

```



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```
p = &a[0];
```

```
q = &a[n-1];
```

```
for (i=0; i < n/2; i++)
```

```
{
```

```
    temp = *(p+i);
```

```
    *(p+i) = *(q-i);
```

```
    *(q-i) = temp;
```

```
}
```

```
for (i=0; i < n; i++)
```

```
{
```

```
    printf("%d", a[i]);
```

```
    printf("%d", *(p+i));
```

```
}
```

```
}
```