

C Language

Decision Control instruction



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Agenda

- ① Control Statements
- ② Decision Control Statements
- ③ if
- ④ if-else
- ⑤ Conditional Operator
- ⑥ Nested if-else
- ⑦ if else ladder

Control Statements

1. Decision Control Statements
2. Iterative Control Statements
3. Switch Case Control Statements
4. Goto Control Statements.

Decision Control Statements

- if
- if else
- Conditional Operator

Selection Control Statements

main()

{

====

====

====

if ()

{

====

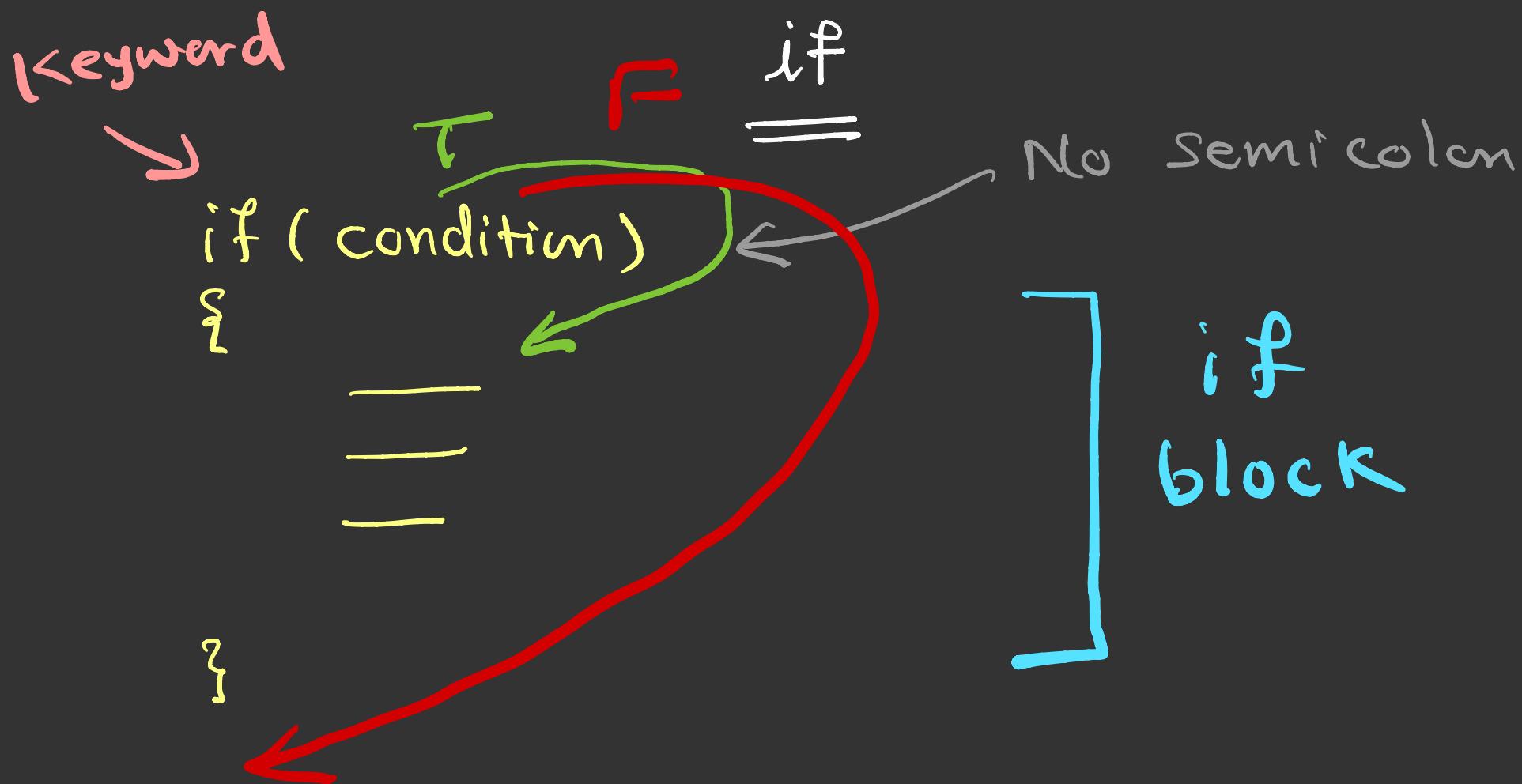
}

====

====

}

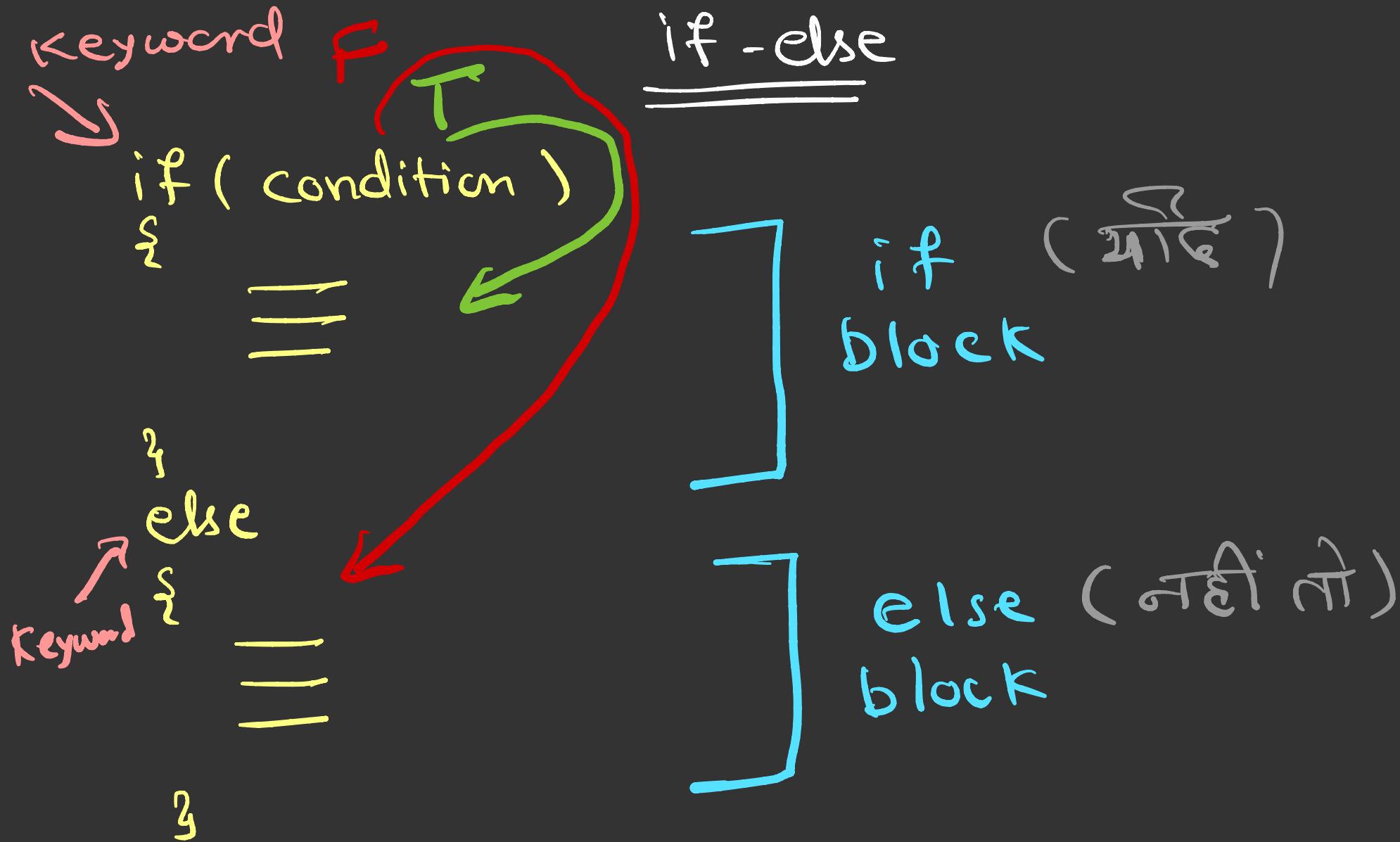
No keyword is
a function



Write a program to check whether a given number is positive or non positive.

```
#include<stdio.h>
int main()
{
    int a;
    printf("Enter a number");
    scanf("%d",&a);
    if(a>0)
    {
        printf("Positive");
    }
    if(a<=0)
    {
        printf("Non Positive");
    }
}
```

- ① Understand prob.
- ② Test cases
- ③ Dry run



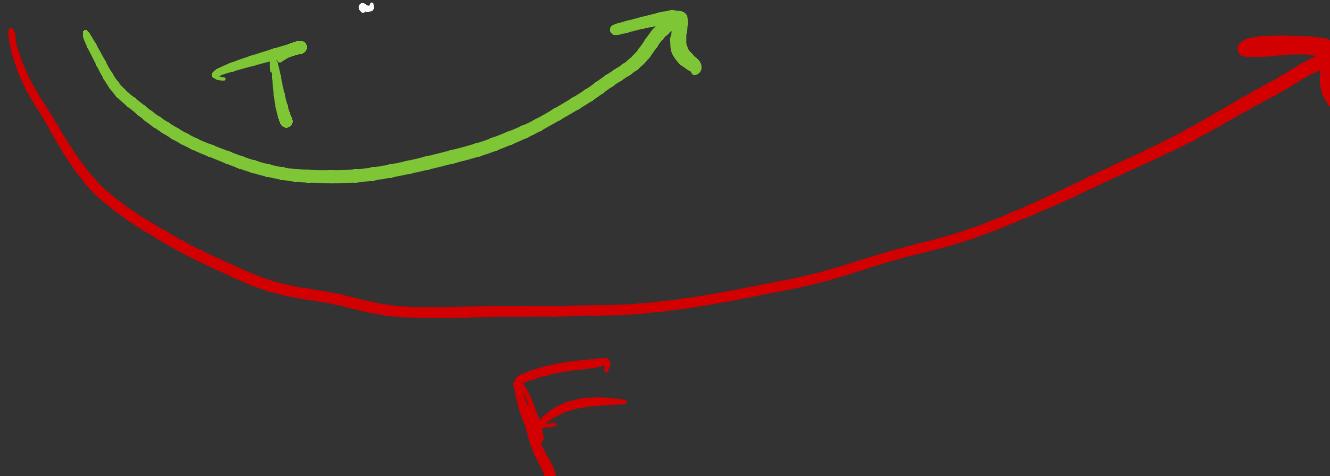
Write a program to check whether a given number is a positive or a non positive.

```
#include<stdio.h>
int main()
{
    int a;
    printf("Enter a number");
    scanf("%d",&a);
    if(a>0)
        printf("Positive");
    else
        printf("Non Positive");
}
```

Ternary
operator

Conditional Operator

expression1 ? expression2 : expression3 ;



if (exp1)

exp2

else

exp3

Write a program to check whether a given number is a positive or a non positive.

```
#include<stdio.h>
int main()
{
    int a;
    printf("Enter a number");
    scanf("%d",&a);
    a>0?printf("Positive"):printf("Non Positive");
}
```

```
if ( exp1 )  
{  
    exp2  
}  
else  
{  
    exp3  
}
```

• if else is not an expression

• conditional operator is an expression

→ `exp1 ? exp2 : exp3 ;`

Nested if else

```
if (condition)
{
    if (condition)
    {
        =
    }
}
```

```
if (condition)
{
    if (condition)
    {
        =
    }
    else
    {
        =
    }
    else
    {
        =
    }
}
```

Find output of the following program.

```
int main()
{
    int x = 5;
    if (x > 0)
    {
        printf("Hello");
    }
    printf("%d", x);
}
```

Hello5

Find Output of the following program.

```
int main()
{
    int x=0;
    if(x)
    {
        printf("Hello");
    }
    printf("\n%d",x);
}
```

Every Non-zero
value is True
and zero is False

0

Find Output of the following program.

```
int main()
{
    int x=5;
    if (x==4)
        printf("Hello");
    else
        printf("Bye");
    printf("%d", x);
}
```

- (a) Hello 5
- (b) Bye 5
- (c) Hello 4 ✓
- (d) Bye 4
- (e) Error

find output of the following program.

```
int main()
{
    int x=5;
    if (x==4)
        printf("Hello");
    printf("%d", x); Error
    else
        printf("Bye");
    printf("%d", x);
}
```

Nesting

```
if ( c1 )
    line1;
else
{
    if ( c2 )
        line2;
    else
        {
            if ( c3 )
                line3;
            else
                {
                    if ( c4 )
                        line4;
                    else
                        line5;
                }
            }
        }
}
```

if else ladder

```
if ( c1 )
    line1;
else if ( c2 )
    line2;
else if ( c3 )
    line3;
else if ( c4 )
    line4;
else
    line5;
```

$a \rightarrow > 0$
positive

$a > 10$
super positive

$a > 20$
super super positive

$a > 30$
mystic

if ($a > 30$)
print "Mystic"
else if ($a > 20$)
super super
else if ($a > 10$)
super positive
else if ($a > 0$)
positive