

# Lecture - 13

Programming in C

- flow of Control

## if-else Ladder: Multiple if-else Statement

Syntax if (Condition 1) {  
    ↳ Body of if  
}

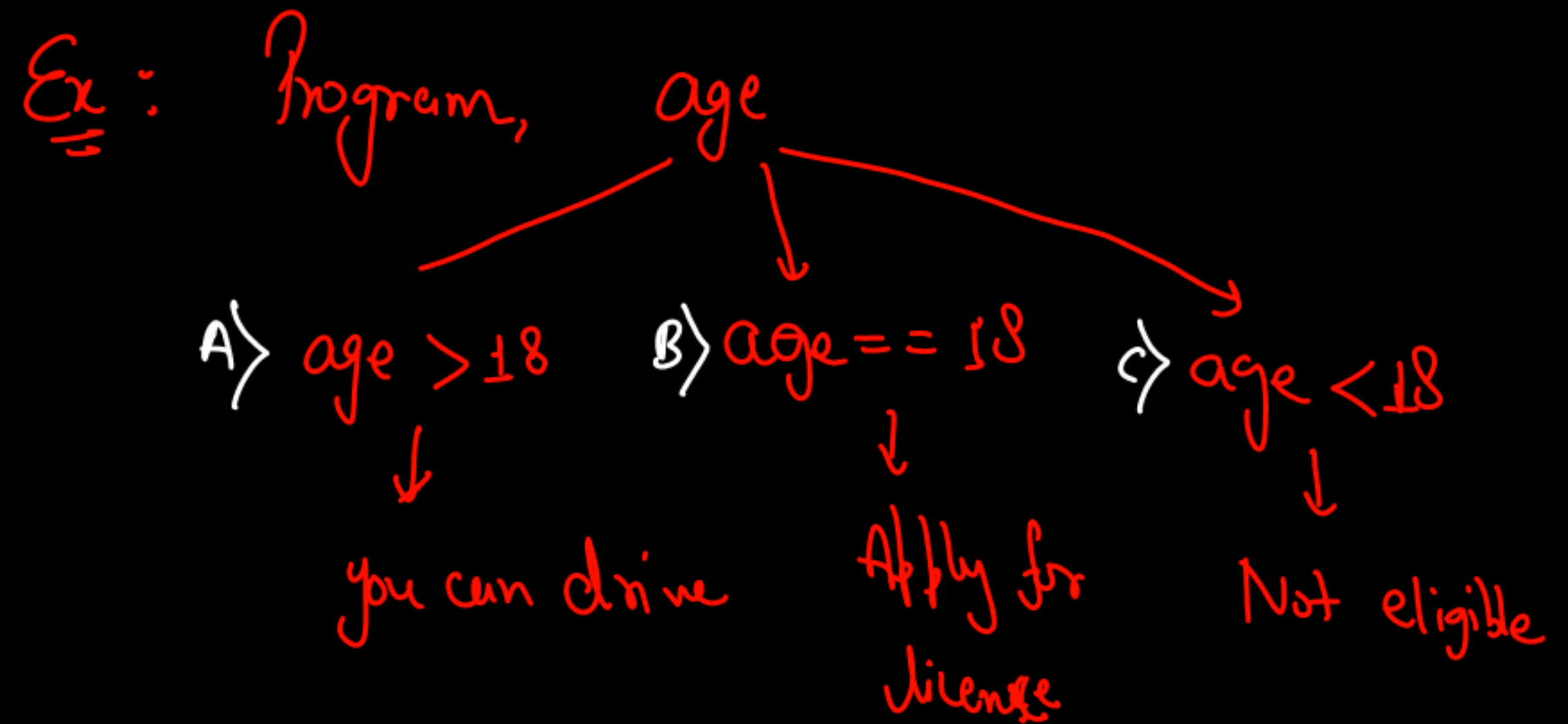
else if (Condition 2) {  
    ↳ Body of else if  
}

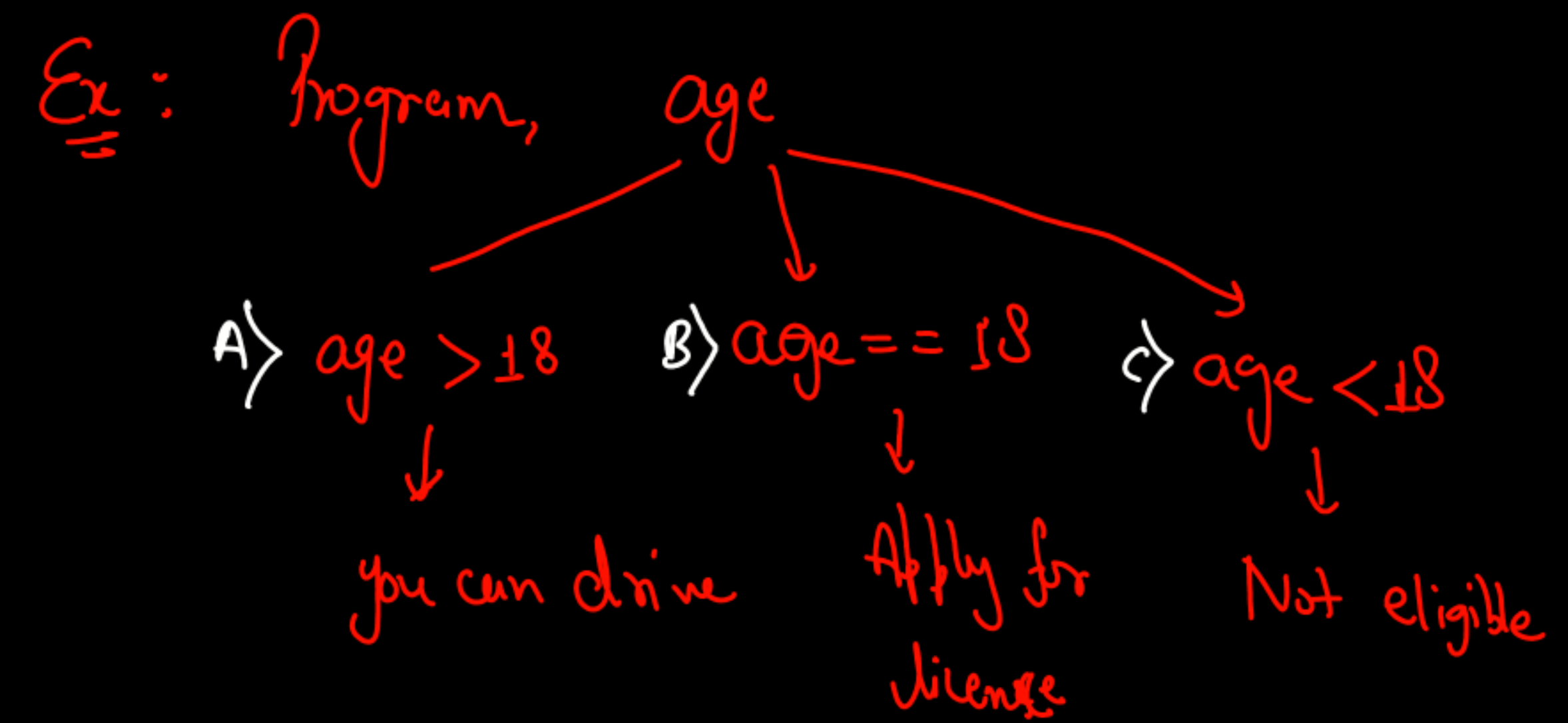
else if (Condition 3) {  
    ↳ Body of else if  
}

⋮

else if (Condition n) {  
    ↳ Body of else if  
}

else {  
    ↳ Body of else  
}





```
#include <stdio.h>
```

```
int main() {  
    int age;  
    printf("Enter your age: ");  
    scanf("%d", &age);
```

```
    if (age > 18) {  
        printf("You can Drive");  
    }  
    else if (age < 18) {  
        printf("Not eligible")  
    }  
    else {  
        printf("Apply for learning licence")  
    }  
    return 0;  
}
```

Write a program to print the grade of a student by taking the % as input according to the following criteria:

%	Grade
$\geq 90$	A
$90 > \% \geq 80$	B
$80 > \% \geq 70$	C
$70 > \% \geq 60$	D
$\% < 60$	E

```
#include <stdio.h>
```

```
int main() {
```

```
    float perc;
```

```
    printf("Enter Percentage:");
```

```
    scanf("%f", &perc);
```

```
    if (perc >= 90) {  
        printf("A");  
    }
```

```
    else if (perc >= 80 && perc < 90) {  
        printf("B");  
    }
```

```
    else if (perc >= 70 && perc < 80) {  
        printf("C");  
    }
```

```
    else if (perc >= 60 && perc < 70) {  
        printf("D");  
    }
```

```
    else {  
        printf("E");  
    }
```

```
    return 0;
```

```
}
```



## Nested if-else :

```
if (Condition) {  
    if (nested Condition) {  
        if (Condition) {  
            ...  
            if (Condition n) {  
                }  
            }  
        }  
    }  
}
```

Write a program to check the largest of three numbers (using nested conditionals):

```
#include <stdio.h>
```

```
int main () {
```

```
    int a=10, b=20, c=5 ;
```

```
    if (a > b) {
```

```
        if (a > c) {
```

```
            printf("A is greater");
```

```
        }
```

```
        else {
```

```
            printf("C is greater");
```

```
        }
```

```
    }
```

```
    else {
```

```
        if (b > c) {
```

```
            printf("B is greater");
```

```
        }
```

```
        else {
```

```
            printf("C is greater");
```

```
        }
```

```
    }
```

```
    }
```

Logic

$a > b$   
     $\rightarrow a > c \Rightarrow \textcircled{A}$   
     $\rightarrow \textcircled{C}$

$a < b$   
     $\rightarrow b > c \Rightarrow \textcircled{B}$   
     $\rightarrow \textcircled{C} \rightarrow$

## Goto Statement :

↳ Also called as Jump Statement

↳ #include <stdio.h>

```
int main () {
```

```
    int a = 10;
```

```
    print ("Hello");
```

```
    if (a == 10) {
```

```
        goto LABEL;
```

```
    printf ("good Morning\n");
```

```
    printf ("jump");
```

```
    printf ("Hi");
```

↳ LABEL :

```
    printf ("Inside Label");
```

```
    return 0;
```

```
}
```

a = 10

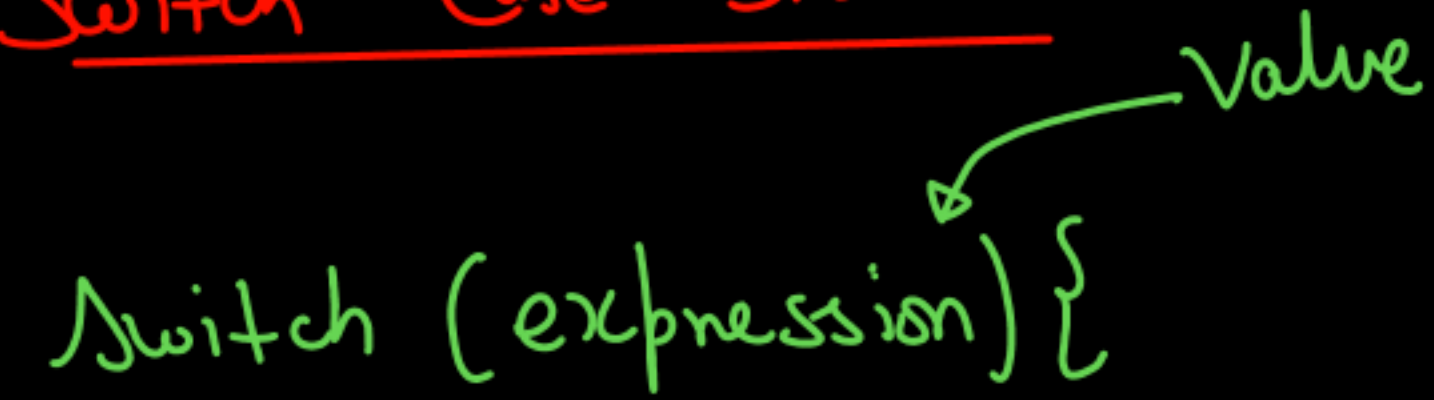
Hello

Inside Label

Skip

## Switch Case Statement:

Switch (expression) {

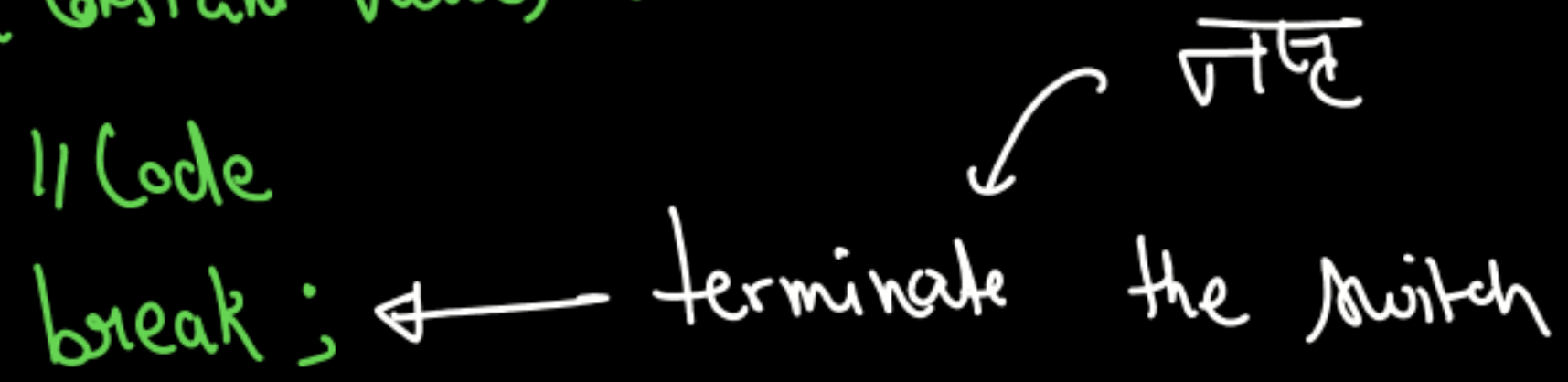


Case (Constant Value) :

// Code

break ;

← terminate the switch



Case (another Value) :

// Code

break ;

:

Case n :

// Code

break ;

default : ← optional

// Code

}



Write a program to take value 2, 8, 10, 16, then print the number System

```
#include <stdio.h>
```

```
int main() {
```

```
    int base;
```

```
    printf("Enter the base:\n");
```

```
    scanf("%d", &base);
```

```
    switch (base) {
```

```
        case 2:
```

```
            printf("Binary Number System");
```

```
            break;
```

```
        case 8:
```

```
            printf("Octal Number System");
```

```
            break;
```

```
        case 10:
```

```
            printf("Decimal Number System");
```

```
            break;
```

```
        default:
```

```
            printf("Invalid Choice");
```

```
    }
```

```
}
```

terminate

match