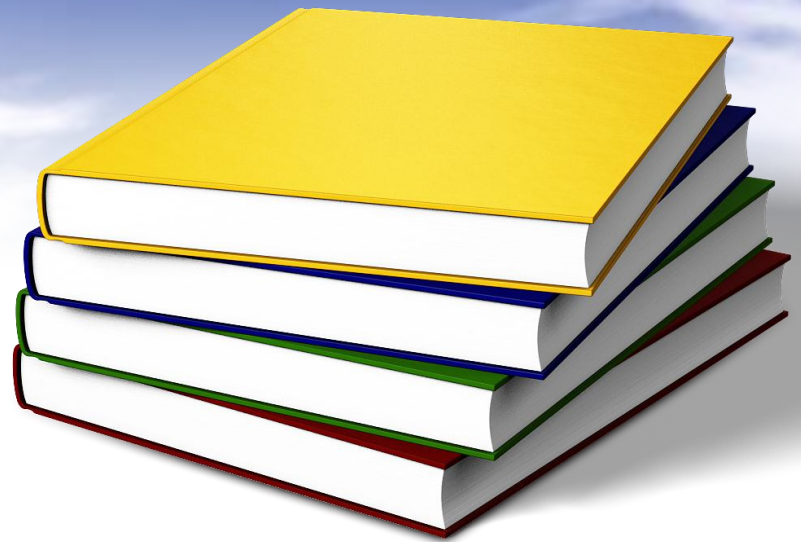


# DECISIONS LECTURE # 4



# if Statement



## Syntax

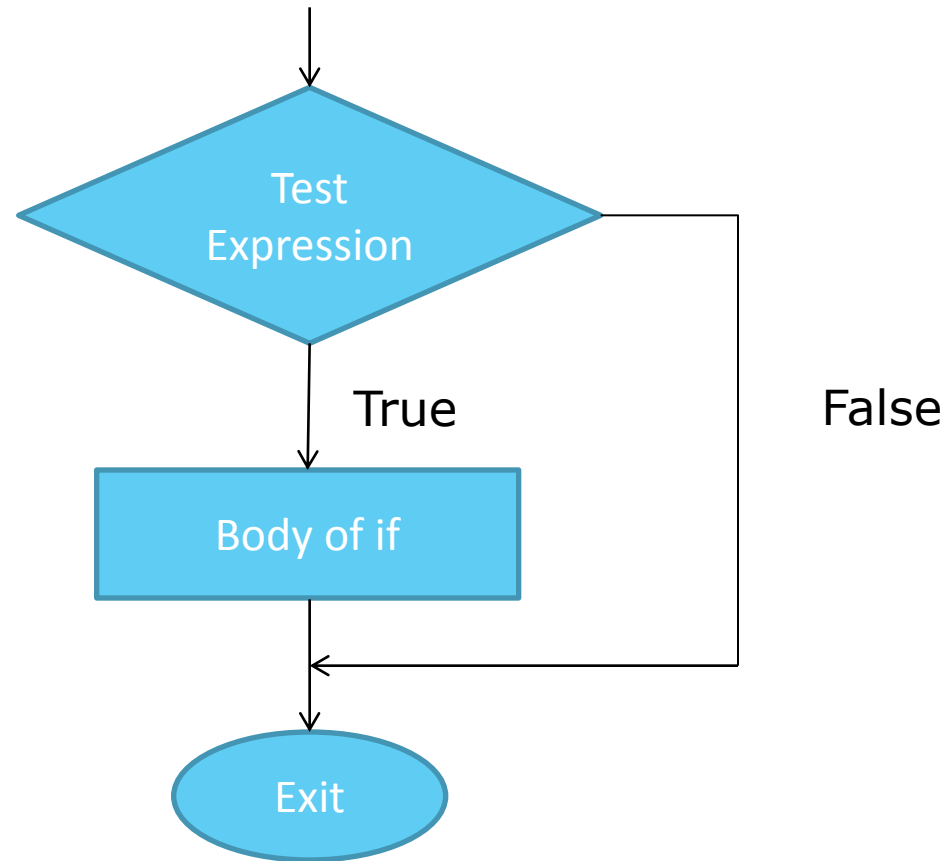
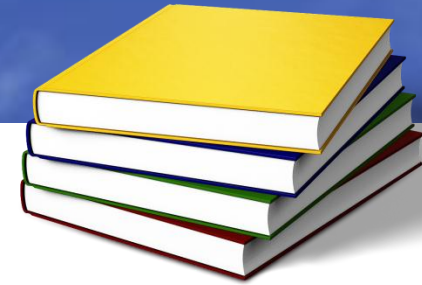
- Single statement if

```
if(condition)  
statement;
```

- Multi statement if

```
if(condition)  
{  
statement1;  
statement2;  
}
```

# if Statement Flow Chart



# if Statement Example



```
#include<iostream>
using namespace std;
int main()
{
int num;
cout<<"Enter a number";
cin>>num;
if(num>100)
{
cout<<"Number is greater than 100";
cout<<endl;
}
return 0;
}
```

# Example

- Generate even number using if and for loop.



```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
int i;
for(i=0;i<=100;i++)
{
if(i%2==0)
cout<<i<<endl;
}
getche();
return 0;
}
```

# If...else Statement



## Syntax

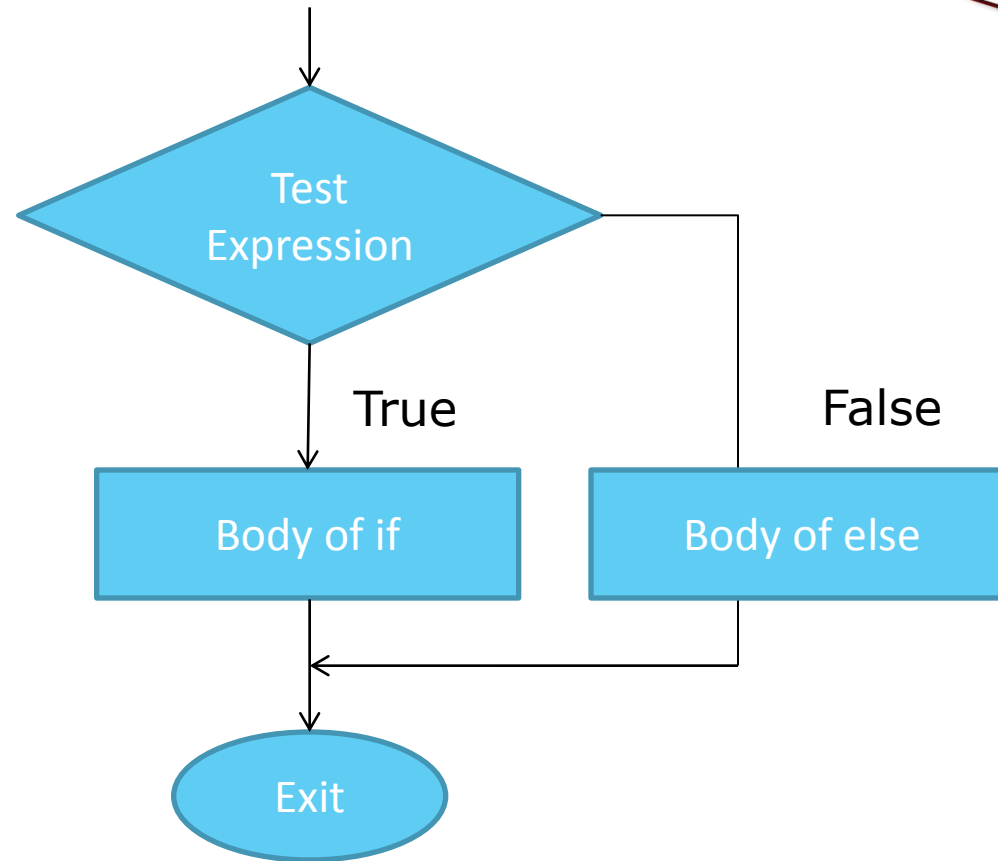
- **Single statement if...else**

```
if(condition)
statement;
else
statement;
```

- **Multi statement if...else**

```
if(condition)
{
statement1;
statement2;
}
else
{
statement1;
statement2;
}
```

# If...else Statement Flow Chart



# If...else Statement Example



```
#include<iostream>
using namespace std;
int main()
{
int num;
cout<<"Enter a number";
cin>>num;
if(num>100)
{
cout<<"Number is greater than 100";
cout<<endl;
}
else
cout<<"Number is not greater than 100";
return 0;
}
```



# If...else Statement Example



```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
int chcount=-1;
int wdcoun=1;
char ch='a';
cout<<"Enter a phrase\n";
while(ch!='\r')
{
ch=getche();
```

```
if(ch==' ')
wdcount++;
else
chcount++;
}
cout<<"Word
count="<<wdcount<<endl;
cout<<"Character
count="<<chcount;
return 0;
}
```

# Nested If...else Statement



## Syntax

- **Single statement if...else**

```
if(condition)
statement;
else
statement;
```

- **Multi statement if...else**

```
if(condition)
{
statement1;
statement2;
}
else
{
statement1;
statement2;
}
```

# Nested If...else Example



```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
char dir='a';
int x=0,y=0;
while(dir!='\r')
{
cout<<"Enter your location";
dir=getche();
```

```
if(dir=='n')
y--;
else if(dir=='s')
y++;
else if(dir=='e')
x++;
else if(dir=='w')
x--;
}
return 0;
}
```

# Matching else



```
#include<iostream>
#include<conio.h>
int main()
{
int a,b,c;
cout<<"Enter three numbers:";
cin>>a>>b>>c;
if(a==b)
    if(b==c)
        cout<<"b and c are same";
    else
        cout<<"b and c are different";
getche();
return 0;
}
```

# Switch Statement



## Syntax

```
switch(n)
```

```
{
```

```
case 1:
```

```
    statement
```

```
    statement;
```

```
    break;
```



1<sup>st</sup> case body

```
case 2:
```

```
    statement
```

```
    statement;
```

```
    break;
```



2<sup>nd</sup> case body

Break causes exit from switch

```
default:
```

```
    statement;
```

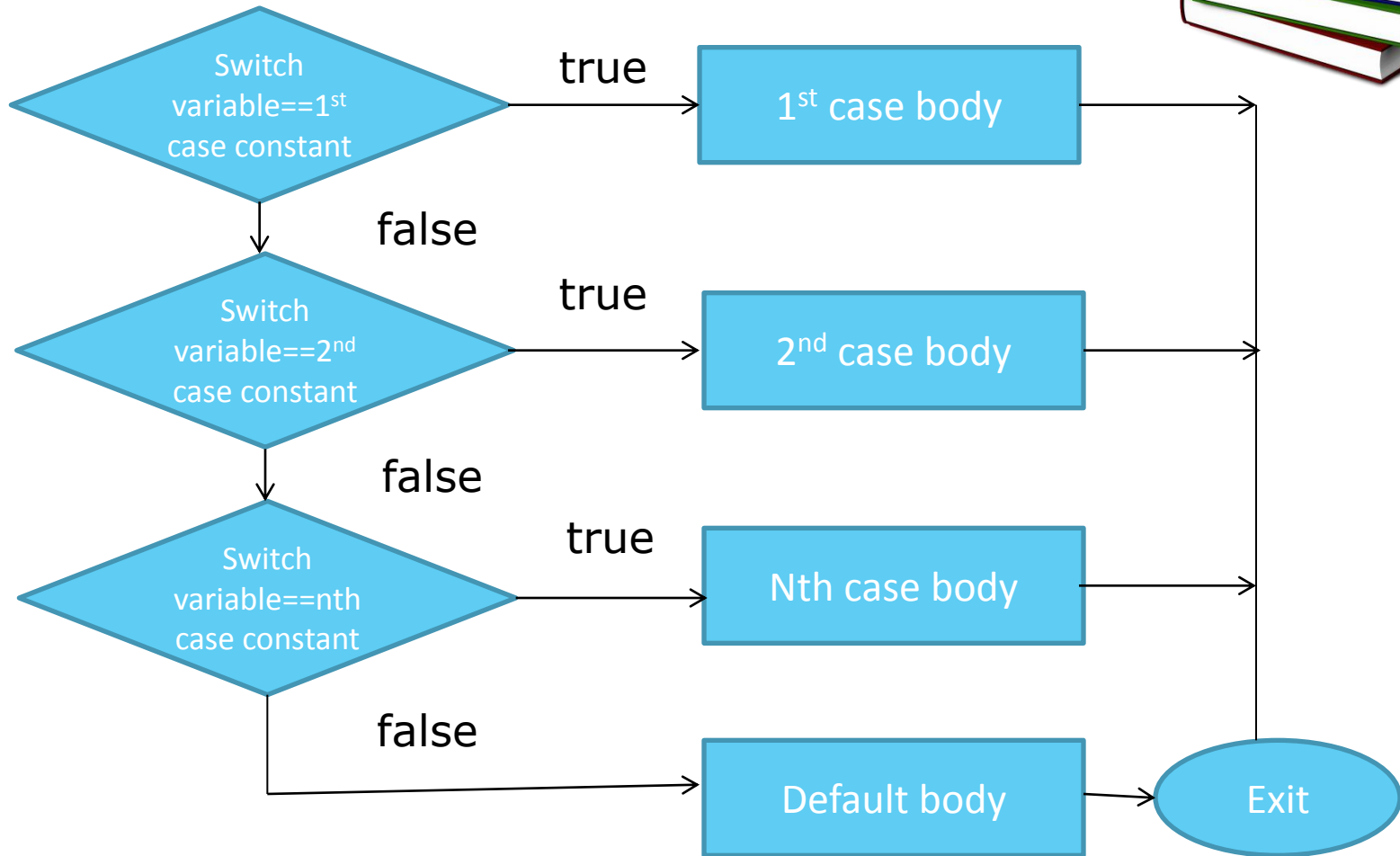
```
    statement;
```



Default body

```
}
```

# Switch Statement Flow Chart



# Switch Example



```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
char dir='a';
int x=0,y=0;
while(dir!='\r')
{
cout<<"Enter your
location";
dir=getche();
```

```
switch(dir)
{
case 'n': y--; break;
case 's': y++; break;
case 'e': x++; break;
case 'w': x--; break;
default: cout<<"try
again";
} //end switch
}
return 0;
}
```

# Conditional Operator ?:

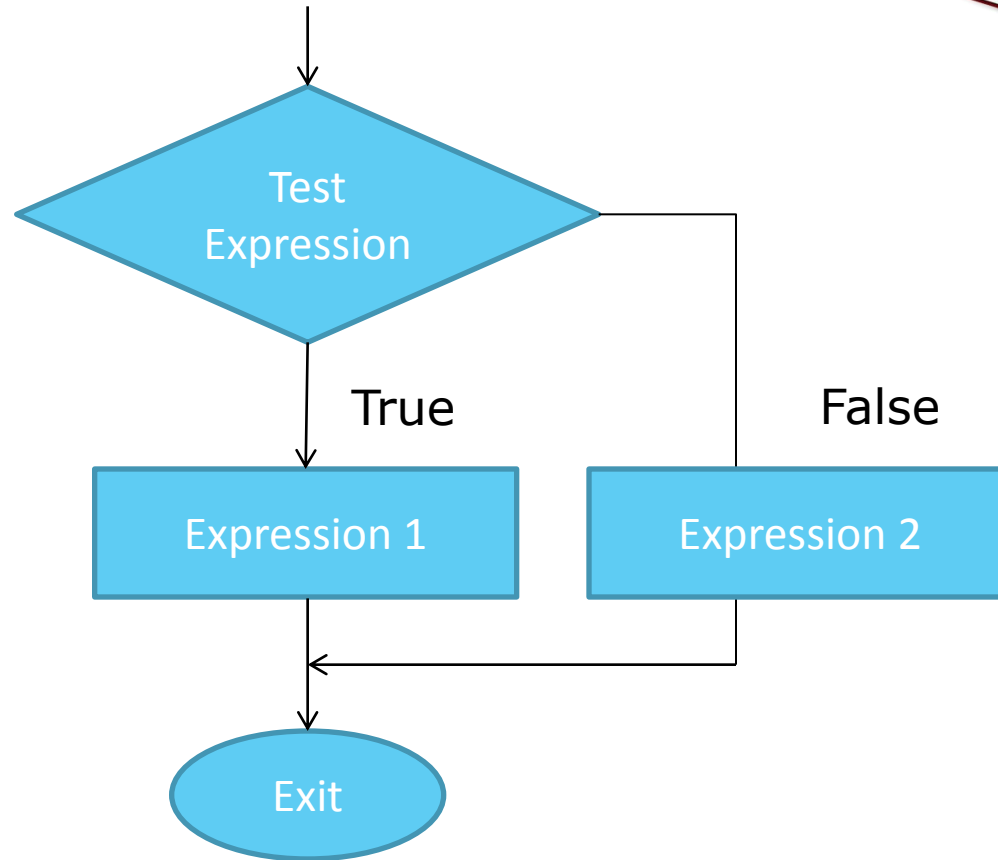


## Syntax

result=(Condition)? Expression 1:  
Expression 2;



# Conditional Operator Flow Chart



# Conditional Operator Example



```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
int x=100, y=0;
int result=(x>y)?x:y;
getche();
return 0;
}
```

# Logical Operators



| Operator | Effect      |
|----------|-------------|
| &&       | Logical And |
|          | Logical Or  |
| !        | Logical Not |

# Logical And



```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
int number;
cout<<"Enter your numbers";
cin>>number;
if(number>=90)
cout<<"A";
else if(number>=70 && number<90)
cout<<"B";
else if(number>=60 && number<70)
cout<<"C";
else
cout<<"F";
getche();
return 0;
}
```

# Logical Or



```
#include<iostream>
#include<conio.h>
using namespace std;
int main()
{
char dir='a';
int x=0,y=0;
while(dir!='\r')
{
cout<<"Enter your
location";
dir=getche();
```

```
if(dir=='n' || dir=='N')
y--;
else if(dir=='s' ||
dir=='S')
y++;
else if(dir=='e' ||
dir=='E')
x++;
else if(dir=='w' ||
dir=='W')
x--;
}
return 0;
}
```

# Logical Not



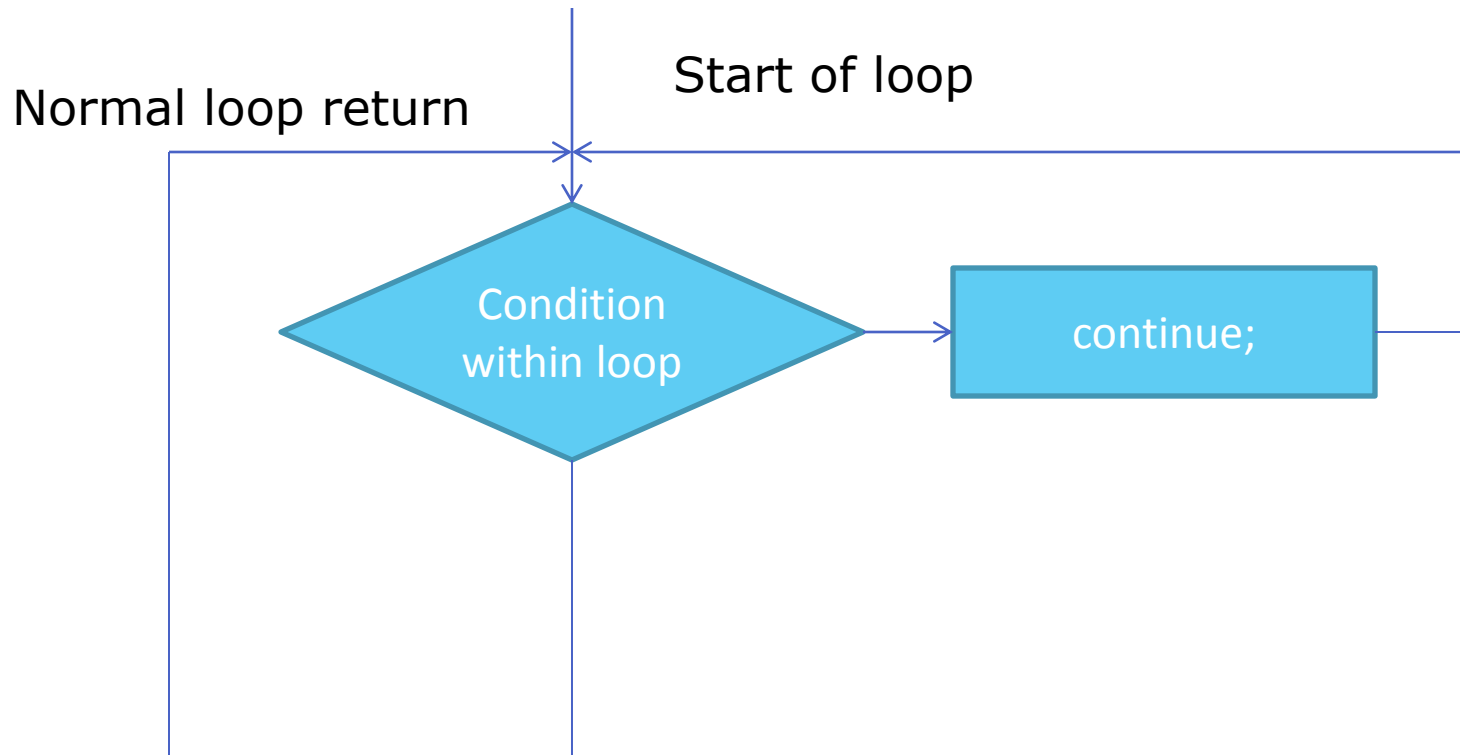
```
#include<iostream>
#include<conio.h>
int main()
{
int x;
cout<<"enter a number";
cin>>x;
if(!(x==0))
cout<<"Number is not zero";
getche();
return 0;
}
```

# Operator Precedence



| Operator Type | Operators             |
|---------------|-----------------------|
| Unary         | !, ++, --             |
| Arithmetic    | *, /, %               |
|               | +, -                  |
| Relational    | <, >, <=, >=          |
|               | ==, !=                |
| Logical       | &&                    |
|               |                       |
| Conditional   | ?:                    |
| Assignment    | =, +=, -=, *=, /=, %= |

# Continue Statement





# Example



```
#include<iostream>
#include<conio.h>
int main()
{
int dividend, divisor;
char ch='a';
while(ch!='\r')
{
cout<<"Enter dividend";
cin>>dividend;
cout<<"Enter divisor";
cin>>divisor;
if(divisor==0)
continue;
cout<<"Quotient="<<dividend/divisor;
}
getche();
return 0;
}
```

# goto Statement

## Syntax

```
goto Label;  
//other statements  
Label:  
//control will begin here
```

