

Class 05

Repeated Decisions, Logical Operators &&, ||, ! (and, or, not)

Repeated Decisions - Loops

```
if (true/false question) {  
    statement(s); // executes only if question is true  
}
```

If question is true, statement is executed and program moves to the next line after the if statement

```
while (true/false question) {  
    statement(s); // executes repeatedly as long as question is true  
}
```

If question is true, statement executes repeatedly until the question becomes false

Example Program – funClass.cpp

- Plan:
 - Declare char variable ans and initialize to 'y'
 - In a while loop, ask the user if they are having fun in class
 - As long as the user enters "y" continue asking the question
 - If the user does not enter "y" tell them "That's too bad."

Boolean Operators

Operator	Meaning	Example	Result
&&	Logical And	(5 < 2) && (5 > 3)	FALSE
	Logical Or	(5 < 2) (5 > 3)	TRUE
!	Logical Not	!(5 < 2)	TRUE

Example – password.cpp

- Goal: Ask for a three-digit password
- If the password is illegal, keep asking again and again until it is legal

Examples of conditions (single and compound)

- Examples using count = 0, limit = 10, x = 12, y = 15
 - (x == 12)
 - !(count != limit)
 - (count < 10) && (x < y)
 - (limit < 20) || ((limit / x) > 7)
 - (count == 0) && (x > y)
 - !(x == count)
 - !((limit != x) || (count < limit))

Example Program – funClass2.cpp

- Plan:
 - Declare char variables ans1 and ans2 and initialize each to 'y'
 - In a while loop:
 - ask the user if they are having fun in class
 - ask the user if they are lying right now
 - As long as the user enters "y" for both continue asking the question
 - If the user is not having fun in class, print "That's too bad."
 - If the user is lying right now, print "Truth hurts."