

EECS168/169 Lab-03

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if statements in C++

- Simple if statement
 - Called stand-alone if statement
 - Checks certain logical condition, executes if true otherwise skips.
- if..else statement
 - Checks the condition. If the condition is true, it executes the code inside if. Otherwise, it executes the else condition.
- Nested if statement
 - If within another if
- else..if ladder(if..else if..else if.....else)
 - if there are multiple decisions/conditions, we use if..else ladder statements.
 - Depending upon the true condition, respective statement is executed.
 - If neither of the statement is true, else statement is executed.
- Else statement is not compulsory and it does not require condition.

Syntax

- If statement

```
if(condition)
{
    //code for execution
}
```

- If..else statement

```
if(condition)
{
    //code for execution
}
else
{
    //code for execution
}
```

- Nested if..else statement

```
if(condition)
{
    //code for execution
}
else if(condition)
{
    //code for execution
}
Else
{
    //code for execution
}
```

- If ladderstatement

```
if(condition)
{
    If(condition)
    {
        If(condition)
        {
            //code for execution
        }
    }
}
```

Exercise 1-Saffir–Simpson Scale

- Declare and initialize the variable for wind
- Ask the user to enter the speed of the wind and store it in the required variable.
- By using simple if or else..if ladder, display the category of hurricane.
- If the wind speed is invalid(negative speed), display the error.

Exercise 2- Long Division Printer

- Ask the user for numerator and denominator in the form of integers and store them in the required integer variables.
- Check whether the denominator is 0. If the denominator is 0, display the warning saying "Sorry, you may not divide by zero."
- Else perform the division and display the quotient and remainder.
 - `numerator/denominator` for quotient
 - `numerator%denominator` for remainder

Exercise 3-Restaurant

- Create a restaurant bill.
- Ask the users for the items(tacos, sushi and desserts) in yes/no(y/n) format
 - If yes, ask for the quantity in integers. (0 is allowed. If quantity is less than 0, convert to 0)
- Ask for the age
 - If age \geq 65, give the 10% discount on the total cost obtained after adding tax.
 - If age \leq 12, cost of desserts=0(free). Then calculate the total cost and add tax.

(Note: tax is 50%)
- Calculate the required amounts given in wiki page and display the bill as shown in the sample output.

Exercise 4-Change Maker

- **Only for EECS 169**
- **Similar to the exercise 5 of Lab 02**
- Convert the number of pennies in quarters, dimes, nickels and pennies without using if..else statements.
 - 25 pennies = 1 quarter
 - 10 pennies = 1 dime
 - 5 pennies = 1 nickel