

Nested `if`s

Nest `if` statements

- When an `if` statement is inside another `if` statement, it is said to be nested within the outer `if`.

```
if (age < 28) //outer if
{
    if (gender == 'm') //nested if
    {
        premium = premium + 150;
    }
}
```

Example

```
if(age < 28) //outer if
{
    if(gender == 'm') //nested if
    {
        premium = premium + 150;
    }
}
```

Can be rewritten using logical AND &&

```
if(age < 28 && gender == 'm')
{
    premium = premium + 150;
}
```

Insurance Question

- More experienced drivers can receive a reduction in their premium depending on the number of penalty points they have. Drivers who are over 30 years old with no penalty points get a 40% reduction on their premium. Drivers who are over 30 years old with up to 5 penalty points get a 10% reduction on their premium.

Insurance Question

```
if(age > 30)
{
    if(penPts == 0)
    {
        disc = premium * .4;
        premium = premium - disc;
    }
    else if(penPts <= 5)
    {
        disc = premium * .1;
        premium = premium - disc;
    }
} //end if
```

If/else/if nested inside an if

Another solution

```
if(age > 30 && penPts == 0)
{
    disc = premium * .4;
    premium = premium - disc;
}
else if(age > 30 && penPts <= 5)
{
    disc = premium * .1;
    premium = premium - disc;
}
```

Consider the code...

```

if(age > 30 && penPts == 0)
{
    disc = premium * .4;
    premium = premium - disc;
}

if(age > 30 && penPts <= 5)
{
    disc = premium * .1;
    premium = premium - disc;
}

```

Can you spot the problem?

Common error with `if`

```

if(result >= 40);
{
    System.out.print("pass");
}
else
{
    System.out.print("fail");
}
Test.java:34: error: 'else' without 'if'
    else
    ^
    1 error

```

- The syntax error occurs because the semicolon following the `if` terminates the `if`, S.O.P("pass") is seen as next line of code and the `else` has nowhere to attach

Conclusion

- When an `if` statement is inside another `if` statement, it is said to be nested within the outer `if`.
- Useful in many situations
- Concentrate on a single `if` at a time
- When used correctly, will simplify your code