1. Conditionals

Single line conditional:

```python
if ( test ) statement
```

The full if-statement is:

```python
if ( something ) then
  !! something_doing
else
  !! otherwise_else
end if
```

The ‘else’ part is optional; you can nest conditionals.
## 2. Comparison and logical operators

<table>
<thead>
<tr>
<th>Operator</th>
<th>old style</th>
<th>meaning</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>==</td>
<td>.eq.</td>
<td>equals</td>
<td>(x==y-1)</td>
</tr>
<tr>
<td>/=</td>
<td>.ne.</td>
<td>not equals</td>
<td>(x*x/=5)</td>
</tr>
<tr>
<td>&gt;</td>
<td>.gt.</td>
<td>greater</td>
<td>(y&gt;x-1)</td>
</tr>
<tr>
<td>&gt;=</td>
<td>.ge.</td>
<td>greater or equal</td>
<td>(\sqrt{y}\geq7)</td>
</tr>
<tr>
<td>&lt;</td>
<td>.lt.</td>
<td>less than</td>
<td></td>
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<tr>
<td>&lt;=</td>
<td>.le.</td>
<td>less or equal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.and.</td>
<td>and, or</td>
<td>(x&lt;1\ .\text{and} .&gt;0)</td>
</tr>
<tr>
<td></td>
<td>.or.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.not.</td>
<td>not</td>
<td>(.\not.( x&gt;1 \ .\text{and} .&gt;2 ))</td>
</tr>
<tr>
<td></td>
<td>.equiv.</td>
<td>equiv (iff, not XOR)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.neqv.</td>
<td>not equiv (XOR)</td>
<td></td>
</tr>
</tbody>
</table>
3. Select statement

Test single values or ranges, integers or characters:

```plaintext
Select Case (i)
Case (:-1)
    print *, "Negative"
Case (5)
    print *, "Five!"
Case (0)
    print *, "Zero."
Case (1:4,6:) ! can not have (1:)
    print *, "Positive"
end Select
```

Compiler does checking on overlapping cases!

Case values need to be constant expressions.
Exercise 1

Read in a positive integer. If it’s a multiple of three print ‘Fizz!’; if it’s a multiple of five print ‘Buzz!’: It it is a multiple of both three and five print ‘Fizzbuzz!’: Otherwise print nothing.

Note:

- Capitalization.
- Exclamation mark.
- Your program should display at most one line of output.
Optional exercise 2

Read in three grades: Algebra, Biology, Chemistry, each on a scale 1 ⋅⋅ 10. Compute the average grade, with the conditions:

• Algebra is always included.
• Biology is only included if it increases the average.
• Chemistry is only included if it is 6 or more.