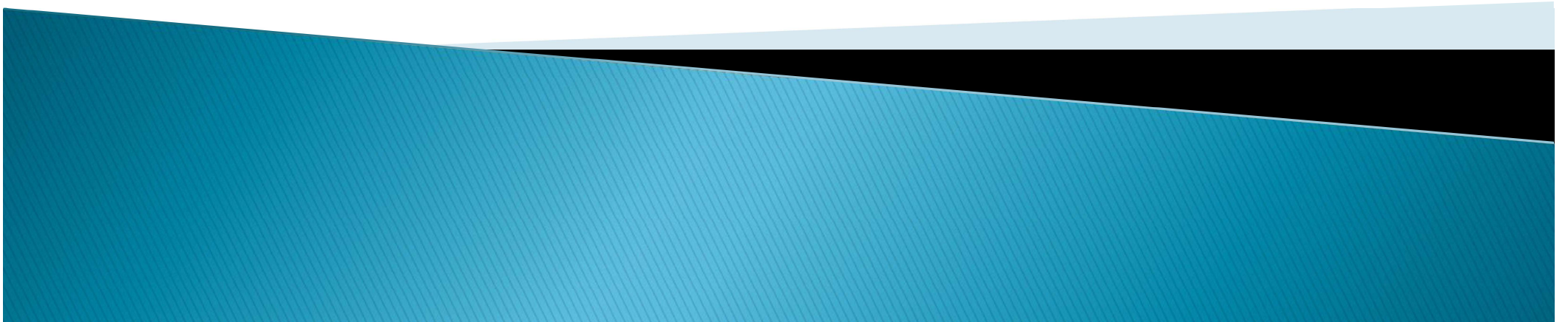
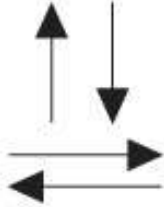






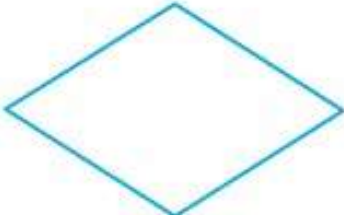
Review Flowcharts





Flowchart Symbols

Flowchart Symbol	Explanation
 Flowlines	Flowlines are indicated by straight lines with optional arrows to show the direction of data flow. The arrowhead is necessary when the flow direction might be in doubt. Flowlines are used to connect blocks by exiting from one and entering another.
 Start  End/Stop/Exit	Flattened ellipses indicate the start and the end of a module. An ellipse uses the name of the module at the start. The end is indicated by the word <i>end</i> or <i>stop</i> for the top or <i>Control</i> module and the word <i>exit</i> for all other modules. A start has no flowlines entering it and only one exiting it; an end or exit has one flowline entering it but none exiting it.

Flowchart Symbols

 <p>Processing</p>	<p>The rectangle indicates a processing block, for such things as calculations, opening and closing files, and so forth. A processing block has one entrance and one exit.</p>
 <p>I/O</p>	<p>The parallelogram indicates input to and output from the computer memory. An input/output (I/O) block has one entrance and only one exit.</p>
 <p>Decision</p>	<p>The diamond indicates a decision. It has one entrance and two and only two exits from the block. One exit is the action when the resultant is <i>True</i> and the other exit is the action when the resultant is <i>False</i>.</p>

Flowchart Symbols

 <p>Process Module</p>	<p>Rectangles with lines down each side indicate the process of modules. They have one entrance and only one exit.</p>
 <p>Automatic-Counter Loop</p>	<p>The polygon indicates a loop with a counter. The counter starts with <i>A</i> (the beginning value) and is incremented by <i>S</i> (the incrementor value) until the counter is greater than <i>B</i> (the ending value). <i>Counter</i> is a variable. <i>A</i>, <i>B</i>, and <i>S</i> may be constants, variables, or expressions.</p>

Flowchart Symbols



On-Page Connectors*



Off-Page Connectors*

Flowchart sections can be connected with two different symbols. The circle connects sections on the same page, and the home base plate connects flowcharts from page to page. Inside these two symbols the programmer writes letters or numbers. The on-page connector uses letters inside the circle to indicate where the adjoining connector is located. An *A* connects to an *A*, a *B* to a *B*, etc. The off-page connectors use the page number where the next part or the previous part of the flowchart is located. This allows the reader to easily follow the flowchart. On- and off-page connectors will have either an entrance or an exit.

* These connectors should be used as little as possible. They should be used to enhance readability. Overuse decreases readability and produces a cluttered effect.

Example: Payroll

Algorithm	Flowchart	Pseudocode
<pre> If PayType = "Hourly" Then If Hours > 40 Then Pay = Rate * (40 + 1.5 * (Hours - 40)) Else Pay = Rate * Hours Else Pay = Salary </pre>	<pre> graph TD A((A)) --> D1{If PayType = "Hourly"} D1 -- False --> P1[Pay = Salary] D1 -- True --> D2{If Hours > 40} D2 -- False --> P2[Pay = Rate * Hours] D2 -- True --> P3[Pay = Rate * (40 + 1.5 * (Hours - 40))] P1 --> B((B)) P2 --> B P3 --> B </pre>	<pre> If PayType = "Hourly" Then If Hours > 40 Then Pay = Rate * (40 + 1.5 * (Hours - 40)) Else Pay = Rate * Hours Endif Else Pay = Salary Endif </pre>