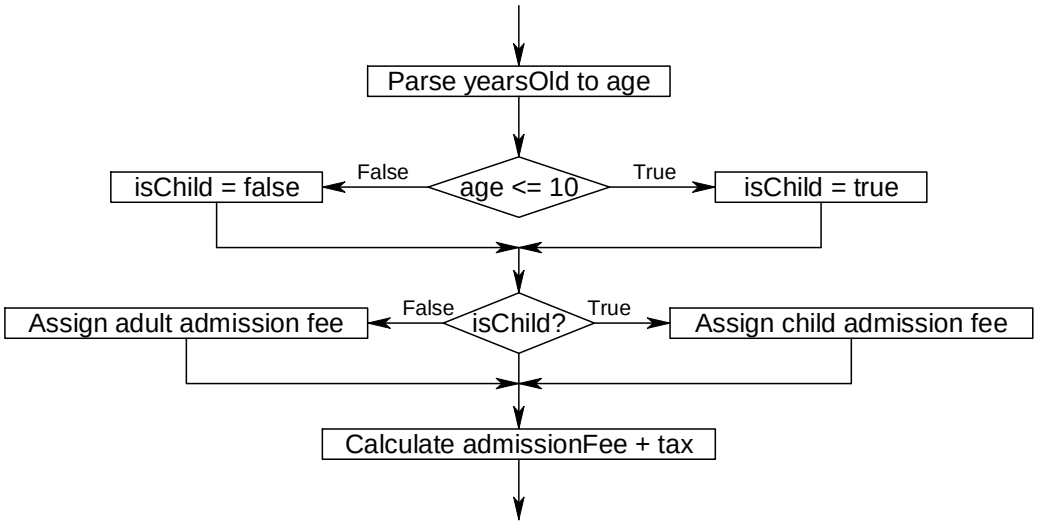
Virtual Lecture Notes (Part 1)

The AdmissionFee_v2 class is a minor variation of the previous version. Both programs are designed to calculate the admission fee to an event, based on a person's age. Carefully study the structure of this flowchart; find the input, processing, and output sections.



- Examine the source code for the AdmissionsFee_v2 class in relation to the flowchart.
- Analyze the program line-by-line and make sure you understand the syntax and purpose of each statement in the program.
- Run the program and observe the performance and the output.

The segment of code shown below is where "the **boolean** meets the code" in the program.

```
...
< 8>      boolean isChild;
< 9>      double admissionFee = 6.00;
...
<17>      isChild = age <= 10;
<18>
<19>      if(isChild)
<20>         admissionFee = 4.50;
<21>      else
<22>         admissionFee = 6.00;
<23>
<24>      admissionFee += admissionFee * tax;
...
```

Notice that the block of code for the conditional now contains another one of Java's reserved words: **else**. There is a corresponding change in the flowchart that reflects the double branching capability of the **if-else** statement block. Booleans are used as follows in the AdmissonFee_v2 class.

Line < 8> declares **isChild** to be a **boolean** primitive data type.

Line < 9> declares **admissionFee** to be a **double** primitive data type and assigns 6.00 as the variable's initial value.

Line <17> is a **boolean** expression that evaluates whether the age entered by the user is less than or equal to 10. If the age is less than or equal to 10, **true** is assigned to the boolean **isChild** variable; otherwise **false** is assigned.

Line <19> evaluates the value of **isChild** (i.e. true or false). When the value is **true** Line <20> is executed and then the flow of control resumes on Line <24>. When the value is **false**, execution jumps to Line <21>.

Line <20> assigns a new value to the a**dmissionFee** variable (4.50) when **isChild** is true, then continues execution on Line <24>.

Line <21> is executed when the value of **isChild** in Line <19> is **false**.

Line <22> assigns a new value to the **admissionFee** variable (6.00) when **isChild** is **false**.

Line <24> calculates the admission fee including the tax.

Before moving on, compare the two versions of the program side-by-side. Condition statements with two branches will be used repeatedly throughout the course when you need to make decisions. Be sure you understand how the flow of control can change, based on evaluation of a **boolean** expression.