Java Conditional Statements

Lecture - 3

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The if Selection Structure

- Single-entry/single-exit structure
- Perform action only when condition is **`true`**
- Action/decision programming model

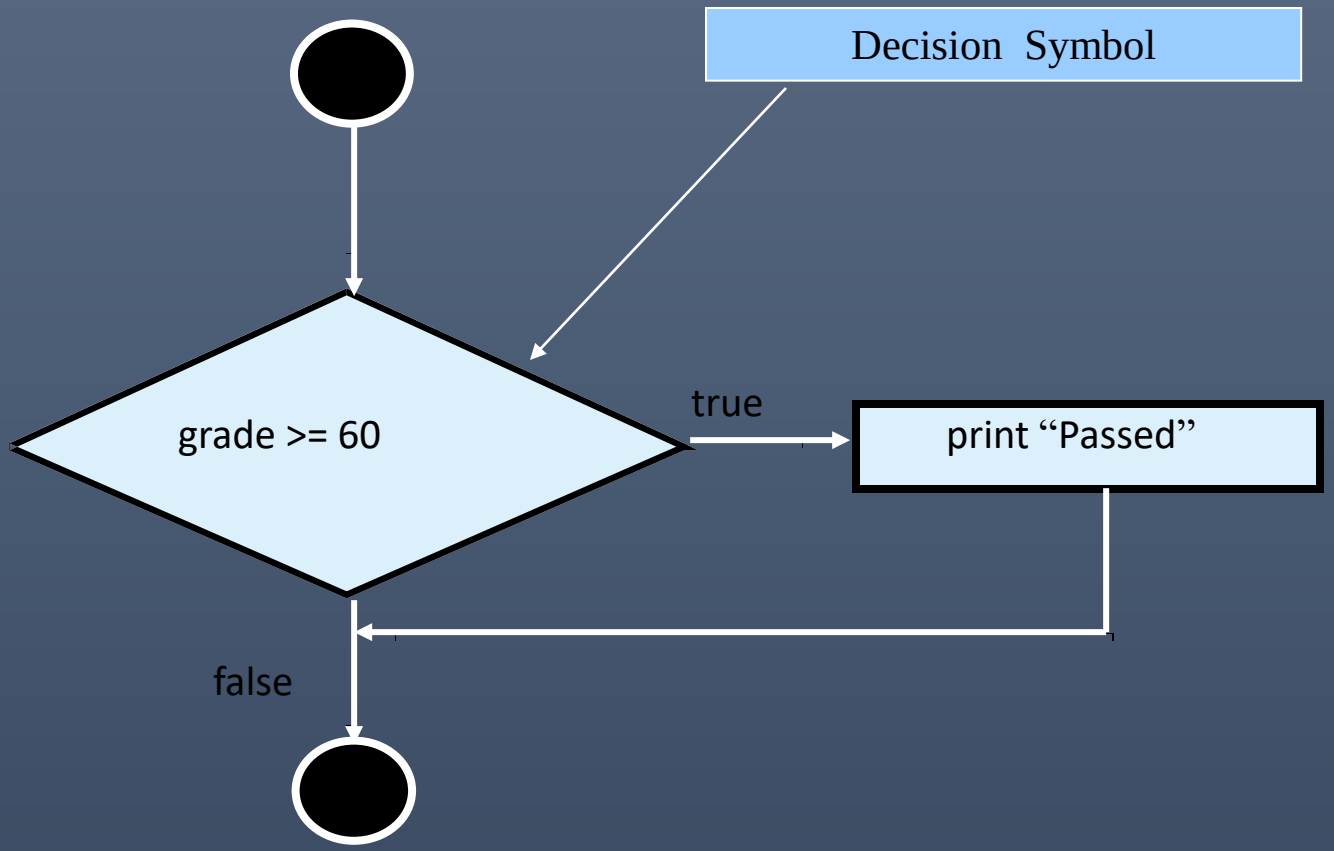

Fig - Flowcharting the single-selection if structure.

The if/else Selection Structure

- Perform action only when condition is **`true`**
- Perform different specified action when condition is **`false`**
- Conditional operator (**`?:`**) cans be used as alternative

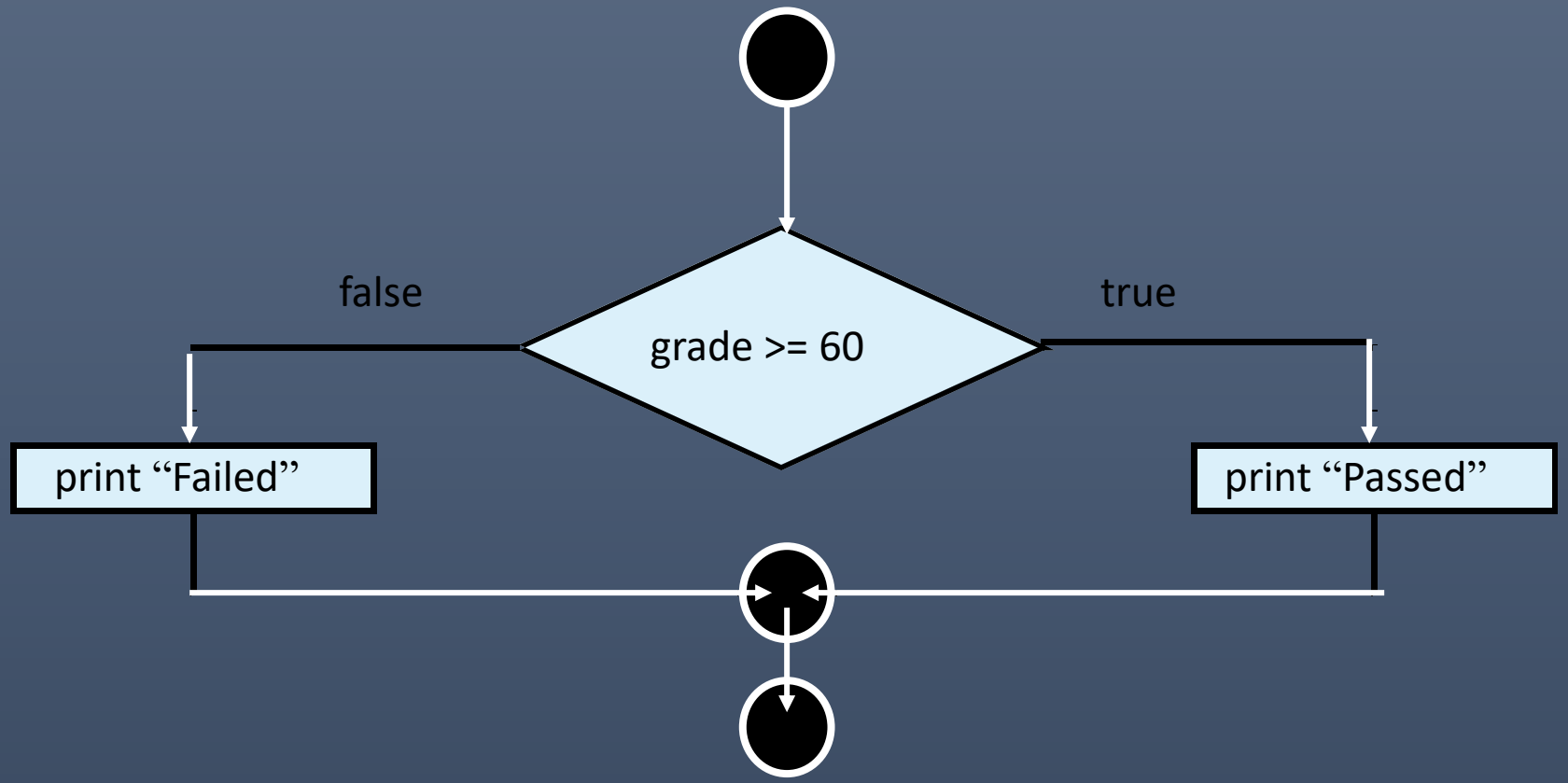

Fig - Flowcharting the double-selection if/else structure.

If-else Ladder

- A program can test multiple cases by placing if…else statements inside other if…else statements to create nested **if…else** statements.
- For example if we are given a variable *student Marks* we can check the grade as the following

If-else Ladder

```
if(percentage >= 90){
    System.out.println("Grade A");
}else if(percentage < 90 && percentage >= 80){
    System.out.println("Grade B");
}else if(percentage < 80 && percentage >= 70){
    System.out.println("Grade C");
}else if(percentage < 70 && percentage >= 60){
    System.out.println("Grade D");
}else if(percentage < 60 && percentage >= 50){
    System.out.println("Grade E");
}else if(percentage < 50 && percentage >= 40){
    System.out.println("Grade F");
}else {
    System.out.println("Failed!");
}
```

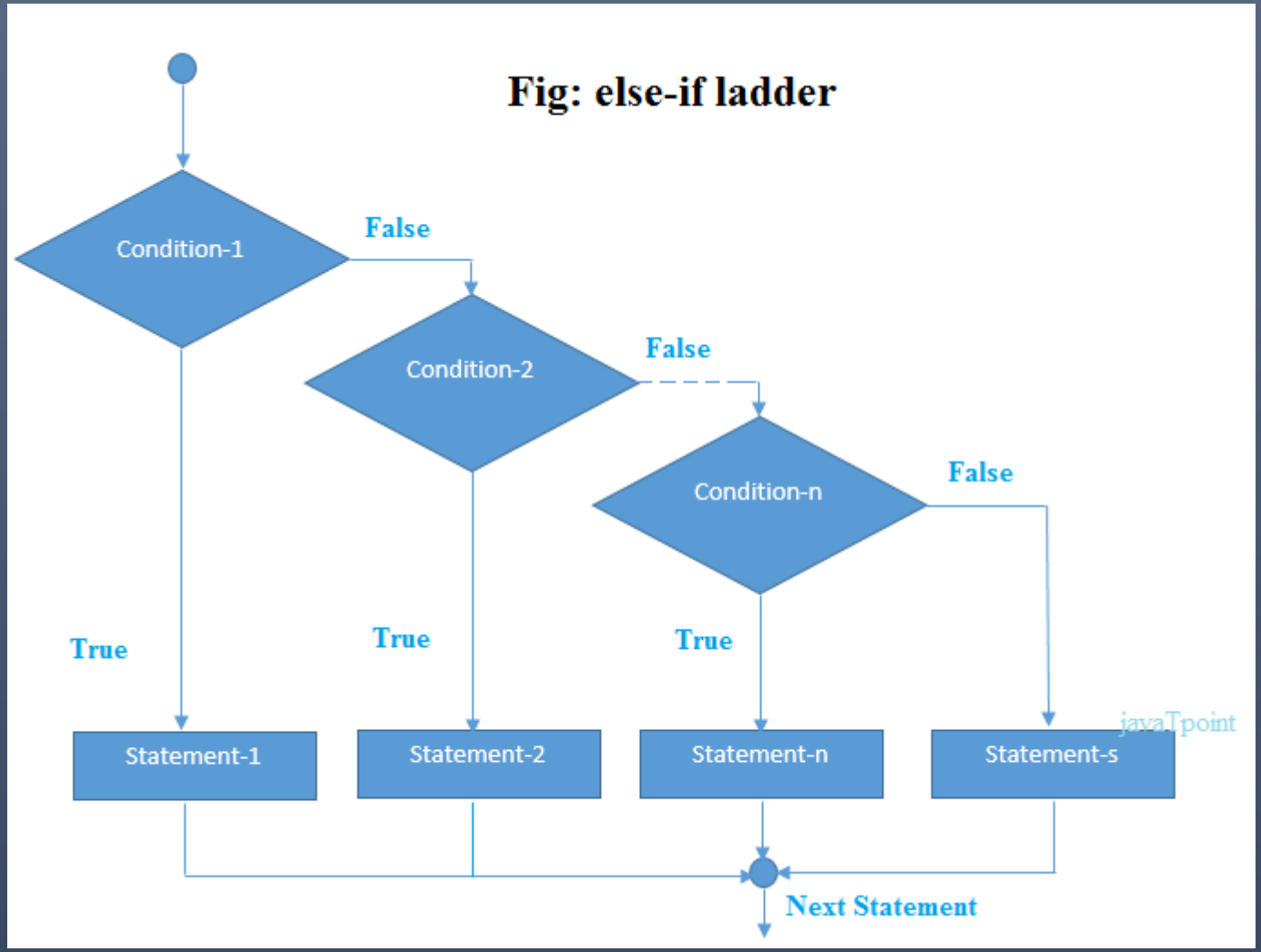
Fig: else-if ladder
Condition-1
False
Condition-2
False
Condition-n
False
True
True
True
Statement-1
Statement-2
Statement-n
Statement-s
javaTpoint
Next Statement

Alternative of if

```
if (score >= 90.0)
  grade = 'A';
else
  if (score >= 80.0)
    grade = 'B';
  else
    if (score >= 70.0)
      grade = 'C';
    else
      if (score >= 60.0)
        grade = 'D';
      else
        grade = 'F';
```

Equivalent

```
if (score >= 90.0)
  grade = 'A';
else if (score >= 80.0)
  grade = 'B';
else if (score >= 70.0)
  grade = 'C';
else if (score >= 60.0)
  grade = 'D';
else
  grade = 'F';
```

Switch Statements

```
switch (status) {
  case 0:  compute taxes for single filers;
           break;
  case 1:  compute taxes for married file jointly;
           break;
  case 2:  compute taxes for married file separately;
           break;
  case 3:  compute taxes for head of household;
           break;
  default: System.out.println("Errors: invalid status");
           System.exit(0);
}
```

Switch-case statement Example:

```
import java.util.Scanner;
public class HelloCSE {
public static void main(String[] args) {
      char grade;
      Scanner a = new Scanner(System.in);
      grade = a.next().charAt(0);
    switch (grade) {
      case 'A':
            System.out.println("Excellent!");
            break;
       case 'B':
      case 'C':
            System.out.println("Well done");
            break;
      case 'D':
            System.out.println("You passed");
            break;
       case 'F':
             System.out.println("Better try again");
            break;
       default:
            System.out.println("Invalid grade");
            }
          System.out.println("Your grade is " + grade);
        }
}
```

(GUI) Confirmation Dialogs

```
int option = JOptionPane.showConfirmDialog
    (null, "Continue");
```

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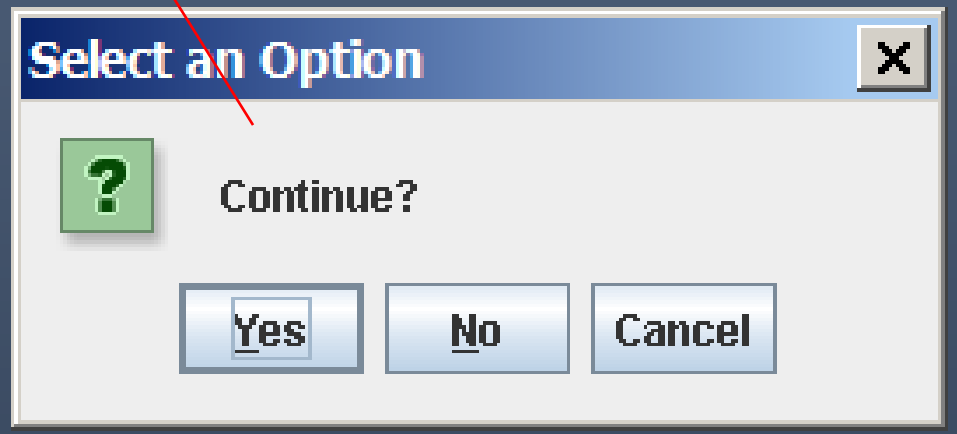

If else -(GUI) Confirmation Dialogs

```
import javax.swing.JOptionPane;

public class JavaApplication4{
public static void main(String[] args) {

    int option = JOptionPane.showConfirmDialog(null, "Yes-No statement");
        if (option == JOptionPane.YES_OPTION) {
             JOptionPane.showConfirmDialog(null, "The IF statement");
        }
        else if (option == JOptionPane.NO_OPTION) {
            JOptionPane.showConfirmDialog(null, "The ElSE statement");

        }
        else{
            JOptionPane.showConfirmDialog(null, "You have select cancel!");
        }
    }
}
```