Loop Structures and Strings

Ho Dac Hung

The while Statement

- The while statement is a loop structure, which executes a set of statements over and over again based on a condition. The while statement takes the form:

```
while (<condition>){
    <statements>
}
```

The do-while Statement

- The do-while statement is an alternative form of the while statement. In the do-while statement the condition is not evaluated until after the first execution of the loop. The do-while takes the following form:

  do {

      <statements>

  } while (<condition>);

Infinite Loops

- The condition of a loop is used to determine when the loop should stop executing. A while continues until its conditon is false. What happens though, if the condition never becomes false? The result is an infinite loop – one which continues forever.

4

The for Statement

- The for statement is a loop structure that executes a set of statements a fixed number of times. The for statement takes the form:

```
for (<init>; <condition>; <change value>){
    <statements>
}
```

Debugging Techniques

- The source of bugs, which are often logic errors, can be hard to determine withoud tools for debugging an application. Debugging is the process of getting an application work correctly.

- A debugger is used to select statements where execution will be suspsned. These statements are called breakpoints.

The String class

- Java includes the String class in the java.lang package for storing and manipulating strings. The String class is large, with numerous methods for string manipulation.

The String class

- charAt(int index)
- length()
- isEmpty()
- substring(int start, int end)
- substring(int start)
- toLowerCase()
- toUpperCase()
- trim()
- replace(String str1, String str2)
- …

Comparing Strings

- Strings are compared when determining equality or alphabetical order. Relational operators are used to compare primitive types. When objects need to be comparedm methods from their class are used. Some of the String class methods are used to compare strings.

Comparing Strings

- equals(String str)
- equalsIgnoreCase(String str)
- compareTo(String str)
- compareToIgnoreCase(String str)
- indexOf(String str)
- startWith(String str)
- endWith(String str)
- …