Menus

✴ common application approach: allow the user to choose what to do via a menu
✴ EX: have the user input real number and then use a menu to let the user choose to square the number, take its inverse, or quit

Pseudocode

✴ abstract pseudocode for what we want:

\[
\text{input } x \\
\text{build menu prompt string} \\
\text{while do it again} \\
\text{input menu choice} \\
\text{process menu choice}
\]
Input the Number

double x;
x = Input.readDouble("Enter the number: ");

Could echo now, but slicker to include the value in our menu prompt

Pseudocode

Abstract pseudocode for what we want:

```
input x
build menu prompt string
while do it again
  input menu choice
  process menu choice
```

Menu Prompt

Build our menu prompt string

```
String menu;
menu = "Choose what to do with " + x + "\n";
menu = menu + "a. Square it.\n"
menu = menu + "b. Take its inverse.\n"
menu = menu + "c. QUIT."
```

Pseudocode

Abstract pseudocode for what we want:

```
input x
build menu prompt string
while do it again
  input menu choice
  process menu choice
```
Loop Condition

* can often simplify the logic of a loop by using a boolean variable for the condition

```java
boolean again;
again = true;
while (again)
{
    // set again to false on quit
}
```

Pseudocode

* abstract pseudocode for what we want:

```
input x
build menu prompt string
while do it again
input menu choice
process menu choice
```

Menu Choice

* use `readChar` (or `readInt` as appropriate) to let the user choose from the menu

```java
choice = Input.readChar(menu);
Output.showValue("You chose ", choice);
```

- displays the menu prompt string we built earlier
- returns the user's choice
- we will validate the choice in the next step

Pseudocode

* abstract pseudocode for what we want:

```
input x
build menu prompt string
while do it again
input menu choice
process menu choice
```
Choice Pseudocode

✴ abstract pseudocode for processing a menu choice:
  if first choice chosen
    do first choice action
  else if second choice chosen
    do second choice action
  ... etc...
  else if quit chosen
    again = false
  else
    output “invalid choice”

Source Code

✴ see Menu.java for the choice processing code
✴ spend some time looking at and experimenting with Menu.java

Module 15 Vocabulary

no new vocabulary

Questions?

Email Kevin at sahrk@sou.edu