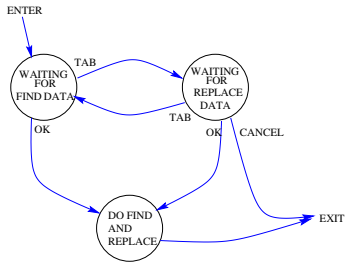
Notes on tutorial #8 (for week 12 - March 26, 2004)

April 8, 2004

Q1: The following state diagram specifies the allowable interactions between a user of a find-and-replace dialog, and the program. The circles represent valid states, such as *waiting-for-find-data*, and *waiting-for-replace-data*. The labelled transitions (TAB, OK, CANCEL) indicate allowable ways to move from one state to another - i.e. by pressing the TAB key you can switch between *entering-the-FIND-string* and *entering-the-REPLACE-string*. What is wrong with the specified interaction?

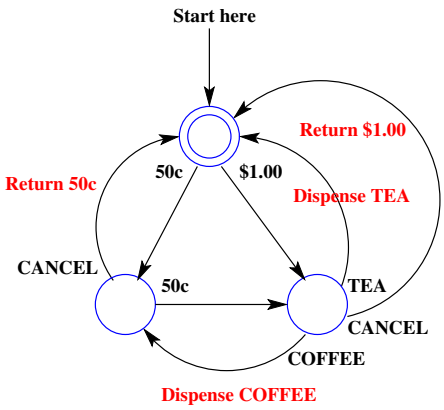


Answer:

No way to cancel from WAITING FOR FIND DATA

Q2: In state transition diagrams, circles represent valid states, such as *waiting-for-universe-to-end*. Labelled transitions (COFFEE, TEA, CANCEL, 50c, $1.00) indicate allowable ways to move from one state to another - i.e. by pressing the COFFEE key you can dispense coffee and switch to another state. Each transition is also associated with an action (DISPENSE TEA, RETURN 50c).
Specify a state transition diagram for a coffee machine which dispenses cups of 50c coffee, and cups of $1.00 tea. The machine allows people to put in either $1.00 or 50c coins, and then allows the person to select either a coffee or a tea, or to cancel the transaction. If $1.00 is put into the machine, it will accept no more coins until either a coffee or tea is dispensed. The machine should allow you to dispense either a coffee or a tea if there is enough money for the drink. The machine should return any over-payment (for example you should be able to pay $1.00 and dispense coffee, and then CANCEL to get 50c back. In addition you should be able to pay $1.00, dispense coffee, then pay another 50c and have tea.).

Answer: *Something like this:*



Q3: When programming using the AWT toolkit, when you add something to a frame, you would do something like

```
...    frame.add(panel,BorderLayout.CENTER);
```

However in Java/Swing you write

```
...    frame.getContentPane().add(panel,BorderLayout.CENTER);
```

Why is this done? What advantage does it give us?

Answer:

Separation of content from frame.

Q4: Given that you were planning to deliver a web-based application, list the major points that would lead you to choose CGI, PHP or Java for application delivery.

Answer:

CGI *Speed not concern, Processor load not concern, need to consider/use multiple languages*

PHP *Database access, Processor load not concern.*

Java *Local processing needed, more complex UI.*

In addition, you may consider other factors such as the exisiting environment, portability, technical support...

Q5: Differentiate between *accessability* and *internationalization* with reference to Java/Swing features. Briefly define each, and then outline at least one example of a Java/Swing accessability feature, and one example of a Java/Swing internationalization feature.

Answer:

For differentiating. Accessibility means software for improving interaction with people with disabilities. Internationalization refers to multi-languages.

Examples such as customizable fonts, keyboard shortcuts, the use of MVC and so on.