

## 6. Exemplary Solutions: Seaside: Components

### Exercise 6.1

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```
STBuyTicketTask class >> canBeRoot
  ^true
```

```
STBuyTicketTask >> go
  self inform: 'Hello World'
```

---

### Exercise 6.2

---

```
WComponent subclass: #STPlayChooser
  instanceVariableNames: 'plays'
  classVariableNames: ''
  poolDictionaries: ''
  category: 'Tutorial-Theater-View'
```

```
STPlayChooser >> initialize
  super initialize.
  self plays: OrderedCollection new.
```

```
STPlayChooser >> plays: aCollection
  plays := aCollection asOrderedCollection
```

```
STPlayChooser >> plays
  ^ plays
```

```
STBuyTicketTask >> go
  self call: (STPlayChooser new plays: STTheater default plays)
```

---

### Exercise 6.3

---

```
WComponent subclass: #STPlayChooser
  instanceVariableNames: 'plays'
  classVariableNames: ''
  poolDictionaries: ''
  category: 'Tutorial-Theater-View'
```

```
STPlayChooser >> renderContentOn: html
  self plays do: [:play |
    html div class: #play; with: [
      html div class: #head; with: [
        html text: play title; space;
        text: '(' , play kind, ')'; space;
```

---

```
                text: '-' ; space;
                text: play author].
html div class: #body; with: [html text: play description] ] ]

STPlayChooser >> style
^'.sort
background: #eeeeee;
padding: 5px;

.play
margin-top: 10px;

.play .head
font-size: 16pt;

.play .body
margin-left: 10px;
width: 490px;
'
```

---

## Exercise 6.4

---

```
STPlayChooser >> renderContentOn: html
  self plays do: [:play |
    html div class: #play; with: [
      html div class: #head; with: [
        html anchor callback: [self answer: play];
          with: [html text: play title].
      html space
        text: '(' ,play kind, ')' ; space;
        text: '-' ; space;
        text: play author].
    html div class: #body; with: [html text: play description] ] ]

STBuyTicketTask >> go
  | answer |
  answer := self call: (STPlayChooser new plays: STTheater default plays).
  self inform: 'Selected play: ', answer title.
```

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## Exercise 6.5

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```
STPlayChooser >> initialize
  super initialize.
  self plays: OrderedCollection new.
  self sortState: #title.
```

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```
self sortOrder: #<=.

STPlayChooser >> toggleSortOrder
  sortOrder = #<= ifTrue: [sortOrder := #>=] ifFalse: [sortOrder := #<=].

STPlayChooser >> plays
  ^plays asSortedCollection: [:a :b |
    (a perform: self sortState) perform: self sortOrder
    with: (b perform: self sortState)]

STPlayChooser >> renderContentOn: html
  | sortTypes |
  sortTypes := #(#title #kind #author).
  html div class: #sort; with: [
    sortTypes do: [:sortType |
      html anchor callback: [self sortState: sortType.
        self toggleSortOrder];
        with: [ | textSelector |
          textSel := sortType = self sortState
            ifTrue: [#strong:] ifFalse: [#text:].
          html perform: textSel with: sortType asString capitalized].
      html space] ].
  ...
```

---

## Exercise 6.6

```
WAComponent subclass: #STShowChooser
  instanceVariableNames: 'shows selection'
  classVariableNames: ''
  poolDictionaries: ''
  category: 'Tutorial-Theater-View'

STShowChooser >> initialize
  super initialize.
  self shows: OrderedCollection new.
  self selection: nil.

STBuyTicketTask >> go
  | play |
  play := self call: (STPlayChooser new plays: STTheater default plays).
  self call: (STShowChooser new shows: play shows).
```

---

## Exercise 6.7

```
STShowChooser >> shows
```

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```
^ shows asSortedCollection: [:a :b | a timestamp <= b timestamp].
```

```
STShowChooser >> selectNext  
| now nextShow |  
now := TimeStamp now.  
nextShow := self shows detect: [:show | show timestamp >= now] ifNone: [nil].  
self selection: nextShow.
```

```
STShowChooser >> renderContentOn: html  
html form: [  
  html select  
    class: #shows;  
    list: self shows;  
    selected: self selection;  
    labels: [:each | each play title, ' - ', each date displayString,  
              ' ', each time displayString];  
    callback: [:show | self selection: show];  
    size: 10.  
  html break.  
  html button value: 'Next'; callback: [self selectNext].  
  html space.  
  html submitButton value: 'Ok'; callback: [  
    self selection ifNotNil: [self answer: self selection]  
    ifNil: [self inform: 'No show selected'] ] ]
```

```
STShowChooser >> style  
''.filter {  
background: #eeeeee;  
padding: 5px;  
margin-bottom: 5px;  
}  
.shows {  
width: 500px  
}'
```

```
STBuyTicketTask >> go  
| play answer |  
play := self call: (STPlayChooser new plays: STTheater default plays).  
answer := self call: (STShowChooser new shows: play shows).  
self inform: 'Selected show: ', answer timestamp asString.
```

---

## Exercise 6.8

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```
STShowChooser >> initialize  
  super initialize.
```

---

```
self shows: OrderedCollection new.
self selection: nil.
self startDate: nil.
self endDate: Date today + (Duration days: 30)

STShowChooser >> shows
| sorted |
sorted := shows asSortedCollection: [:a :b | a timestamp <= b timestamp].
^ self startDate ifNil: [sorted]
    ifNotNil: [sorted select: [:show |
        show date between: self startDate and: self endDate]].

STShowChooser >> dates
^Array streamContents:
    [:stream |
    0 to: 30*6 do: [:i |
        stream nextPut: (Date today + (Duration days: i)) ] ].

STShowChooser >> renderContentOn: html
html form: [
    html div class: #filter; with: [
        html text: 'Filter from: '.
        html select
            list: self dates;
            selected: self startDate;
            labels: [:each | each asString];
            callback: [:date | self startDate: date];
            beSubmitOnChange.
    html text: ' to: '.
    html select
        list: self dates;
        selected: self endDate;
        labels: [:each | each asString];
        callback: [:date | self endDate: date];
        beSubmitOnChange.
    html space.
    html submitButton value: 'Update'].
...

```

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## Exercise 6.9

One possible way is to use radio buttons that also allow users to select just one single show. Instead of using #select, we use #radioGroup and #radioButton:

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```
STShowChooser >> renderContentOn: html
```

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```
...
html radioGroup: [:group |
  self shows do: [:show |
    html radioButton
      selected: self selection = show;
      group: group;
      with: ' ', show play title, ' - ', show date displayString,
          ' ', show time displayString;
      callback: [self selection: show].
    html break ] ].
...
```

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### Exercise 6.10

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```
WComponent subclass: #STTicketChooser
  instanceVariableNames: 'show requiredTickets'
  classVariableNames: ''
  poolDictionaries: ''
  category: 'Tutorial-Theater-View'

STTicketChooser >> requiredTickets: anIntegerOrString
  requiredTickets := anIntegerOrString asInteger.

"The mutator of 'show' should not be called #show:
as this method exists in superclasses"
STTicketChooser >> setShow: aShow
  show := aShow

STTicketChooser >> buyTickets
  self answer: (self show nextTickets: self requiredTickets)

STTicketChooser >> renderContentOn: html
  html form: [
    html table: [
      html tableRow: [
        html tableData: [html text: 'Free places:'].
        html tableData: [html text: self show placesFree asString] ].
      html tableRow: [
        html tableData: [html text: 'Required places:'].
        html tableData: [
          html textInput
            value: self requiredTickets;
            callback: [:value | self requiredTickets: value];
            size: 4 ] ] ].
    html submitButton value: 'Ok'; callback: [
```

---

```
        self requiredTickets isInteger
          ifFalse: [self inform: 'Please enter a valid number of places']
          ifTrue: [self show placesFree < self requiredTickets
                  ifTrue: [self inform: 'Not enough places available']
                  ifFalse: [self buyTickets]]].
html cancelButton
  value: 'Cancel';
  callback: [requiredTickets := nil] ].

STBuyTicketTask >> go
  | play show |
  play := self call: (STPlayChooser new plays: STTheater default plays).
  show := self call: (STShowChooser new shows: play shows).
  self call: (STTicketChooser new setShow: show).
```

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## Exercise 6.11

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```
WAComponent subclass: #STTicketPrinter
  instanceVariableNames: 'tickets'
  classVariableNames: ''
  poolDictionaries: ''
  category: 'Tutorial-Theater-View'

STTicketPrinter >> style
  ^'.ticket {
padding: 5px;
border: 1px solid #000000;
margin-bottom: 10px;
width: 500px;
}
big {
font-weight: bold;
}'

STTicketPrinter >> renderContentOn: html
  self tickets withIndexDo: [:ticket :i |
    html div class: #ticket; with: [
      html text: ticket show play theater name; break.
      html big: ticket show play title; space;
      big: '(', i asString, '/', self tickets size asString, ')';
      break.
      html paragraph: [
        html text: ticket show date asString;
        break;
        text: ticket show time].
```

---

```
html text: 'Ticket: ', ticket id asString] ].
```

```
STBuyTicketTask >> go  
| play show tickets |  
play := self call: (STPlayChooser new plays: STTheater default plays).  
show := self call: (STShowChooser new shows: play shows).  
tickets := self call: (STTicketChooser new setShow: show).  
self call: (STTicketPrinter new tickets: tickets).
```

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