

**Solution** ^ Visible to students ☐

Not a valid encoding. The distance between cities 2 and 3 is not given.

(e) 4;10;(1,2,1)(1,3,5)(2,3,4)(1,4,5)(2,4,2)(3,4,3)(2,4,2)

**Solution** ^ Visible to students ☐

Not a valid encoding. The distance between cities 2 and 4 is given twice.

(f) 4;11;(((1,2,1)(1,3,5)8(2,3,4)(1,4,5)(2,4,2)(3,4,3)

**Solution** ^ Visible to students ☐

Not a valid encoding. Three left parentheses in a row.

4/12/23 19:40 188726  
Ryan Hermle  
LOSRIOSISP440HermleFall2019

## 7.7 Gumball Machine

We will implement the Gumball Machine FSM from section 7.4. Please see the starter code below. I have provided a basic structure for the state machine as well as enums to be used for indexing and string arrays to pass the enums into. This will also ensure that your string output matches what my tester is looking for.

The only modifications made to the state machine in 7.4 are:

- Output the state after each event for clarity
- A message for an invalid input since we are using the keyboard
  - If an input is invalid, output the INVALID string and loop
- An additional input to QUIT and exit the program loop

A sample output using the strings from the starter code is as follows:

```
NICKEL, DIME, BUY, or QUIT: NICKEL
```

```
Current state: q5
```

```
NICKEL, DIME, BUY, or QUIT: BUY
```

```
Insufficient funds. Cannot buy.
```

```
Current state: q5
```

```
NICKEL, DIME, BUY, or QUIT: DIME
```

```
Current state: q15
```

```
NICKEL, DIME, BUY, or QUIT: BUY
```

```
Insufficient funds. Cannot buy.
```

©zyBooks 04/12/23 19:40 188726  
Ryan Hermle  
LOSRIOSISP440HermleFall2019

Current state: q15  
NICKEL, DIME, BUY, or QUIT: DIME  
Exact change required. Returning coin.

Current state: q15  
NICKEL, DIME, BUY, or QUIT: NICKEL

Current state: q20  
NICKEL, DIME, BUY, or QUIT: BUY  
Gumball dispensed. Have a nice day.

Current state: q0  
NICKEL, DIME, BUY, or QUIT: DIME

Current state: q10  
NICKEL, DIME, BUY, or QUIT: BUY  
Insufficient funds. Cannot buy.

Current state: q10  
NICKEL, DIME, BUY, or QUIT: QUIT

©zyBooks 04/12/23 19:40 188726  
Ryan Hermle  
LOSRIOSISP440HermleFall2019

178542.377452.qx3zqy7

LAB  
ACTIVITY

7.7.1: Gumball Machine

0 / 10



## Submission Instructions

Downloadable files

main.cpp

[Download](#)

Compile command

g++ main.cpp -Wall -o a.out

*We will use this command to compile your code*

Upload your files below by dragging and dropping into the area or choosing a file on your hard drive.

©zyBooks 04/12/23 19:40 188726  
Ryan Hermle  
LOSRIOSISP440HermleFall2019

main.cpp

Drag file here  
or

[Choose on hard drive.](#)