Design for program

Diagram labels:

switch — user choice — quit = false

case 1 — add
ValidQuantity = F
ExceedCapacity = F
How many
while !VQ
1 - 10?
VQ = T — yes
VQ = F — no
exceeds max
NO — yes EC = T
ValidSides = F
what kind? D-
while !VS
correct side?
yes — VS = T
no — VS = F
put in bag
another die
yes
no — list total dice info

case 2 — remove
Bag empty
YES — bag empty
NO — removes 1 random dice

case 3 — quit q = true
list final dice info
quits
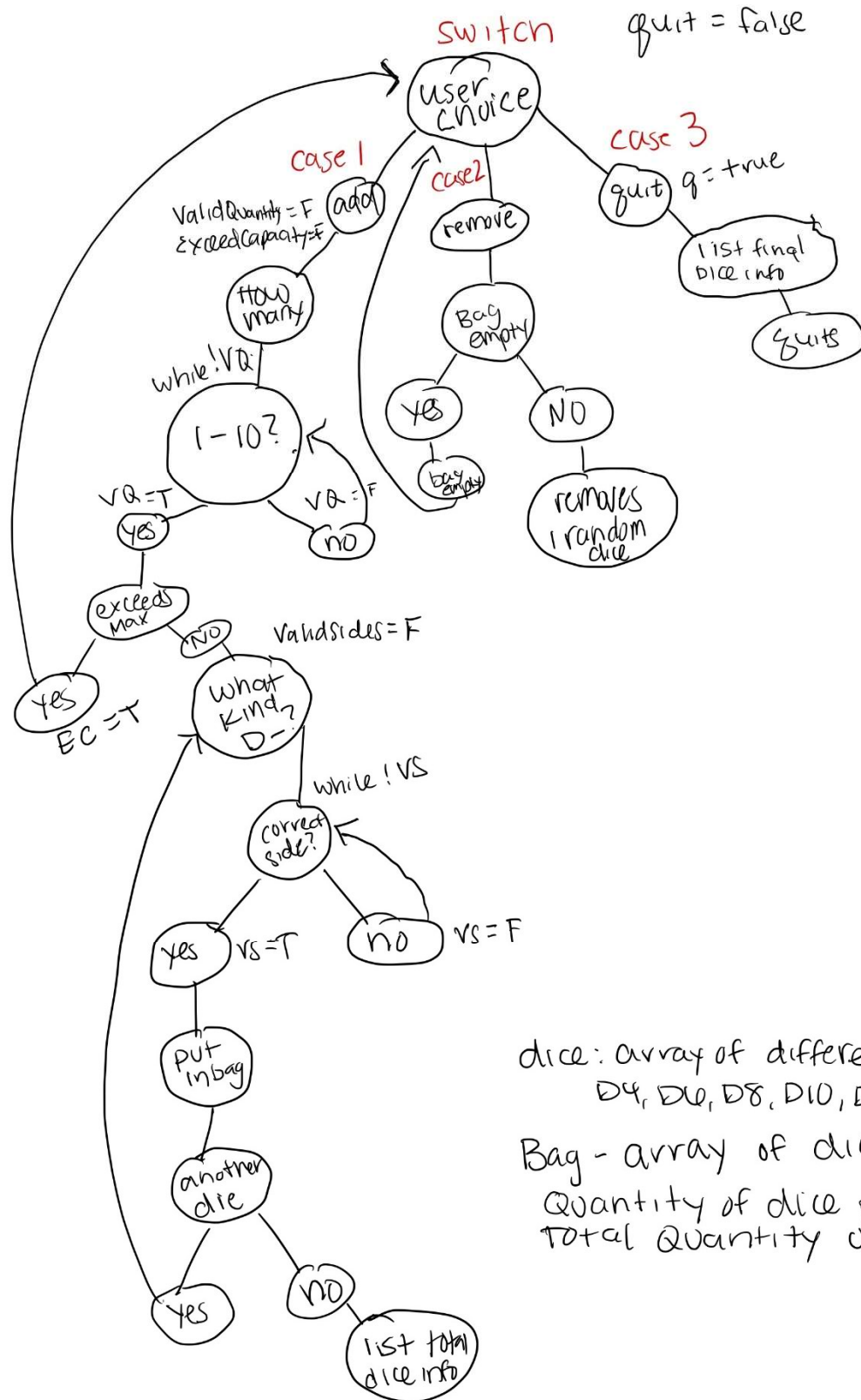
dice: array of different sides
D4, D6, D8, D10, D12, D20

Bag - array of dice
Quantity of dice per side
Total quantity of dice

Tests:

Can you only choose one of the cases (+,-,q)?

```
Would you like to add (+) dice to the bag, remove a (-) die from the bag, or quit (q)? 2
Invalid choice. Please choose '+' to add, '-' to remove, or 'q' to quit.
```

Does reaching max capacity bring me to the original question?

```
Contents of bag:
10 D4
Total dice in bag:10

Would you like to add (+) dice to the bag, remove a (-) die from the bag, or quit (q)? +
Please enter quantity of dice to add (up to 10): 2

This exceeds the max capacity of the bag. Please try a different option.

Contents of bag:
10 D4
Total dice in bag:10

Would you like to add (+) dice to the bag, remove a (-) die from the bag, or quit (q)? █
```

Does it loop until I choose a valid quantity (1-10)?

```
Please enter quantity of dice to add (up to 10): 11

Invalid quantity. Please enter a quantity between 1 and 10.

Please enter quantity of dice to add (up to 10): ▯
```

Does it loop until a valid side is chosen?

```
Would you like to add (+) dice to the bag, remove a (-) die from the bag, or quit (q)? +
Please enter quantity of dice to add (up to 10): 1
Enter number of sides for dice 1 (4, 6, 8, 10, 12, or 20): -5
Invalid number of sides. Please try again.
Enter number of sides for dice 1 (4, 6, 8, 10, 12, or 20): 3
Invalid number of sides. Please try again.
Enter number of sides for dice 1 (4, 6, 8, 10, 12, or 20): 100
Invalid number of sides. Please try again.
Enter number of sides for dice 1 (4, 6, 8, 10, 12, or 20): 1
Invalid number of sides. Please try again.
Enter number of sides for dice 1 (4, 6, 8, 10, 12, or 20): 4

Contents of bag:
11 D4
Total dice in bag:11
```

Will it only remove a dice that's in the bag?

```
Contents of bag:
1 D4
1 D6
1 D8
1 D12
1 D20
Total dice in bag:5

Would you like to add (+) dice to the bag, remove a (-) die from the bag, or quit (q)? -

You drew a D20.

Contents of bag:
1 D4
1 D6
1 D8
1 D12
Total dice in bag:4

Would you like to add (+) dice to the bag, remove a (-) die from the bag, or quit (q)? -

You drew a D8.

Contents of bag:
1 D4
1 D6
1 D12
Total dice in bag:3

Would you like to add (+) dice to the bag, remove a (-) die from the bag, or quit (q)? █
```

Repeated this one several times and it would only remove what is in the bag.