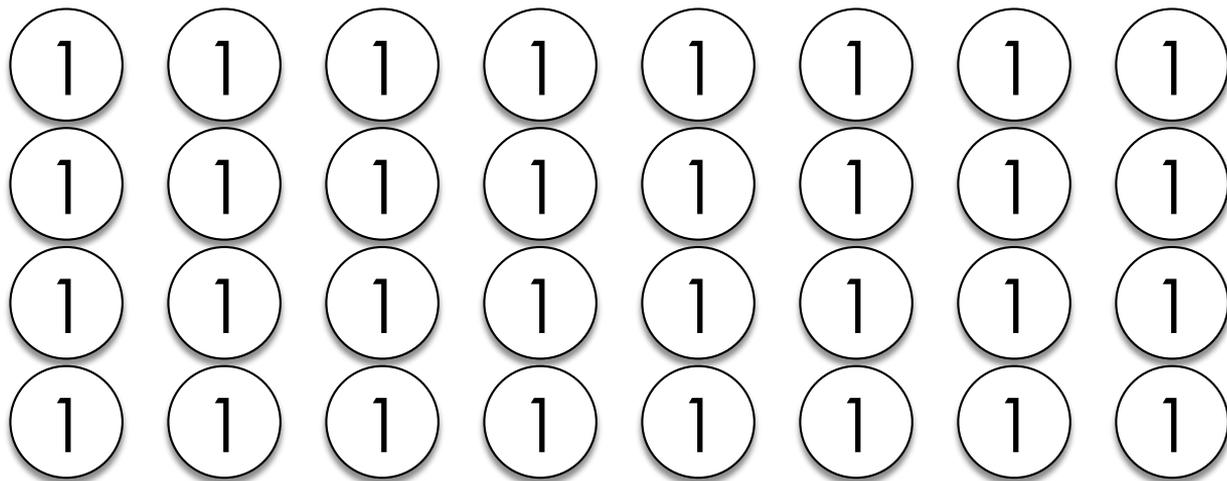
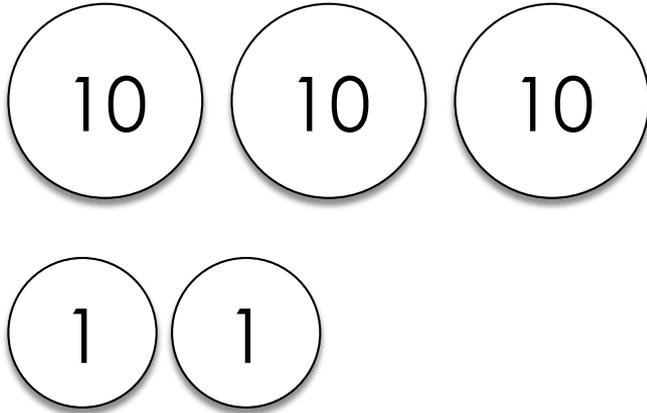


greedy

32 ¢



also 32 ¢



# use the largest coin possible

- quarter      25 ¢
- dime         10 ¢
- nickel        5 ¢
- penny        1 ¢

# use the largest coin possible

1. Can I use a **quarter** [**\$0.25**]? Yes!
2. Can I use another quarter? No.
3. Can I use a **dime** [**\$0.10**]? No.
4. Can I use a **nickel** [**\$0.05**]? Yes!
5. Can I use a **penny** [**\$0.01**]? Yes!
6. Can I use another penny? Yes!
7. Can I use another penny? No.

Change Owed:  
\$0.00

Coins Used:  
4

# example

\$ ./greedy

Change: .32

4

# TODO

- prompt user for an amount of change
- always use the largest coin possible
- keep track of coins used
- print the final number of coins

# TODO

- prompt user for an amount of change
  - the amount must make sense
  - what values are accepted?
  - `get_float`
- always use the largest coin possible
- keep track of coins used
- print the final number of coins

# do-while loops

```
float n;  
do  
{  
    n = get_float();  
}  
while (n is invalid);
```

what should this condition be?



# dollars (\$) to cents (¢)

- input is a value in dollars
- convert: 1 \$ = 100 ¢
- floating-point imprecision
- round

# TODO

- prompt user for an amount of change
- always use the largest coin possible
- keep track of coins used
  - how many coins to be returned
  - amount to be returned
- print the final number of coins

# pseudocode

```
get amount in dollars
while (quarters can be used)
    increase count
    decrease amount by a quarter
while (dimes can be used)
    increase count
    decrease amount by a dime
(etc...)
print number of coins used
```

# modulo math

- % returns the remainder of the division
  - $50 \% 5 = 0$
  - $50 \% 10 = 0$
  - $50 \% 50 = 0$
  - $50 \% 49 = 1$
  - $53 \% 50 = 3$

# use the largest coin possible

1. Can I use **quarters [25 ¢]**? Yes!
2. Can I use **dimes [10 ¢]**? No.
3. Can I use **nickels [5 ¢]**? Yes!
4. Can I use **pennies [1 ¢]**? Yes!

Change Owed:  
 $2 \% 1 = 0 \text{ ¢}$

Coins Used:  
4

# TODO

- prompt user for an amount of change
- always use the largest coin possible
- keep track of coins used
- print the final number of coins**

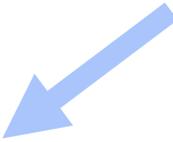
```
printf("I have 3 pets\n");
```

```
int n;
```

...

```
printf("I have %i pets\n", n);
```

placeholder for an integer



variable to be printed

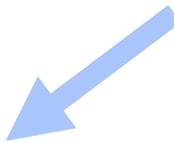


```
float n;
```

...

```
printf("I have %f dollars\n", n);
```

placeholder for a float



variable to be printed



```
int dogs, cats;
```

```
...
```

```
printf("I have %i dogs and %i cats\n", dogs, cats);
```

placeholders



variables

# TODO

- ☑ prompt user for an amount of change
- ☑ always use the largest coin possible
- ☑ keep track of coins used
- ☑ print the final number of coins

this was greedy