



## APCS 2009-2010: Scratch Final Test Part 2

1. What does this code need? (3 points)

```
when CoinJar clicked
set dimes to 0
set nickels to 0
set pennies to 0
set quarters to 0
set total_dollars_cents to 0
say I will tell you how much money is in your jar! for 2 secs
ask How many quarters? and wait
set quarters to answer
ask How many dimes? and wait
set dimes to answer
ask How many nickels? and wait
set nickels to answer
ask How many pennies? and wait
set pennies to answer
say Please wait while I convert... for 2 secs
```

- You can't use the same blue answer tile for all 4 types of coins; new answer variables are needed for each.
- You need to create a "counter" variable in order to be able to count anything.
- A tile that sets total\_dollars\_centers to a calculation.
- The answer tile for dimes needs to be nested inside of a division operator.

2. What's wrong with this code? (3 points)

```

when space key pressed
set count to 0
ask How many days do you want to calculate? and wait
set days to answer
ask What is the interest rate? and wait
set rate to answer
forever
set newAmount to startAmount * rate + startAmount
change count by 1
    
```

- new\_amount needs to be divided by 100 before the rest of the tiles in the forever loop.
- The blue answer tile for rate needs to be nested inside an \* operator and multiplied by 100.
- When calculating how many times a loop executes, it's better to increment by 2.
- The amount for "days" should be used to calculate the end of the loop. It's never used, so this loop will execute forever.

3. What's wrong with this code (3 points)

```

when green flag clicked
set counter to 0
ask What month were you born? and wait
set day to answer
ask What day were you born? and wait
set month to answer
    
```

- the "set variable to answer" tiles need to come in front of the "ask for user input" tiles.
- The "change counter by 1" tile needs to be inserted after both blue answer tiles.
- When the green flag is clicked, the counter should be set to -1.
- month and day should be switched. Right now, the wrong user input is being stored in each variable.

4. What happens if the user inputs their month as 3 and their day as 21? (3 points)

```

when clicked
  set counter to 0
  ask "What month were you born?" and wait
  set day to answer
  ask "What day were you born?" and wait
  set month to answer
  if month = 3 and day = 21
    say "You will have a wonderful day today!" for 2 secs
  else
    say "Sorry life has been so difficult lately..." for 2 secs
    
```

- It says "Sorry life has been so difficult lately..."
- The code does nothing.
- It says "You will have a wonderful day today!"

5. What happens if the user inputs their month as 3 and their day as 21? (3 points)

```

when clicked
  set counter to 0
  ask "What month were you born?" and wait
  set month to answer
  ask "What day were you born?" and wait
  set day to answer
  if month = 3 and day = 21
    say "You will have a wonderful day today!" for 2 secs
  else
    say "Sorry life has been so difficult lately..." for 2 secs
    
```

- It says "You will have a wonderful day today!"
- It says "Sorry life has been so difficult lately."
- The code does nothing.

6. What happens if the user inputs their month as 4 and their day as 21? (3 points)

```

when clicked
set counter to 0
ask "What month were you born?" and wait
set month to answer
ask "What day were you born?" and wait
set day to answer
if month = 3 or day < 22
say "You will have a wonderful day today!" for 2 secs
else
say "Sorry life has been so difficult lately..." for 2 secs
    
```

- It says "You will have a wonderful day today!"
- It says "Sorry life has been so difficult lately."
- The code does nothing.

7. What happens if the user inputs their month as 4 and their day as 21? (3 points)

```

when clicked
set counter to 0
ask "What month were you born?" and wait
set month to answer
ask "What day were you born?" and wait
set day to answer
if month = 3 and day < 22
say "You will have a wonderful day today!" for 2 secs
else
say "Sorry life has been so difficult lately..." for 2 secs
    
```

- It says "You will have a wonderful day today."
- It says "Sorry life has been so difficult lately"
- The code does nothing.

8. What's wrong with this code? (3 points)

```

when green flag clicked
  set counter to 0
  ask "What month were you born?" and wait
  set month to answer
  ask "What day were you born?" and wait
  set day to answer
  if (month = 3 or day < 22)
    say "You will have a wonderful day today!" for 2 secs
    change counter by 1
  else
    say "Sorry life has been so difficult lately..." for 2 secs
    
```

- The "change counter by 1" tile needs to be moved to right after "when green flag is clicked"
- The month and day answer tiles need to be switched.
- Right now, the counter will only count if your month is 3 or your day is less than 22. It needs to change by 1 no matter when your birthday is.
- "change counter by 1" should say "change counter by -1"

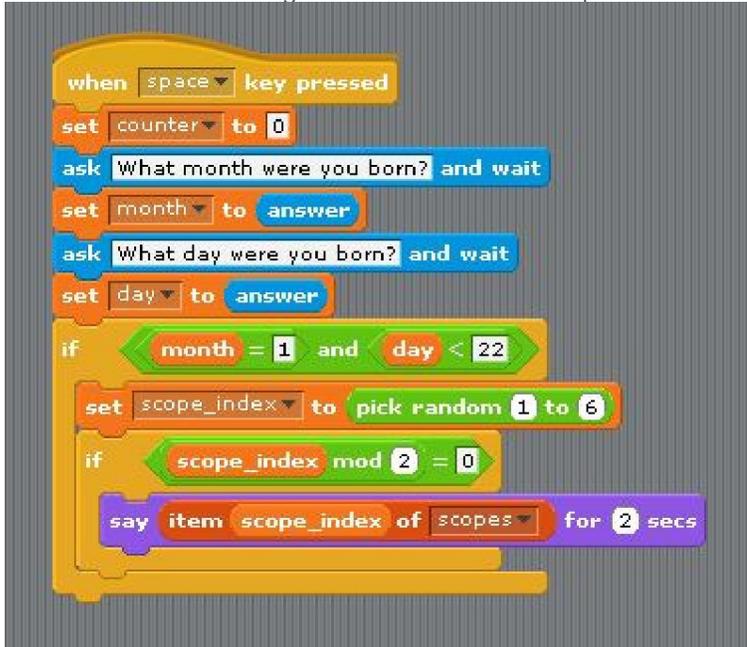
9. What does the following code do if the user's input for month is 1 and day is 21? (3 points)

```

when green flag clicked
  set counter to 0
  ask "What month were you born?" and wait
  set month to answer
  ask "What day were you born?" and wait
  set day to answer
  if (month = 1 and day < 22)
    set scope_index to pick random 1 to 6
    say item scope_index of scopes for 2 secs
    
```

- It says a random horoscope drawn from between index 1 and 6 of the list.
- It says the first horoscope in the list.
- It says "scope\_index" for 2 secs.
- The code does nothing.

10. What does the following code do if the user's input for month is 1 and day is 21? (3 points)



```
when space key pressed
  set counter to 0
  ask What month were you born? and wait
  set month to answer
  ask What day were you born? and wait
  set day to answer
  if month = 1 and day < 22
    set scope_index to pick random 1 to 6
    if scope_index mod 2 = 0
      say item scope_index of scopes for 2 secs
```

- It randomly generates a horoscope but only says it if the horoscopes index number is odd.
- The code does nothing.
- It generates a random horoscope and then says it.
- It randomly generates a horoscope but only says it if the horoscopes index number is even.