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Activity - Python IF-ELSE - "The Dating Equation"

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Python Activity: IF-ELSE Statements “The Dating Equation”

Learning Objectives

Students will be able to:

- Implement the logic of conditional statements
- Write code using the Python syntax for if/else statements
- Demonstrate debugging skills
- Determine good test data for programs that include if/else statements

There is a popular (though not remotely scientific) notion when it comes to relationships that **“you should never date anyone younger than half your age plus seven”**.

How can we take that idea and write a functional computer program around it?

First, we’ll need to ask the user how old they are. Then, we’ll need to ask the user how old is the person they have a crush on.

Then, we’ll need to implement our algorithm. In this case, it’s a simple formula (“half your age plus seven”) that we need to turn into code. The result will represent the minimum age that you can date someone without it being creepy.

Finally, we’ll need to display a message to the user letting them know if this is super creepy or not, based on whether their crush’s age is less than the number determined by our previous formula.

In Python, the code would look similar to this:

```
# The Dating Equation

# Get input from the user

myAge = int(input("How old are you: "))
crushesAge = int(input("How old is the person you're crushing on: "))

# Algorithm:
# You should never date anyone younger than half your age plus seven

creepyFactor = (myAge / 2) + 7
```



```
# Tell the user if they are super creepy, or not
if crushesAge < creepyFactor:
    print("You are super duper creepy!")
else:
    print("This is socially acceptable, but the fact that you even")
    print("had to ask is still pretty creepy.")
```

1. Type the code above, save the file with a .py extension, and run the program in the Terminal. If you receive any error messages, determine what the problems are likely to be and debug your code.
2. Once you can run the program with no error messages, try it out. Does it work? How can you know if it is working correctly? What test data would be the best choice to use in order to determine if it is working correctly?
3. CHALLENGE ASSIGNMENT: Flip the program to figure out if the person is too **old** for you. First, figure out the logic. **“You should never date anyone older than _____.”** Second, edit the code to implement your new algorithm. Third, test it to ensure that it works correctly.
4. CHALLENGE ASSIGNMENT: Add the necessary IF/ELSE statements to make sure that if someone is 18 years old or older, the program will never advise them to date someone younger than 18. (Hint: you may want to try Nested If statements).
5. CHALLENGE ASSIGNMENT: Be creative and think of other factors that you might consider in your own personal “dating equation”? For instance, would you want to alter the formula slightly if, say, the person you had a crush on was a multibillionaire? Would you factor in their level of education? Where they lived? If they had a criminal record? Implement your ideas in the code.
6. Take a step back from the code and think about the validity of this “idea” behind the dating equation. What are the problems with trying to quantify whether it is socially acceptable to date a person? Do you believe the formula is meant to apply more to men or to women, or does it apply to both equally? What might your answer reveal about how social and cultural attitudes work their way into commonly used software?

