Using Python to Create a Program for Calculating the Amount of Paint Cans Needed to Paint Rooms

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Introduction:
- Our research project was researching dry wall absorption and Python
- We hope this will bring to light new ideas in industry and to add to the Fourth Industrial Revolution
- This could help to provide an analysis data base for painters

Method:
- Learned how to use Python
- Created program but then learned more about Python and realized the program can be written neater
- Studied paint usage, dry wall absorption, and human error

Future Directions:
- Analyze the absorption rate of more paints
- Determine if color is a factor of the absorption rate in a paint
- Determine humidity ratios for paint absorption
- Learn how to write the program more efficiently with more variables

```python
if rooms == 1:
    r1 = float(input("For the first room, what is the square feet of one of the walls?\n"))
    r2 = float(input("For the same room, what is the square feet of the adjacent wall?\n"))
    sqft = (r1 * 2) + (r2 * 2)
    doors = float(input("How many doorways are there?\n"))
    if doors == 1:
        d1 = float(input("What is the square feet of the doorway?\n"))
        dsqft = d1
        ltrim = float(input("What is the total length of trim in feet?\n"))
        wtrim = float(input("What is the width of the trim in feet? Express as a decimal.\n"))
        tsqft = (ltrim * wtrim)
        windows = float(input("How many windows are there?\n"))
        if windows == 1:
            w1 = float(input("What is the square feet of window?\n"))
            wsqft = w1
            witrim = float(input("What is the width of the trim around the window in feet? Expr
            letrim = float(input("What is the total length of the trim in feet?\n"))
            wsqft = (witrim * letrim)
    if doors == 2:
        d1 = float(input("What is the square feet of the first doorway?\n"))
        d2 = float(input("What is the square feet of the second doorway?\n"))
        dsqft = (d1 + d2)
        ltrim = float(input("What is the total length of trim in feet?\n"))
        wtrim = float(input("What is the width of the trim in feet? Express as a decimal.\n"))
    if doors == 3:
        d1 = float(input("What is the square feet of the first doorway?\n"))
        d2 = float(input("What is the square feet of the second doorway?\n"))
        d3 = float(input("What is the square feet of the third doorway?\n"))
        dsqft = (d1 + d2 + d3)
        ltrim = float(input("What is the total length of trim in feet?\n"))
        wtrim = float(input("What is the width of the trim in feet? Express as a decimal.\n"))
```

First attempt at program

```python
starter = 1
while starter <= rooms:
    print ("\nRoom", starter)
    area = int(input("\nWhat is the total square feet of TWO walls in the room?\n"
                     "These should be adjacent walls.\n"))
    roomArea.extend([area])
    doors = int(input("\nWhat is the total square feet of the doors in the room?\n"))
    doorsPerRoom.extend([doors])
    dTrim = int(input("\nWhat is the total square feet of the door trim in the room?\n"))
    doorTrim.extend([dTrim])
    windows = int(input("\nWhat is the total square feet of the windows in the room?\n"))
    windowsPerRoom.extend([windows])
    wTrim = int(input("\nWhat is the total square feet of the window trim in the room?\n"))
    windowTrim.extend([wTrim])
    starter = starter + 1
```

Final attempt at program
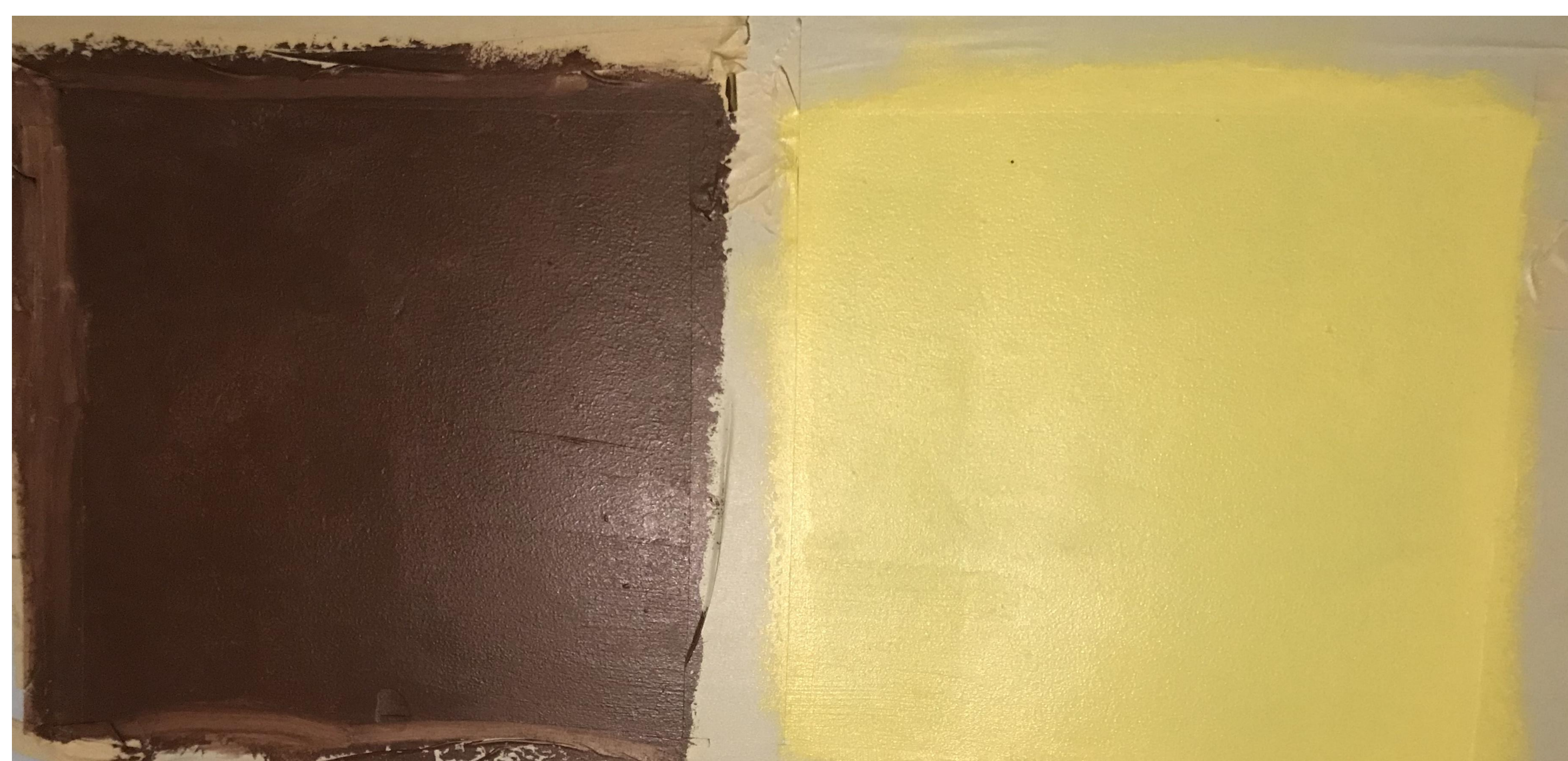
Different paints to gauge absorption rate