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Midterm Exam
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Problem 7

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Problem 7

20.0 points possible (graded)

Assume you are given two dictionaries `d1` and `d2`, each with integer keys and integer values. You are also given a function `f`, that takes in two integers, performs an unknown operation on them, and returns a value.

Write a function called `dict_interdiff` that takes in two dictionaries (`d1` and `d2`). The function will return a tuple of two dictionaries: a dictionary of the intersect of `d1` and `d2` and a dictionary of the difference of `d1` and `d2`, calculated as follows:

- **intersect:** The keys to the intersect dictionary are keys that are common in both `d1` and `d2`. To get the values of the intersect dictionary, look at the common keys in `d1` and `d2` and apply the function `f` to these keys' values -- the value of the common key in `d1` is the first parameter to the function and the value of the common key in `d2` is the second parameter to the function. Do not implement `f` inside your `dict_interdiff` code -- assume it is defined outside.

- **difference:** a key-value pair in the difference dictionary is (a) every key-value pair in `d1` whose key appears only in `d1` and not in `d2` and (b) every key-value pair in `d2` whose key appears only in `d2` and not in `d1`.

Here are two examples:

- If `f(a, b)` returns `a + b`
  `d1 = {1:30, 2:20, 3:30, 5:80}`
  `d2 = {1:40, 2:50, 3:60, 4:70, 6:90}`
  then `dict_interdiff(d1, d2)` returns
  `({1: 70, 2: 70, 3: 90}, {4: 70, 5: 80, 6: 90})`

- If `f(a, b)` returns `a > b`

  `d1 = {1:30, 2:20, 3:30}`

  `d2 = {1:40, 2:50, 3:60}`

  then `dict_interdiff(d1, d2)` returns

  `({1: False, 2: False, 3: False}, {})`

```
def dict_interdiff(d1, d2):
    '''

    d1, d2: dicts whose keys and values are integers
    Returns a tuple of dictionaries according to the
instructions above
    '''

    # Your code here
```

Paste your entire function, including the definition, in the box below. The function `f` will be automatically added to your code, do not paste it in the box. Do not leave any debugging print statements. **Note that we ask you to write a function only -- you cannot rely on any variables defined outside your function for your code to work correctly.**

```
1 # Paste your function here
```

Press ESC then TAB or click outside of the code editor to exit

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