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1  # CS241 Homework 12
2  # Written by Chad Macbeth
3
4  """
5  Purpose: This file is a starting point to help you practice using lambda functions.
6  """
7
8  import functools
9
10
11 def get_part1_list():
12     """
13     Filters a list to return even numbers greater than 33.
14     """
15     numbers = [x for x in range(100)]
16
17     # TODO: Write a line here that uses filter and a lambda function to filter
18     # the list so that it only contains even numbers greater than 33.
19     new_numbers = list(filter(lambda x : x % 2 == 0 and x > 33, numbers))
20
21
22     return new_numbers
23
24 def get_part2_list():
25     """
26     Maps a lambda function to a list to square each number and add one.
27     """
28     numbers = [x for x in range(100)]
29
30     # TODO: Write a line here than uses map and a lambda function to go through
31     # each number in the list, square it and then add one to the result
32     new_numbers = list(map(lambda x : x**2 + 1, numbers))
33
34
35     return new_numbers
36
37 def get_part3_list():
38     """
39     Reduces a list to its product
40     """
41     numbers = [x for x in range(1, 100)]
42
43     # TODO: Write a line here that uses reduce and a lambda function to
44     # multiply all the numbers in the list together and return the product
45     product = functools.reduce(lambda x, y : x * y, numbers, 1)
46
47     return product
48
49 def main():
50     """
51     This function calls the above functions and displays their result.
52     """
53     print(get_part1_list())
54     print(get_part2_list())
55     print(get_part3_list())
56
57
58 if __name__ == "__main__":
59     main()
60

```