CS 1520  
Recitation 11  
Date: 30th November, 2018

iceCreams = [  
 { flavor: 'pineapple', color: 'white', price: 1 },  
 { flavor: 'strawberry', color: 'red', price: 2 },  
 { flavor: 'watermelon', color: 'red', price: 3 },  
 { flavor: 'kiwi', color: 'green', price: 4 },  
 { flavor: 'mango', color: 'yellow', price: 5 },  
 { flavor: 'pear', color: 'green', price: 6 }  
];

1. Use the **filter** method to create a new array with only red colored ice cream. Remember, filter creates a new array

JS:

const favoriteFlavors = iceCreams  
 .filter(iceCream => iceCream.color === 'red');

Python:

favoriteFlavors = filter(lambda iceCream: iceCream[‘color’] == ‘red’, iceCreams)

1. Use **map** method to create a new array of strings, with all the flavors of ice cream.

JS:

const flavors = iceCreams.map(icecream => icecream.flavor)

Python:

Flavors = map(lambda icecream: icecream[‘flavor’], iceCreams)

1. Use **reduce** method to calculate the average price of the flavors.

JS:

const avg\_price = iceCreams.reduce((icecream, total) => icecream.price + total, 0) / iceCreams.length

Python:

avg\_price = reduce(lambda icecream, total: icecream[‘price’] + total, iceCreams) /

len(iceCreams)

1. Use **map** and r**educe** to calculate the increasing sums (prefix sums) of the flavor prices. That is, given the iceCreams, calculate and return the following list:

[1, 3, 6, 10, 15, 21]

You only need one line to do this!

JS:

const inc\_sum = iceCreams.map( (x, i, A) => A.slice(0, i+1).reduce((y, z)=>y.price+z, 0));

Python:

(Use **enumerate** function to get the indices)

map(lambda (i, icecream): reduce(lambda y, z: y[‘price’] + z, iceCreams[0:i+1]),  
 enumerate(iceCreams))