

calculateBrandAverage Function

<u>brandMap</u> <string, vector<float>>	<u>curBrand</u>	<u>curPrices</u>
<"ABC", {0.5}>	"ABC"	{0.5, 0.5, 0.5, 1.5, 1.5, 1.5}
<"ABC", {0.5, 0.5}>	"XYZ"	{1.0, 2.0, 3.0}
<"ABC", {0.5, 0.5, 0.5}>		
<"ABC", {0.5, 0.5, 0.5, 1.5}>		
<"ABC", {0.5, 0.5, 0.5, 1.5, 1.5}>	<u>brandSum</u>	<u>average</u>
<"XYZ", {1.0}>	6	1
<"XYZ", {1.0, 2.0}>	6	2
<"XYZ", {1.0, 2.0, 3.0}>		

Final Map

<"ABC", {0.5, 0.5, 0.5, 1.5, 1.5}>  
<"XYZ", {1.0, 2.0, 3.0}>

calculateCategoryAverage Function

<u>categoryMap &lt;string, vector&lt;float&gt;&gt;</u>	<u>curCategory</u>	<u>curPrices</u>
<"A", {0.5}>	"ABC"	{0.5, 0.5, 0.5, 1.5, 1.5, 1.5}
<"B", {0.5}>	"XYZ"	{1.0, 2.0, 3.0}
<"C", {0.5}>		
<"A", {0.5 1.5}>		
<"B", {0.5 1.5}>	<u>categorySum</u>	<u>average</u>
<"C", {0.5, 1.5}>	6	1
<"A", {0.5, 1.5, 1.0}>	6	2
<"A", {0.5, 1.5, 1.0, 2.0}>		
<"A", {0.5, 1.5, 1.0, 2.0, 3.0}>		

Final Map

<"A", {0.5, 1.5, 1.0, 2.0, 3.0}>  
<"B", {0.5 1.5}>  
<"C", {0.5, 1.5}>

### calculateSKU Function

yearMap<int, vector<int>>

<2000, {111}>

<2010, {112}>

<2020, {113}>

<2000, {111, 211}>

<2010, {113, 213}>

<2020, {113, 213, 321}>

<2020, {113, 213, 321}>

<2020, {113, 213, 321, 322}>

<2020, {113, 213, 321, 322, 323}>

### Final Map

<2000, {111, 211}>

<2010, {113, 213}>

<2020, {113, 213, 321, 322, 323}>

## Main Function & Final Output

### vSKU

{111}

{111, 112}

{111, 112, 113}

{111, 112, 113, 211}

{111, 112, 113, 211, 212}

{111, 112, 113, 211, 212, 213}

{111, 112, 113, 211, 212, 213, 321}

{111, 112, 113, 211, 212, 213, 322}

{111, 112, 113, 211, 212, 213, 322, 323}

### vBrand

{ABC}

{ABC, ABC}

{ABC, ABC, ABC}

{ABC, ABC, ABC, ABC}

{ABC, ABC, ABC, ABC, ABC}

{ABC, ABC, ABC, ABC, ABC, ABC}

{ABC, ABC, ABC, ABC, ABC, ABC, XYZ}

{ABC, ABC, ABC, ABC, ABC, ABC, XYZ, XYZ}

{ABC, ABC, ABC, ABC, ABC, ABC, XYZ, XYZ, XYZ}

### vCategory

{A}

{A, B}

{A, B, C}

{A, B, C, A}

{A, B, C, A, B}

{A, B, C, A, B, C}

{A, B, C, A, B, C, A}

{A, B, C, A, B, C, A, A}

{A, B, C, A, B, C, A, A, A}

#### vYear

{2000}

{2000, 2010}

{2000, 2010, 2020}

{2000, 2010, 2020, 2000}

{2000, 2010, 2020, 2000, 2010}

{2000, 2010, 2020, 2000, 2010, 2020}

{2000, 2010, 2020, 2000, 2010, 2020, 2020}

{2000, 2010, 2020, 2000, 2010, 2020, 2020, 2020}

{2000, 2010, 2020, 2000, 2010, 2020, 2020, 2020, 2020}

#### vPrice

{0.5}

{0.5, 0.5}

{0.5, 0.5, 0.5}

{0.5, 0.5, 0.5, 1.5}

{0.5, 0.5, 0.5, 1.5, 1.5}

{0.5, 0.5, 0.5, 1.5, 1.5, 1.5}

{0.5, 0.5, 0.5, 1.5, 1.5, 1.5, 1.0}

{0.5, 0.5, 0.5, 1.5, 1.5, 1.5, 1.0, 2.0}

{0.5, 0.5, 0.5, 1.5, 1.5, 1.5, 1.0, 2.0, 3.0}

## Final Output

SKU	Brand	Category	Year	Price
111	ABC	A	2020	0.5
112	ABC	B	2010	0.5
113	ABC	C	2020	0.5
211	ABC	A	2000	1.5
212	ABC	B	2010	1.5
213	ABC	C	2020	1.5
321	XYZ	A	2020	1
322	XYZ	A	2020	2
323	XYZ	A	2020	3

## Brand Average

ABC 1

XYZ 2

## Category Average

A 1.6

B 1

C 1

## Year SKU's

2000 111 211 (Count: 2)

2010 112 212 (Count: 2)

2020 113 213 321 322 323 (Count: 5)