

Problem X. Write the following code that accomplishes the task described. DO NOT hardcode for any specific input.

It's Halloween and you really want to go to Netherworld Haunted House! After securing a ticket for yourself and one other friend, you realize you are a popular person and need to choose between a group of your friends, who to give this ticket too. You want to choose a friend that is most easily frightened, so you compile information off various things each friend fears.

Each row describes a different friend, and each column represents what they are afraid of with values based on a 1-10 scale (1 as least afraid and 10 as most afraid). The headers of the cell array are the 1st row. Note that the columns are guaranteed to appear with the given names, but their order can be different than the example given.

Input Cell Array: `scared =`

'Names'	'Ghosts'	'Zombies'	'Monsters'	'MATLAB'
'Kantwon'	10	5	7	3
'Smith'	1	1	1	1
'Buzz'	7	9	9	9

Output Cell Array: `scared_friend =`

'Names'	'Ghosts'	'MATLAB'	'Crazy Scary'	'Total'
'Buzz'	7	9	18	34
'Kantwon'	10	3	12	25
'Smith'	1	1	2	4
'Total'	18	13	32	63

For each task below, you may use variables you define throughout all the questions.

```
function [scared_friend] = scaryHouse(scared)
```

1. Sort the given data alphabetically by the name of each friend. You are guaranteed that the first row and column will always contain the headers, thus DO NOT sort the first row.

2. Make a new column that has the header value called `'Crazy Scary'` by adding the data from the `'Zombies'` and `'Monsters'` columns together. Append this new column to the end of the cell array.

3. Delete the columns with the headers `'Zombies'` and `'Monsters'`.

4. Finally write an updated cell array with the totals of the rows and columns appended to the right and the bottom of the array respectively. Set this equal to the variable `scared_friend`. Remember your cell array has changed size!

```
% end of the function scaryHouse  
end
```

SOLUTION

Problem X. Write the following code that accomplishes the task described. DO NOT hardcode for any specific input.

It's Halloween and you really want to go to Netherworld Haunted House! After securing a ticket for yourself and one other friend, you realize you are a popular person and need to choose between a group of your friends, who to give this ticket too. You want to choose a friend that is most easily frightened, so you compile information off various things each friend fears.

Each row describes a different friend, and each column represents what they are afraid of with values based on a 1-10 scale (1 as least afraid and 10 as most afraid). The headers of the cell array are the 1st row. Note that the columns are guaranteed to appear with the given names, but their order can be different than the example given.

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For each task below, you may use variables you define throughout all the questions.

```
function [scared_friend] = scaryHouse(scared)
```

1. Sort the given data alphabetically by the name of each friend. You are guaranteed that the first row and column will always contain the headers, thus DO NOT sort the first row.

```
header = scared(1,:)
```

```
scared=scared(2:end,:)
```

```
mask = strcmp(header, 'Names')
```

```
names = scared(:,mask)
```

```
[~,ind] = sort (names)
scared = scared(ind,:)
```

2. Make a new column that has the header value called 'Crazy Scary' by adding the data from the 'Zombies' and 'Monsters' columns together. Append this new column to the end of the cell array.

```
maskZom = strcmp(header,'Zombies')
maskMon = strcmp(header,'Monsters')
combine = sum(cell2mat(scared(:,maskZom)),
cell2mat(scared(:,maskMon)))
header(end+1) = {'Crazy Scary'}
scared(:,end+1) = num2cell(combine)
```

Or

```
header = [header, {'Crazy Scary'}]
scared = [scared, num2cell(combine)]
```

3. Delete the columns with the headers 'Zombies' and 'Monsters'.

```
maskZom = strcmp(header,'Zombies')
maskMon = strcmp(header,'Monsters')
scared(:,maskZom) = []
scared(:,maskMon) = []
header(:,strcmp(header, 'Zombies')) = []
header(:,strcmp(header, 'Monsters')) = []
```

4. Finally write an updated cell array with the totals of the rows and columns appended to the right and the bottom of the array, respectively. Label these columns with 'Total' Set this equal to the variable `scared_friend`. Remember the only two columns with characters is 'Names' and the header! Remember your cell array has changed sizes!

```
maskNames = strcmp(header, 'Names')
header = [header, {'Total'}]
rowSum = scared(:,~maskNames)
rowSum = sum(cell2mat(rowSum),2)
scared = [scared, num2cell(rowSum)]
```

Commented [NA1]: I added this one to replace a different set of instructions but if it doesn't pair well with the problem feel free to leave it out

```
totSum = sum(rowSum)
colSum = scared(:,~maskNames)
colSum = sum(cell2mat(colSum))
colSum = [{ 'Total' },num2cell(colSum),totSum]
scared = [scared; colSum]
scared_friend = [header; scared]

% end of the function scaryHouse
end
```