

Computer Science 3
AA (25 points)

1. Using a prompt, ask the user for a number. If the user does not input a number, ask again until their input is numerical. Based on the number, generate a shape following the example below. If the input is odd, print a rectangle, otherwise, print a triangle. There should be a space between the numbers.

Sample user input: 5

Output on webpage:

Number inputted: 5

```
5 5 5 5 5
4 4 4 4 4
3 3 3 3 3
2 2 2 2 2
1 1 1 1 1
```

Sample user input: 8

Output on webpage:

Number inputted: 8

```
8 8 8 8 8 8 8
7 7 7 7 7 7 7
6 6 6 6 6 6
5 5 5 5 5
4 4 4 4
3 3 3
2 2
1
```

Hints:

- You can use a loop to repeatedly ask for user input until the input is numerical. There is a builtin function to determine whether user input is numerical or not.
- You will need nested loops for the printing of the rectangle.

Rubrics:

User input	4 pts Non-numerical user input is not accepted Input is asked again until numerical input is encountered	2 pts Any one of the criteria is not met	1 pt There is no attempt to check/validate user input	0 pt There is no attempt to get user input
Printing of rectangle	9 pts The correct numbers are printed per line The correct quantity of numbers are printed in each line, with spaces in between The correct number of lines are printed	6 pts Any one of the criteria is not met	4 pts Two criteria are not met	2 pt There is an attempt to print the rectangle but the output is wrong

2. Create a 7-person contacts list. Using a textbox and a button that says “Add”, allow the user to add names to the contacts list. Add another button that says “Remove”, which removes the last contact from the list. Your page should show the contacts list after every action. When the contacts list reaches 7 entries and the user adds another entry, the contact at the beginning (left) of the list should be removed, and the incoming entry added at the end still.

Sample:

Action: user adds “Karen”

Output:

karen

Action: user adds “Jessy”:

Output:

karen jessy

Action: user clicks “Remove”:

Output: *(the name at the end of the list should be removed)*

karen

Action: user adds a new name with 7 names already in the list

jessy jessa ryan alan gian arlyn johnel

Output: *(the name at the beginning of the list should be removed, and the new name added at the end)*

jessa ryan alan gian arlyn johnel loys

Hints:

- There is a builtin function for removing elements from the beginning of an array.

Rubrics:

Adding names	9 pts Elements can be added smoothly, no errors The contacts list maintains up to 7 names at a time	6 pts Any one of the criteria is not met	4 pt Two criteria are not met	2 pt There is an attempt to create and manage the array but the output is wrong
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	When the list has 7 names, incoming names are added at the end and the first element is removed			
Removing names	3 pts When the Remove button is clicked, the last name in the list is removed	1 pt The element is not removed (or not without error)		