

# Console menu exercise

## 1: ConsoleMenu class

### Private fields

- `string* optionsArray`
- `int optionsCount`

### Public methods

- Constructor / Destructor
  - `ConsoleMenu(string options[], int optionsCount)` : Setter constructor
  - `ConsoleMenu(ConsoleMenu& menu)` : Copy constructor (Bonus challenge)
  - `~ConsoleMenu()` : Destructor
    - If the `optionsArray` already points to a valid dynamically allocated array, then delete the entire array
- Getter methods
  - `int getOptionsCount()`
  - `string getOption(int index)`
    - Validate the index before accessing an array element and returning
- Setter method
  - `void setOptions(string options[], int optionsCount)`
    - If the `optionsArray` already points to a valid dynamically allocated array, then delete the entire array
    - Update the `optionsCount` field, using the corresponding parameter
    - Dynamically allocate a new array with the correct size, and store its address in the `optionsArray` pointer
    - For each element in the new array, copy over the corresponding element from the parameter array
- User interface methods
  - `void displayOptions()`
    - Display each menu option in the console  
(This method involves only console output, not console input)
  - `int displayAndGetSelection()`
    - Display each menu option in the console
    - Using console input, get the user's selected option  
(Use one of the functions from the input validation exercise)
    - Return the array index of this selected option