Tom Steinman
Assignment 1 - Array
6/16/23
Q1)
  1) Check if integer exists

```
Using data from : array.txt
Your array consists of [
    1     2     3     4     5     6     7     8     9    10
   11    12    13    14    15    16    17    18    19    20
   21    22    23    24    25    26    27    28    29    30
   31    32    33    34    35    36    37    38    39    40
   41    42    43    44    45    46    47    48    49    50
   51    52    53    54    55    56    57    58    59    60
   61    62    63    64    65    66    67    68    69    70
   71    72    73    74    75    76    77    78    79    80
   81    82    83    84    85    86    87    88    89    90
   91    92    93    94    95    96    97    98    99   100 ]

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
1

What number would you like to search for in the array?
5

The number 5 is at index 4

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
1

What number would you like to search for in the array?
-1

The number -1 is not in the array

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
```

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2) Modify value of an integer in an array by index

```
Choose a menu option:
1) Search if number exists and return the index
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3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
2

What index would you like to choose?
0

Please choose the new integer you would like to replace at index 0
0

Old value at index 0 : 1
Old value at index 0 : 0

Your array consists of [
    0    2    3    4    5    6    7    8    9   10
   11   12   13   14   15   16   17   18   19   20
   21   22   23   24   25   26   27   28   29   30
   31   32   33   34   35   36   37   38   39   40
   41   42   43   44   45   46   47   48   49   50
   51   52   53   54   55   56   57   58   59   60
   61   62   63   64   65   66   67   68   69   70
   71   72   73   74   75   76   77   78   79   80
   81   82   83   84   85   86   87   88   89   90
   91   92   93   94   95   96   97   98   99  100 ]

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
2

What index would you like to choose?
1

Please choose the new integer you would like to replace at index 1
-100

Old value at index 1 : 2
Old value at index 1 : -100

Your array consists of [
    0 -100    3    4    5    6    7    8    9   10
   11   12   13   14   15   16   17   18   19   20
   21   22   23   24   25   26   27   28   29   30
   31   32   33   34   35   36   37   38   39   40
   41   42   43   44   45   46   47   48   49   50
   51   52   53   54   55   56   57   58   59   60
   61   62   63   64   65   66   67   68   69   70
   71   72   73   74   75   76   77   78   79   80
   81   82   83   84   85   86   87   88   89   90
   91   92   93   94   95   96   97   98   99  100 ]
```

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3) Function that adds a new integer to the end of the array

```
Your array consists of [
   0  -100    3    4    5    6    7    8    9   10
  11    12   13   14   15   16   17   18   19   20
  21    22   23   24   25   26   27   28   29   30
  31    32   33   34   35   36   37   38   39   40
  41    42   43   44   45   46   47   48   49   50
  51    52   53   54   55   56   57   58   59   60
  61    62   63   64   65   66   67   68   69   70
  71    72   73   74   75   76   77   78   79   80
  81    82   83   84   85   86   87   88   89   90
  91    92   93   94   95   96   97   98   99  100 ]

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
3

Please choose the new integer you would like to add at the end of the array
101

Your array consists of [
   0  -100    3    4    5    6    7    8    9   10
  11    12   13   14   15   16   17   18   19   20
  21    22   23   24   25   26   27   28   29   30
  31    32   33   34   35   36   37   38   39   40
  41    42   43   44   45   46   47   48   49   50
  51    52   53   54   55   56   57   58   59   60
  61    62   63   64   65   66   67   68   69   70
  71    72   73   74   75   76   77   78   79   80
  81    82   83   84   85   86   87   88   89   90
  91    92   93   94   95   96   97   98   99  100
 101 ]

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
3

Please choose the new integer you would like to add at the end of the array
102

Your array consists of [
   0  -100    3    4    5    6    7    8    9   10
  11    12   13   14   15   16   17   18   19   20
  21    22   23   24   25   26   27   28   29   30
  31    32   33   34   35   36   37   38   39   40
  41    42   43   44   45   46   47   48   49   50
  51    52   53   54   55   56   57   58   59   60
  61    62   63   64   65   66   67   68   69   70
  71    72   73   74   75   76   77   78   79   80
  81    82   83   84   85   86   87   88   89   90
  91    92   93   94   95   96   97   98   99  100
 101   102 ]
```

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4) A function that takes an index of the array and removes the value

```
Your array consists of [
    0  -100     3     4     5     6     7     8     9    10
   11    12    13    14    15    16    17    18    19    20
   21    22    23    24    25    26    27    28    29    30
   31    32    33    34    35    36    37    38    39    40
   41    42    43    44    45    46    47    48    49    50
   51    52    53    54    55    56    57    58    59    60
   61    62    63    64    65    66    67    68    69    70
   71    72    73    74    75    76    77    78    79    80
   81    82    83    84    85    86    87    88    89    90
   91    92    93    94    95    96    97    98    99   100
  101   102 ]

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
4

Please choose the index you would like to remove from the array
101

Your array consists of [
    0  -100     3     4     5     6     7     8     9    10
   11    12    13    14    15    16    17    18    19    20
   21    22    23    24    25    26    27    28    29    30
   31    32    33    34    35    36    37    38    39    40
   41    42    43    44    45    46    47    48    49    50
   51    52    53    54    55    56    57    58    59    60
   61    62    63    64    65    66    67    68    69    70
   71    72    73    74    75    76    77    78    79    80
   81    82    83    84    85    86    87    88    89    90
   91    92    93    94    95    96    97    98    99   100
  101 ]

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
4

Please choose the index you would like to remove from the array
1

Your array consists of [
    0     3     4     5     6     7     8     9    10    11
   12    13    14    15    16    17    18    19    20    21
   22    23    24    25    26    27    28    29    30    31
   32    33    34    35    36    37    38    39    40    41
   42    43    44    45    46    47    48    49    50    51
   52    53    54    55    56    57    58    59    60    61
   62    63    64    65    66    67    68    69    70    71
   72    73    74    75    76    77    78    79    80    81
   82    83    84    85    86    87    88    89    90    91
   92    93    94    95    96    97    98    99   100   101 ]
```

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Q2)
1)

```
Using data from : array.txt
Your array consists of [
    1    2    3    4    5    6    7    8    9   10
   11   12   13   14   15   16   17   18   19   20
   21   22   23   24   25   26   27   28   29   30
   31   32   33   34   35   36   37   38   39   40
   41   42   43   44   45   46   47   48   49   50
   51   52   53   54   55   56   57   58   59   60
   61   62   63   64   65   66   67   68   69   70
   71   72   73   74   75   76   77   78   79   80
   81   82   83   84   85   86   87   88   89   90
   91   92   93   94   95   96   97   98   99  100 ]

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
2

What index would you like to choose?
c

Please use an integer from 0 to 99
What index would you like to choose?
-1
```

2)

```
Using data from : array.txt
Your array consists of [
    1     2     3     4     5     6     7     8     9    10
   11    12    13    14    15    16    17    18    19    20
   21    22    23    24    25    26    27    28    29    30
   31    32    33    34    35    36    37    38    39    40
   41    42    43    44    45    46    47    48    49    50
   51    52    53    54    55    56    57    58    59    60
   61    62    63    64    65    66    67    68    69    70
   71    72    73    74    75    76    77    78    79    80
   81    82    83    84    85    86    87    88    89    90
   91    92    93    94    95    96    97    98    99   100 ]

Choose a menu option:
1) Search if number exists and return the index
2) Modify an integer based on index chosen
3) Add new integer to the end of the array
4) Provide index to remove from array
0) Quit
3

Please choose the new integer you would like to add at the end of the array
one

Your input was not an integer, please try again.
Please choose the new integer you would like to add at the end of the array
g

Your input was not an integer, please try again.
Please choose the new integer you would like to add at the end of the array
101

Your array consists of [
    1     2     3     4     5     6     7     8     9    10
   11    12    13    14    15    16    17    18    19    20
   21    22    23    24    25    26    27    28    29    30
   31    32    33    34    35    36    37    38    39    40
   41    42    43    44    45    46    47    48    49    50
   51    52    53    54    55    56    57    58    59    60
   61    62    63    64    65    66    67    68    69    70
   71    72    73    74    75    76    77    78    79    80
   81    82    83    84    85    86    87    88    89    90
   91    92    93    94    95    96    97    98    99   100
  101 ]
```