

EXERCISE SOLUTIONS

1. Write a function `list_100()` that creates and returns a list of the values from 0 (inclusive) to 100 (exclusive).

```
def list_100():
    vals = []
    for i in range(100):
        vals.append(i)
    return vals
```

2. Write a function called `randnums()` that takes three parameters: `size`, `low`, and `high`. The function should fill a list with `size` random numbers in the range `low` (inclusive) to `high` (exclusive) and return that list.

```
def randnums(size, low, high):
    vals = []
    for i in range(size):
        vals.append(int(random.randrange(low, high)))
    return vals
```

3. Write a function called `find_index()` that takes two parameters: a list and a search term. The function should look through the list to find the search term, and return its index if it is in the list. If the item is not in the list, it should return a value of `-1`.

```
def find_index(a_list, search_term):
    for i in range(len(a_list)):
        if search_term == a_list[i]:
            return i
    return -1
```

4. Write a function called `is_in_list()` that takes two parameters: a list and a search term. The function should return `True` if the item is in the list. Otherwise, it should return `False`.

```
def is_in_list(a_list, search_term):
    for value in a_list:
        if value == search_term:
            return True
    return False
```

5. Write a function called `get_odds()` that takes a list of integers as a parameter. The function should go through the list, find all the odd integers, and return a list with just those values in it.

```
def get_odds(a_list):
    odd_values = []
    for i in range(len(a_list)):
        if a_list[i] % 2 == 1:
            odd_values.append(a_list[i])
    return odd_values
```

6. Write a function called `sum_values` that takes a list of numbers as a parameter and returns the sum of all the values in the list.

```
def sum_values(a_list):
    sum = 0
    for val in a_list:
        sum += val
    return sum
```

7. Write a function `censor()` that takes a `sentence` (as a string) and a `bad_words` list as parameters. The function should return the sentence with all of the bad words replaced by asterisks (*).

```
def censor(sentence, bad_words):
    i = 0
    while i < len(sentence):
        for word in bad_words:
            if sentence[i:i + len(word)] == word:
                sentence = sentence.replace(word, "*" * len(word))
        i += 1
    return sentence
```

8. Write a function `card_name()` that takes a card number from a deck of 52 playing cards (numbered 0 - 51), and returns a string indicating the name of the card. The cards have four suits—Hearts, Diamonds, Spades, and Clubs—and 13 values: Ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, King. So calling `card_name(0)` would return the string "Ace of Hearts," `card_name(1)` would return "2 of Hearts," `card_name(12)` would return "King of Hearts," `card_name(13)` would return "Ace of Diamonds," and `card_name(51)` would return "King of Clubs." [Hint: Use integer division to identify the card number with the names of the suits identified in a list. Use the mod function (%) to identify the value of the card.]

```
def card_name(n):
    suits = ["Hearts", "Diamonds", "Spades", "Clubs"]
    suit = suits[n // 13]
    value = (n % 13) + 1
    if value == 1:
        name = "Ace"
    elif value == 11:
        name = "Jack"
    elif value == 12:
        name = "Queen"
    elif value == 13:
        name = "King"
    else:
        name = str(value)
    return name + " of " + suit
```