Stack Diagram Practice  

1. Given the code below, draw the stack diagram as it would look right before line 5 is executed (so main is in the process of executing line 9 and swap has just finished swapping). Make sure to include all values on the heap and all functions (with the variables in their scope) on the stack.

```python
1 def swap(i, j, lst):
2     temp = lst[i]
3     lst[i] = lst[j]
4     lst[j] = temp
5     print("done swapping!")
6
7 def main():
8     ninjas = ["KT","RH","AY","MP"]
9     swap(2, 0, ninjas)
10    print(ninjas)
11
12 main()
```

2. After this program has finished, what is ninjas equal to?

Steps for drawing stack diagrams:

- draw empty stack/heap
- put first function called on stack (usually main)
  - set up any parameters for this stack frame (assign to values on the heap)
  - execute function, step by step, setting up any local variables as you go
  - send return value (if any) back to calling function
  - remove finished function from stack (erase or cross out)
- continue executing the function that is now on top of stack
- note: be able to include and increment line numbers associated with the functions on the stack