Design an interactive product management system using Python fuctions.

1) display system functions
function name: show_functions
Parameters:
    None
Return:
    The user choice
Description:
    This function prints out all possible functionalities of the system to let users choose. The output should look like the following:

```
**********************************************
* 1. Generate overall stats for all products (total #, avg #, min, and max)
* 2. Calculate the amount for a given product
* 3. Update the amount for a given product
**********************************************
```

2) Generate overall stats for all products
function name: gen_stats
Parameters:
    None
Return:
    None
Description:
    Generate all basic stats of all products, such as the total amount for all products, the average, the maximum and the minimum.

3) calculate the amount of a given product
function name: check_stock()
Parameters:
    Product name
Return:
    The number in stock for that product
Description
    Retrieve the corresponding number in stock for a given product. The given product is obtained from the user (raw_input).

4) update the amount for a give product
function name: update_stock()
Parameters:
    The stock dictionary, a given product, the number (positive means increase, negative means decrease)
Return:
    None
Description:
    Update the number in stock for a given product. The stock dictionary also needs to be updated.

Note: 1. the system is always running until the user stops it. (You can use infinite loop with break statement somewhere in the loop)

2. You can design a main function which will be the starting point when you execute the entire program. Please use the following codes. Main function is also a function like others.

```
def main():
        place your codes here

if __name__ == '__main__':
        main()
```