# Duplicate code

## Steps of refactoring

* I created a function called validate\_item(condition, item), which contains the codes that validate item and return true or false
* I modified a function called validate\_emp\_id(emp\_id), which was a static method. After modification, it defined the value of condition then called validate\_item(condition, item).
* I modified a function called validate\_sales(sales), which was a static method. I defined the value of condition then called validate\_item(condition, item).
* I modified a function called validate\_salary(salary), which was a static method. I defined the value of condition then called validate\_item(condition, item).
* I modified a function called validate\_age(age), which was a static method. I defined the value of condition then called validate\_item(condition, item).
* I created a function called validate\_data(value, item), which contains the codes that validate item and return true or false
* I modified a function called validate\_gender(gender), which was a static method. I defined the value of condition then called validate\_data(value, item).
* I created a function called validate\_data(value, item), which contains the codes that validate item and return true or false
* I modified a function called validate\_bmi(bmi), which was a static method. I defined the value of condition then called validate\_data(value, item).
* I created a function called validate\_sales\_salary(self, data) and remove validate\_salary(self, salary) and validate\_sales(self, sales) due to they have same validated condition
* I create a dictionary to store the validation condition and called the dictionary in the validate\_item function. Remove some of above functions.
* After each above steps, I tested the code and then commit the code

## Long method

* Create a method called check\_file\_name(file\_name), to check if there is special characters in the file name
* Replaced some code in function called save\_csv(self, file\_name, employee\_list) with check\_file\_name(file\_name)
* create function called check\_file\_exists
* replace some code in function called save\_csv(self, file\_name, employee\_list) with check\_file\_exists(file\_name)
* modify the code to ensure the code comply PEP 8
* After each above steps, I tested the code and then commit the code

## Switch statement

* Create a dictionary to store function
* Replace the if statement
* Add another key(/sb) and value into dictionary and remove the relative elif statement. Modify the previous change
* Add one more key(/sp) and value into dictionary and remove the relative elif statement
* Add one more key(/sl) and value into dictionary and remove the relative elif statement
* create print\_chart function, moving the if statement into this function and remove the relative function from do\_chart function
* After each above steps, I tested the code and then commit the code

## Long parameter list

* Create a dictionary
* Add emp\_id into the dictionary with default value “emp\_id”
* Remove and modify relative code in function called \_init\_
* Add age into the the dictionary with default value “age”
* Remove and modify relative code in function called \_init\_
* Repeat the above step to add sales, salary, bmi, gender, birthday into the dictionary
* Remove and modify relative code in function called \_init\_
* After each above steps, I tested the code and then commit the code