

Item
- AvailAmount:int
+ Item(): + ID : static int + name : string + Type : string + Price : double

Stock
+Stock(): +ItemsDetails[100] : static Item + loadstock(): void +savestock():void +counter: static int

Person
- Name : string - Address : string
+ setname(n : string , a : string) : void + getname():string + getAddress() : string

Admin
+ Admin(): + reportAvailItems() : void + AddNewItem():void + UpdateExistingItem():void + DisplayMaxReceipt():double + x : Stock + c_c : static int

Customer
- money_customer : double
+ Customer(): + get_ChkTime(:Time): string + buyitems():void + st:Stock + AD: Admin + Arr_time: Time + Sh_Du_time: Time + CHECKOUT: Time + exist: bool + ID: int + total_rev: static double + Max_Receipt: static double + itemsName[20]: string + itemsnumbers[20]: int

Time
+ Time(): + ArrivalTime() : void + gen_random_hours() : void + gen_random_minutes() : void + operator + (: Time) : Time + hours: int + minutes: int

Brief Notes

Class Admin

Variables:

- Stock x : *“ object from the stock class to use the functions and variables from stock class ”*.
- Static int C_C : *“ it display the current customer ”*.

Functions:

- reportAvailItems() : *“ function that display the available items from the stock ”*.
- AddNewItem() : *“function that permits the admin to add a new product to the stock in supermarket ”*.
- UpdateExistingItem() : *“ function that permits the admin to update Existing product in the stock ”*.
- DisplayMaxReceipt() : *“ fuction that display maximum receipt of all customers ”*.

Class Time

Variables:

- Int Hours : *“ object from the stock class to use the functions and variables from stock class ”*.
- Int minutes : *“ it display the current customer ”*.

Functions:

- Time(): *“ constructor that initialize hours and minutes to zero ”*
- ArrivalTime() : *“ function that generate the Arrival time for each customer from the system ”*
- gen_random_hours() : *“ generate random hours ”*
- gen_random_minutes() : *“ generate random minutes ”*
- operator + : *“ Added the shopping Time and Arrival time to get Checkout time for each customer ”*

Class Item

Variables :

- static int ID : "it is a static variable to detect the number of each item "
- string name : "the variable that holds the name of the item ".
- string Type : "it holds the type of the item whether it is meat , washing , drinking or take away".
- int AvailAmount : "it has the number available of each item ".
- double Price : "it has the price of each item".
- This class has a default constructor for initialization.

Class Stock

Variables:

- static Item ItemsDetails[100] : "Is is an array of item objects ".
- static int counter : " a static variable used to detect the number of lines to extract the info.from the file "groceryitems" ".

Functions :

- void loadstock : "this function loads the list of items from the file at the beginning of the program ".
- void savestock : "this function saves the updates done by the admin to the file".

Class Person

Variables :

- string Name : "it holds the name of the customer ".
- string Address : "it holds the address of the user ".

Functions :

- void setname(string n , string a) : " it sets the name and the address and assigns value to them ".
- string getname : " this function returns the name ".

- string getAddress : "this functions returns the address".

Class Customer

Variables:

- Double money_customer : it stores the cash for each customer.
- Stock ST : it is an object from class stock, we use it to buy items from the Array of my items which in class stock.
- Admin AD: it is an object from class admin we use it to print the list of items that I have (stock), with each customer when buying operation .
- Time Arr_time: it is an object from class time we use it to set the value for arrival time for each customer.
- Time Sh_Du_time: it is an object from class time we use it to set the value for Shopping Duration for each customer.
- Time CHECKOUT: it is an object from class time we use it to set the value for Checkout time for each customer.
- Bool exist: it Boolean variable we create it to handle the problem of knowing which element of the big array I made that It stores the number of customer in, true, means that the element is customer already exists and bought something, false, means that the element is not a real customer and the element have no data for a customer.
- Int ID: it stores the Id for each customer.
- Double total_rev: it stores the total revenue.
- Max_Receipt: it stores the Max receipt for a customer.
- String itemsName[20]: an array of strings which have the names of products bought for each customer.
- Int itemsnumber[20]: an array of integers which have the numbers of of each product bought for each customer.

Functions:

- Customer: a constructor sets money_cusomer and ID with 0 for any object of customer, and sets bool variable (exist) with false for any customer.
- String get_ChkTime(Time): a function that a time object as a parameter and returns a string of hours and minutes ("0:00").
- Void buyitems(): it is responsible for buying operation for each customer , taking the wanted product and collect the cash then present the list of products are bought.