



Lab 3 Assignments









we chose for you

Write a program that choose a random website name from list and open it in your browser:

Input

No Input

Hint: Use Standard Library Modules

Output

Website Visit on Web Browser





Story

"Samy is an Employee, He works in ITI and He has a car. He goes everyday except weekends to ITI Smart Village Office by his fiat 128 car"



Story Members







Samy

ITI

Fiat128

Employee

Office

Car

Person



Additional Info

- ITI is an Office that has many employees and Samy is one of them.
- Samy is an Employee and He has a fiat 128 Car.
- The distance from Samy Home to ITI Smart Village Office is 20 km.
- Samy should arrive to ITI at before 9:00 unless that he will be late.
- Velocity (v) = Distance(d) / time(t).
- FuelRate decrease by 10% every 10km distance.



LAB beginner







Setup All Classes

- 1- Create the following classes:
 - Person Class:
 - attributes (name, money, mood, healthRate).
 - methods (sleep, eat, buy).
 - Employee Class (is a Person):
 - attributes (id , car, email, salary, distanceToWork)
 - methods (work, drive, refuel, send_mail)
 - Office Class:
 - attributes (name, employees)
 - -methods (get_all_employees, get_employee, hire, fire, calculate_lateness, deduct, reward)
 - Car Class:
 - attributes (name, fuelRate, velocity)
 - -methods (run, stop)











Implement Employee Methods

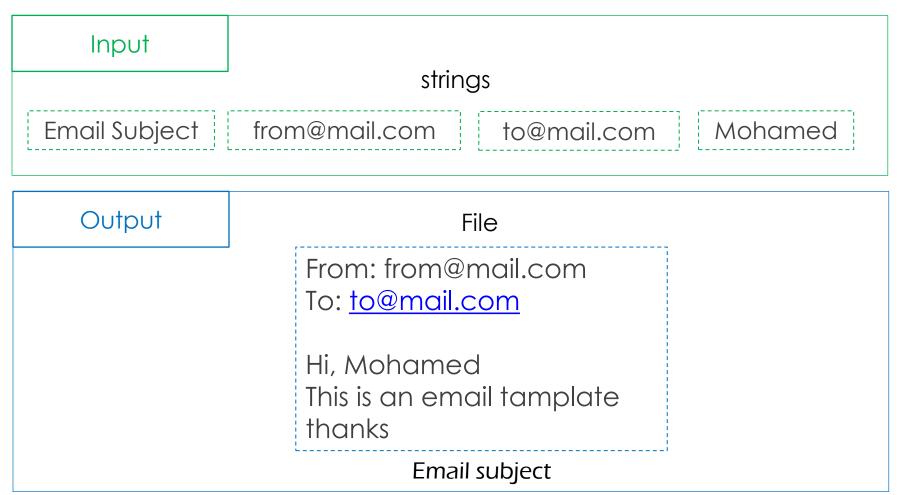
- 2- Implement the following methods:
- sleep (hours): Method in Person Class (7 hours \rightarrow happy, <7 hours \rightarrow tired, >7 hours \rightarrow Lazy)
- eat (meals): Method in Person Class (3 meals \rightarrow 100% hth , 2 meals \rightarrow 75% , 1 meal \rightarrow 50%)
- buy (items): Method in Person Class (1 item → decrease money 10 L.E)
- work (hours): Method in Employee Class (8 hours → happy, >8 hours → tired,<8 hours → Lazy)
- send_mail(to, subject, msq, receiver_name): /optional/
 - Create Email File like the next page specification (Email Composer)
- salary Property: must be 1000 or more.
- email Property: must be valid.
- healthRate Property: must be between 0 to 100.
- There is moods class variable which is tuple of happy, tired and lazy





Email Composer

Write a program that generate a file that contains a structured email message













Implement Car Methods

- 3 Implement the following methods:
- drive (distance):
 - Method in Employee Class (Give the order to run method and give it distance and velocity).
- refuel (gasAmount = 100):
 - Method in Employee Class (add gasAmount to fuelRate).
- run (velocity, distance):
- Method in Car Class (When invoked it decreases the **fuelRate** and change the velocity to the input parameter of velocity. And it invoke the stop method and give it the remain distance (It is possible to stop before arrive the destination because **fuelRate** become 0).
- stop ():
- Method in Car Class (Stop make the velocity changed to 0 and print notification with the remain distance or that you arrive the destintation)
- Velocity Property: must be between 0 to 200.
- Fuel Rate Property: must be between 0 to 100.





LAB +50 pts.

Implement Office Methods

- 3- Implement the following methods:
- get_all_employees (): Method in Office Class (Return a list of the current Employees)
- get_employee (empld): Method in Office Class (Return the Employees of given id)
- hire (Employee): Method in Office Class (Hire the given Employee)
- fire (empld): Method in Office Class (Fire Employee with the given id)
- deduct (empld, deduction): Method in Office Class (Deduce Money from salary from Employee)
- reward (empld, reward): Method in Office Class (add Money to salary from Employee)
- check_lateness (empld, moveHour): Method in Office Class (Check if employee is late or not and deduce if he is late -10 and reward if he is not late +10)
- calculate_lateness (targetHour, moveHour, distance, velocity): Static Method in Office Class (Calculate If employee is late or not)
- employeesNum class variable which declared the number of Employees in all offices.
- change_emps_num (num) class method which modify the number of Employees in all offices.





LAB +100 pts.

Save Office data as JSON

Save the previous data of the ITI office in a json file.





Thank You