

Coding Challenge Itemis AG

Introduction:

Here I solve three different types of problem in a combine way. As I am working in python very frequently, so I select this tech for solving this issue. Before I go into the depth of those problem, I make an overview on it. The first problem is sales taxes problem. The main goal is to find out the taxes for goods and total price. The second problem is conference track Management, which is to create a track of conference program. And the last one is merchant's guide to the galaxy. To create a list of metal and dirt according to their credit value. I create a main() function throw that all these three problem can be solve in one go.

Architecture:

I follow the diagram er presented here. It's an overview of how the function are connected with each other.

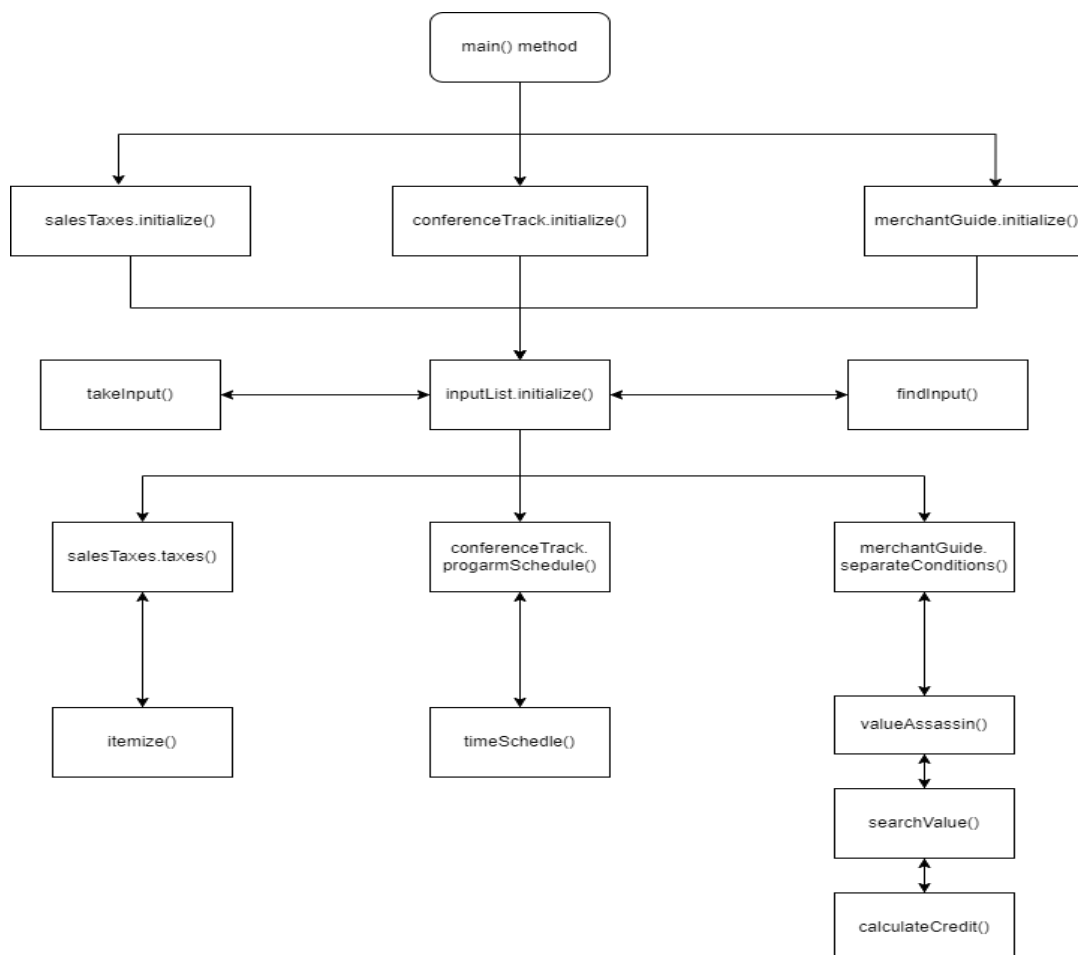
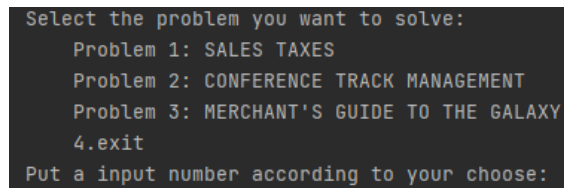


Figure 1: Flow diagram of Coding Challenge

User Manual:

It's an easy product of code to use. As it has no user interface so it can be complicated for some reason. Here I describe the way it can be used.

1. After running the main() method it will show 4 possible ways that a user can choose. The following snap represents the selection condition.



```
Select the problem you want to solve:
Problem 1: SALES TAXES
Problem 2: CONFERENCE TRACK MANAGEMENT
Problem 3: MERCHANT'S GUIDE TO THE GALAXY
4.exit
Put a input number according to your choose:
```

Figure 2: snap of section condition

2. Input: There are two ways to give the input for the problems.
 - a. One is manual input, through which the user can put input line by line and to finish with done.
 - b. The other way just simply gives the path of the file location.
3. Output: All the program and methods will apply on the input and return a printed result.

Idea of solutions:

- Main method():
 - Take an input according to action need.
 - Create some if else condition to separate the action are required.
 - Call the method to solve the specific problem.
- InputList():
 - Give an option to select the way user want to give input.
 - In manual input create a loop and it will break when it gets 'done' as input.
 - Take the file location, read the content, and separate them according to line break.
- salesTaxes():
 - split the input list into sub list where it found 'Input' word.
 - categories item in food, book, medicine, and others product section.
 - split every item and price then calculate the sales taxes and total price.
- ConferenceTrack():
 - Execute line by line and fixed the start time.
 - Split the duration of program and create a sum with the start time to find the start time for next program.
 - If the program comes near the 12 PM then it's postponed for 1 hour for lunch break.
 - If the program comes to 5PM then its start, then fixed network program.
 - The track will continue until every program has fixed time.
- merchantGuide():
 - Separate condition according to their structure. Like question, input value and invalid.
 - Assign credit to the metal according to Roman Letter .
 - Create a dictionary metal with credits.
 - Search credit for non-assign metal.
 - calculate the credits for the questions in the input list.