SIMPLE TRAIN BOOKING SYSTEM

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Problem statement

Goal

Calculate cost of train ticket given the quantity and destination

Input

Destination as str, number of tickets as int

Output

Total cost as str

Process

After prompting user for the inputs above, the no, of ticket will be passed through a validator to ensure there is enough ticket available.

If yes, then no. of ticket will be multiplied by the fare, then displayed.

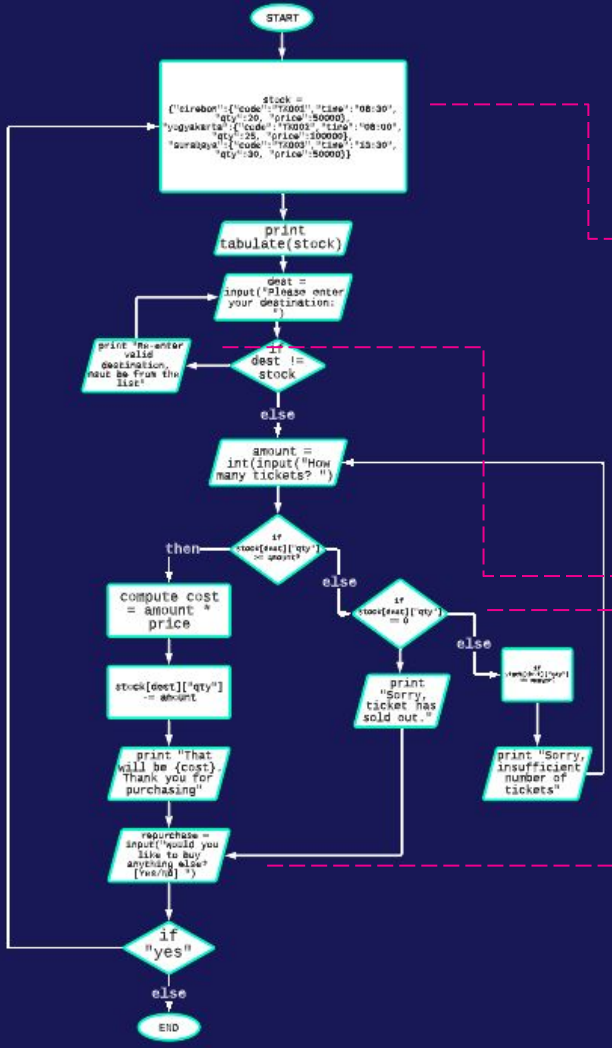
Error handling

Input validation

Flowchart

Main processes:

- Input dest
- Input no. of ticket
- Compute cost
- Output

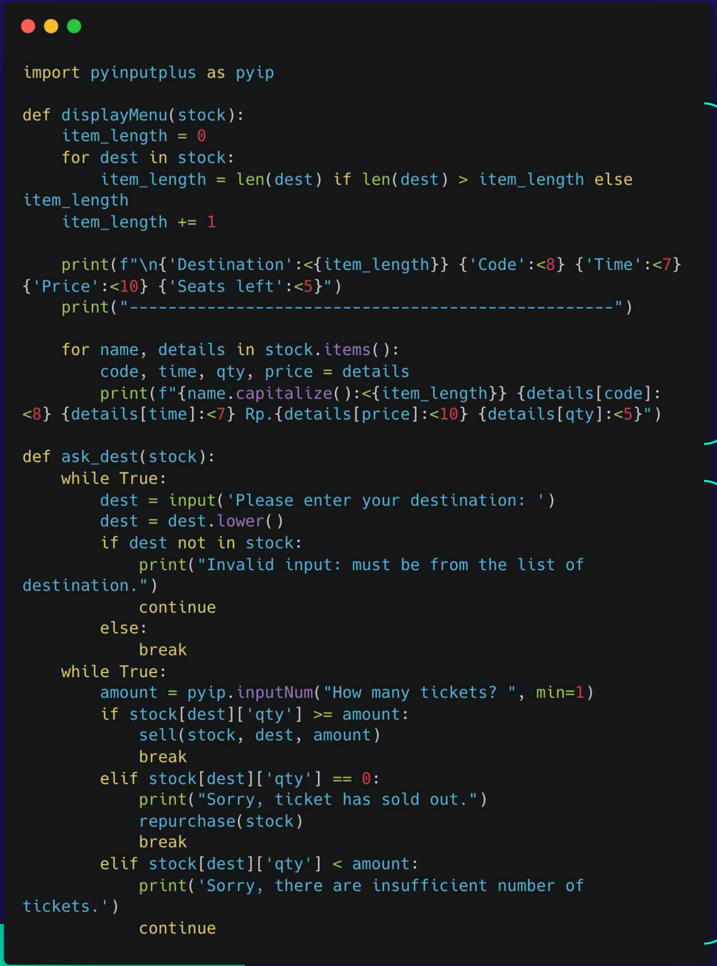

START
stock = {"cirebon":{"code":"TX001","time":"08:30", "qty":20, "price":50000}, "yogyakarta":{"code":"TX002","time":"08:00", "qty":25, "price":100000}, "surabaya":{"code":"TX003","time":"13:30", "qty":30, "price":50000}}
print tabulate(stock)
dest = input("Please enter your destination: ")
if dest != stock
print "Re-enter valid destination, must be from the list"
else
amount = int(input("How many tickets? "))
if stock[dest]["qty"] >= amount?
then
compute cost = amount * price
stock[dest]["qty"] -= amount
print "That will be {cost}. Thank you for purchasing"
else
if stock[dest]["qty"] == 0
print "Sorry, ticket has sold out."
else
if stock[dest]["qty"] < amount?
print "Sorry, insufficient number of tickets"
repurchase = input("Would you like to buy anything else? [Yes/No] ")
if "yes"
else
END

Declares nested dictionary, where the main keys are the destinations, and its values are dict of details

Input validation

Allows user to repurchase tickets (with updated stock)

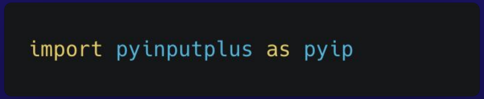
The Code: part 1



```
import pyinputplus as pyip

def displayMenu(stock):
    item_length = 0
    for dest in stock:
        item_length = len(dest) if len(dest) > item_length else
item_length
    item_length += 1

    print(f"\n{'Destination':<{item_length}} {'Code':<8} {'Time':<7}
{'Price':<10} {'Seats left':<5}")
    print("---------------------------------------------------")

    for name, details in stock.items():
        code, time, qty, price = details
        print(f"{name.capitalize():<{item_length}} {details[code]:
<8} {details[time]:<7} Rp.{details[price]:<10} {details[qty]:<5}")

def ask_dest(stock):
    while True:
        dest = input('Please enter your destination: ')
        dest = dest.lower()
        if dest not in stock:
            print("Invalid input: must be from the list of
destination.")
            continue
        else:
            break
    while True:
        amount = pyip.inputNum("How many tickets? ", min=1)
        if stock[dest]['qty'] >= amount:
            sell(stock, dest, amount)
            break
        elif stock[dest]['qty'] == 0:
            print("Sorry, ticket has sold out.")
            repurchase(stock)
            break
        elif stock[dest]['qty'] < amount:
            print('Sorry, there are insufficient number of
tickets.')
            continue
```

- **displayMenu** function is used to display the information of available destinations.
- Uses for loop to print all available options.

- **ask_dest** function is used to prompt the user to input desired destination and amount of tickets.
- Additionally, it comes with input validation.

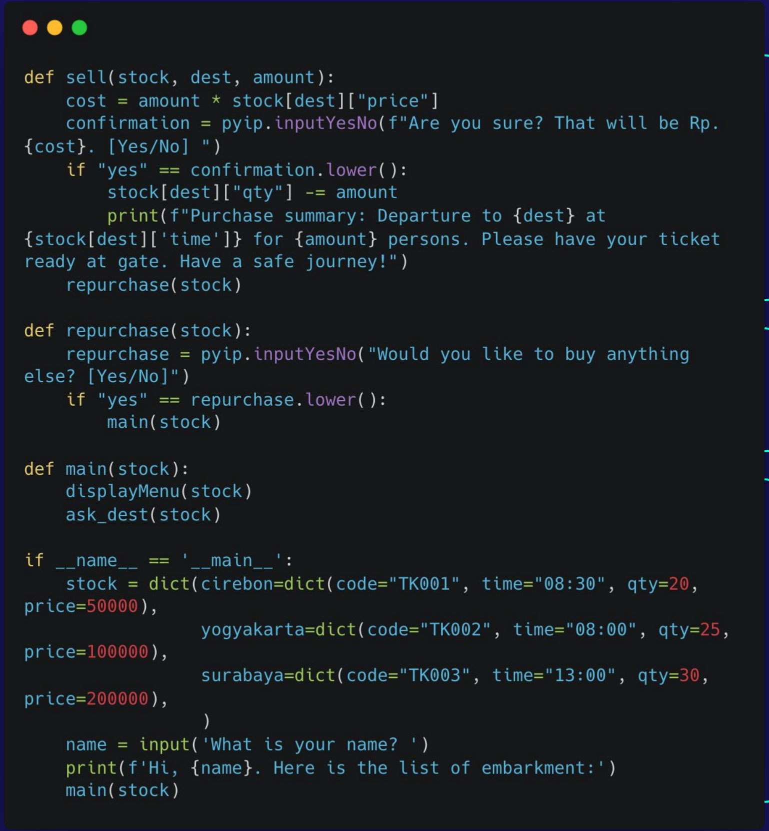


```
import pyinputplus as pyip
```

Module to shortcut input validation

https://github.com/alyshapm/TicketBooking_Group3_PDM

The Code: part 2



```
def sell(stock, dest, amount):
    cost = amount * stock[dest]["price"]
    confirmation = pyip.inputYesNo(f"Are you sure? That will be Rp.
{cost}. [Yes/No] ")
    if "yes" == confirmation.lower():
        stock[dest]["qty"] -= amount
        print(f"Purchase summary: Departure to {dest} at
{stock[dest]['time']} for {amount} persons. Please have your ticket
ready at gate. Have a safe journey!")
    repurchase(stock)

def repurchase(stock):
    repurchase = pyip.inputYesNo("Would you like to buy anything
else? [Yes/No]")
    if "yes" == repurchase.lower():
        main(stock)

def main(stock):
    displayMenu(stock)
    ask_dest(stock)

if __name__ == '__main__':
    stock = dict(cirebon=dict(code="TK001", time="08:30", qty=20,
price=50000),
                 yogyakarta=dict(code="TK002", time="08:00", qty=25,
price=100000),
                 surabaya=dict(code="TK003", time="13:00", qty=30,
price=200000),
                 )
    name = input('What is your name? ')
    print(f'Hi, {name}. Here is the list of embarkment:')
    main(stock)
```

def sell is a function that does 3 things:

- It calculates the cost of the purchase
- prompts the user to confirm there order
- prints the purchase info.

Def repurchase prompts the user to input whether they wish to buy other tickets

Def main calls the display menu and ask_dest functions

- The last parts(outside the functions) stores destination info
- Asks for user name and then calls main

https://github.com/alyshapm/TicketBooking_Group3_PDM

Testing plan

Input destination	Re-input destination	Input amount	Re-input amount	Output cost	Amount left
"cirebon"		3		Rp. 150.000	17
"jakarta"	"Surabaya"	31	4	Rp. 800.000	26
"YOGYAKARTA"		2		Rp. 200.000	23
"surabayaa"	“Surabaya”	-1	10	Rp. 2.000.000	20
"CiReBoN"		five	5	Rp. 250.000	15