

## BIKE RENTAL

### Code:

#### *Back End Library Of Bike Rental*

```
import datetime
class BikeRental:
    def __init__(self,stock=0):
        """
        Our constructor class that instantiates bike rental shop.
        """
        self.stock = stock
    def displaystock(self):
        """
        Displays the bikes currently available for rent in the shop.
        """
        print("We have currently {} bikes available to rent.".format(self.stock))
        return self.stock
    def rentBikeOnHourlyBasis(self, n):
        """
        Rents a bike on hourly basis to a customer.
        """
        if n <= 0:
            print("Number of bikes should be positive!")
            return None
        elif n > self.stock:
            print("Sorry! We have currently {} bikes available to rent.".format(self.stock))
            return None
        else:
            now = datetime.datetime.now()
            print("You have rented a {} bike(s) on hourly basis today at {} hours.".format(n,now.hour))
            print("You will be charged $5 for each hour per bike.")
            print("We hope that you enjoy our service.")
            self.stock -= n
            return now
    def rentBikeOnDailyBasis(self, n):
        """
        Rents a bike on daily basis to a customer.
        """
        if n <= 0:
            print("Number of bikes should be positive!")
            return None
        elif n > self.stock:
            print("Sorry! We have currently {} bikes available to rent.".format(self.stock))
            return None
        else:
            now = datetime.datetime.now()
```

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```
print("You have rented {} bike(s) on daily basis today at {} hours.".format(n, now.hour))
print("You will be charged $20 for each day per bike.")
print("We hope that you enjoy our service.")
self.stock -= n
return now

def rentBikeOnWeeklyBasis(self, n):
    """
    Rents a bike on weekly basis to a customer.
    """
    if n <= 0:
        print("Number of bikes should be positive!")
        return None
    elif n > self.stock:
        print("Sorry! We have currently {} bikes available to rent.".format(self.stock))
        return None
    else:
        now = datetime.datetime.now()
        print("You have rented {} bike(s) on weekly basis today at {} hours.".format(n, now.hour))
        print("You will be charged $60 for each week per bike.")
        print("We hope that you enjoy our service.")
        self.stock -= n
        return now

def returnBike(self, request):
    """
    1. Accept a rented bike from a customer
    2. Replenishes the inventory
    3. Return a bill
    """
    rentalTime, rentalBasis, numOfBikes = request
    bill = 0
    if rentalTime and rentalBasis and numOfBikes:
        self.stock += numOfBikes
        now = datetime.datetime.now()
        rentalPeriod = now - rentalTime
        print(rentalPeriod)
        # hourly bill calculation
        if rentalBasis == 1:
            bill = round(rentalPeriod.seconds / 3600) * 5 * numOfBikes
        # daily bill calculation
        elif rentalBasis == 2:
            bill = round(rentalPeriod.days) * 20 * numOfBikes
        # weekly bill calculation
        elif rentalBasis == 3:
            bill = round(rentalPeriod.days / 7) * 60 * numOfBikes
        if (3 <= numOfBikes <= 5):
            print("You are eligible for Family rental promotion of 30% discount")
            bill = bill * 0.7
```

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```
        print("Thanks for returning your bike. Hope you enjoyed our service!")
        print("That would be ${}".format(bill))
        return bill
    else:
        print("Are you sure you rented a bike with us?")
        return None
class Customer:
    def __init__(self):
        """
        Our constructor method which instantiates various customer objects.
        """

        self.bikes = 0
        self.rentalBasis = 0
        self.rentalTime = 0
        self.bill = 0
    def requestBike(self):
        """
        Takes a request from the customer for the number of bikes.
        """

        bikes = input("How many bikes would you like to rent?")
        try:
            bikes = int(bikes)
        except ValueError:
            print("That's not a positive integer!")
            return -1
        if bikes < 1:
            print("Invalid input. Number of bikes should be greater than zero!")
            return -1
        else:
            self.bikes = bikes
            return self.bikes

    def returnBike(self):
        """
        Allows customers to return their bikes to the rental shop.
        """

        if self.rentalBasis and self.rentalTime and self.bikes:
            return self.rentalTime, self.rentalBasis, self.bikes
        else:
            return 0,0,0
```

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#### *Main.py Frontend For The User*

```
from bikerental import BikeRental, Customer
def main():
    shop = BikeRental(100)
    customer = Customer()
    while True:
        print("""
        ===== Bike Rental Shop =====
        1. Display available bikes
        2. Request a bike on hourly basis $5
        3. Request a bike on daily basis $20
        4. Request a bike on weekly basis $60
        5. Return a bike
        6. Exit
        """)
        choice = input("Enter choice: ")
        try:
            choice = int(choice)
        except ValueError:
            print("That's not an int!")
            continue
        if choice == 1:
            shop.displaystock()

        elif choice == 2:
            customer.rentalTime = shop.rentBikeOnHourlyBasis(customer.requestBike())
            customer.rentalBasis = 1
        elif choice == 3:
            customer.rentalTime = shop.rentBikeOnDailyBasis(customer.requestBike())
            customer.rentalBasis = 2
        elif choice == 4:
            customer.rentalTime = shop.rentBikeOnWeeklyBasis(customer.requestBike())
            customer.rentalBasis = 3
        elif choice == 5:
            customer.bill = shop.returnBike(customer.returnBike())
            customer.rentalBasis, customer.rentalTime, customer.bikes = 0,0,0
        elif choice == 6:
            break
    else:
```

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```
print("Invalid input. Please enter number between 1-6 ")

print("Thank you for using the bike rental system.")

if __name__=="__main__":

    main()
```

### Output:

```
===== Bike Rental Shop =====
1. Display available bikes
2. Request a bike on hourly basis $5
3. Request a bike on daily basis $20
4. Request a bike on weekly basis $60
5. Return a bike
6. Exit

Enter choice: 1
We have currently 100 bikes available to rent.

===== Bike Rental Shop =====
1. Display available bikes
2. Request a bike on hourly basis $5
3. Request a bike on daily basis $20
4. Request a bike on weekly basis $60
5. Return a bike
6. Exit

Enter choice: 4
How many bikes would you like to rent? 5
You have rented 5 bike(s) on weekly basis today at 17 hours.
You will be charged $60 for each week per bike.
We hope that you enjoy our service.

===== Bike Rental Shop =====
1. Display available bikes
2. Request a bike on hourly basis $5
3. Request a bike on daily basis $20
4. Request a bike on weekly basis $60
5. Return a bike
6. Exit
```

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Enter choice: 5

0:00:29.691329

You are eligible for Family rental promotion of 30% discount

Thanks for returning your bike. Hope you enjoyed our service!

That would be \$0.0

===== Bike Rental Shop =====

1. Display available bikes
2. Request a bike on hourly basis \$5
3. Request a bike on daily basis \$20
4. Request a bike on weekly basis \$60
5. Return a bike
6. Exit

Enter choice: 6

Thank you for using the bike rental system.

>>>

>>>