Open Lab Project Report

Name: Book Corner

Description: Online bookstore where you can browse books of various genres and place orders.

Done by:

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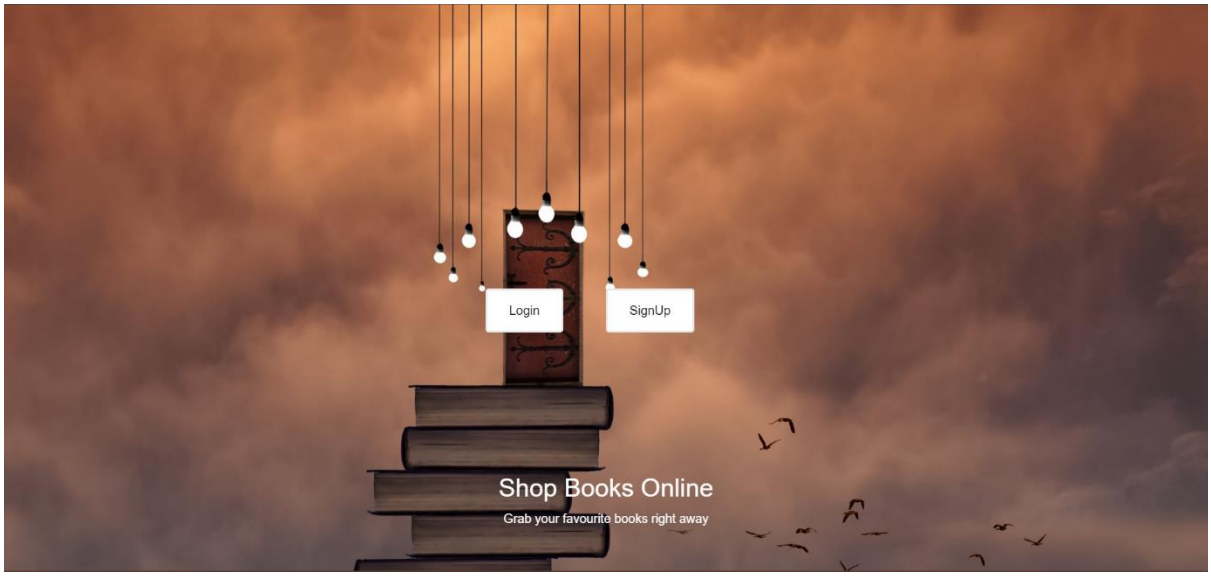
Website: https://tinyurl.com/BookCornerNive

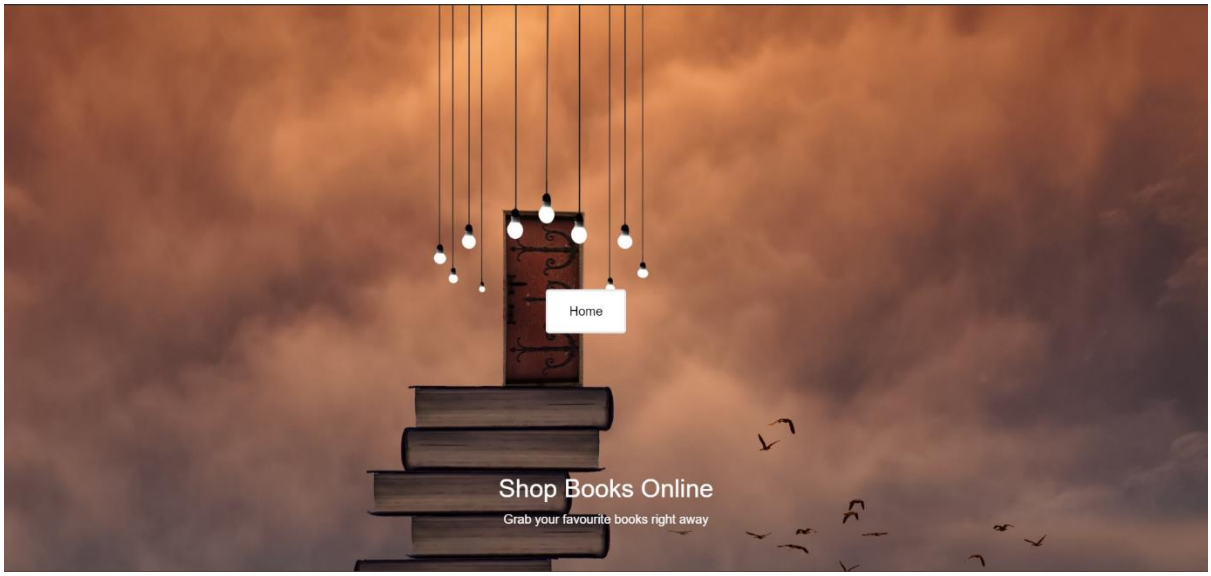
Codebase: https://tinyurl.com/BookCornerCodeBase

Screenshots:

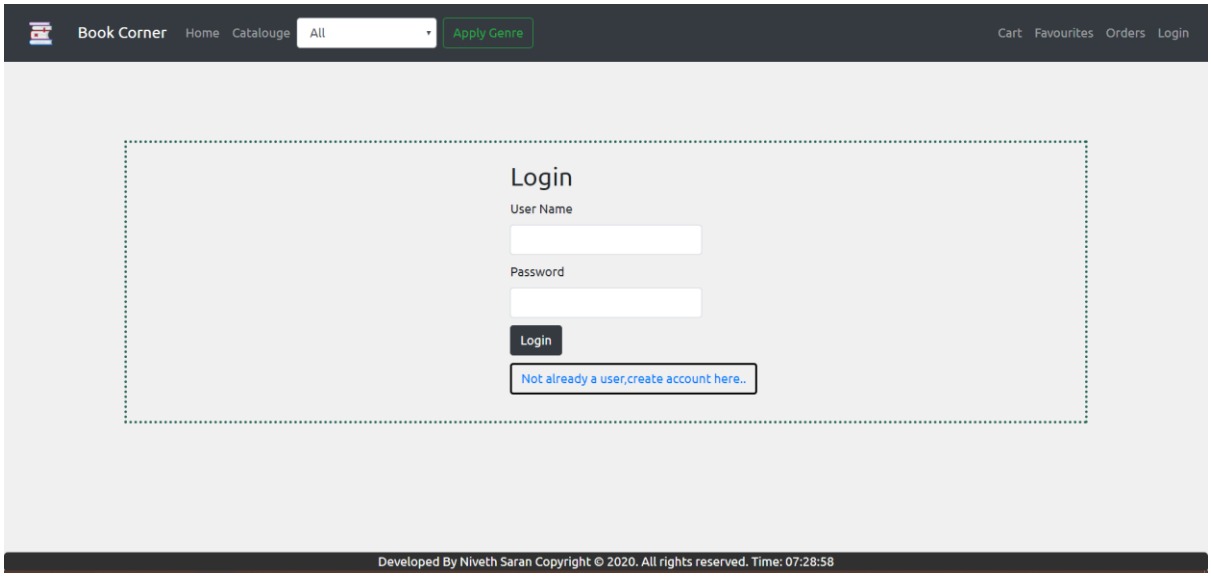
Start-up page when logged out:



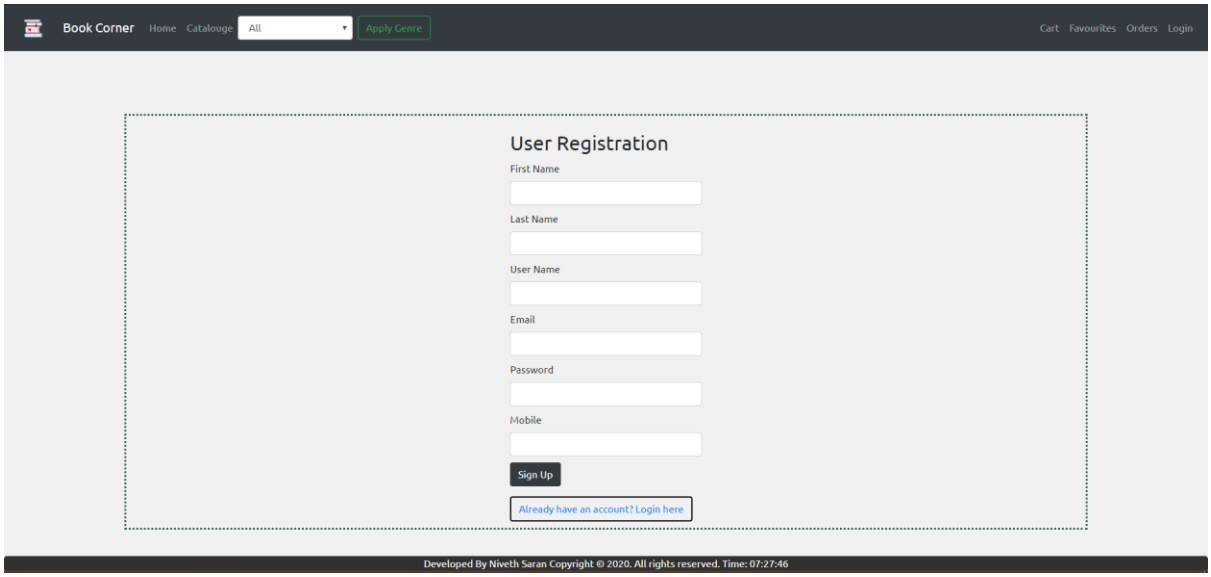
Start-up page when logged in:



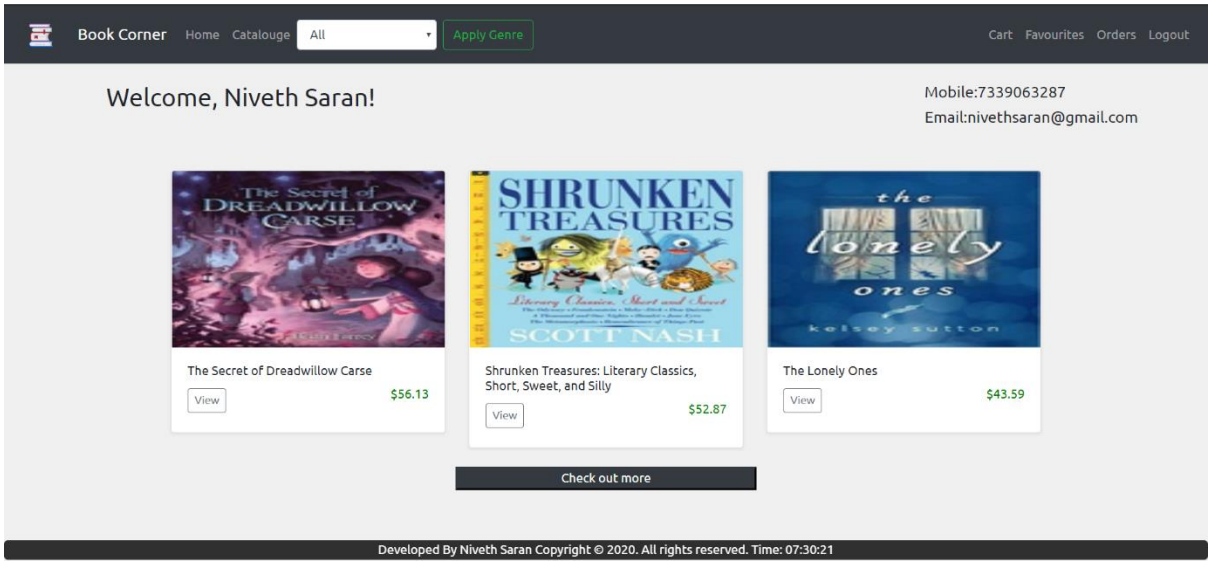
Sign-In Page:



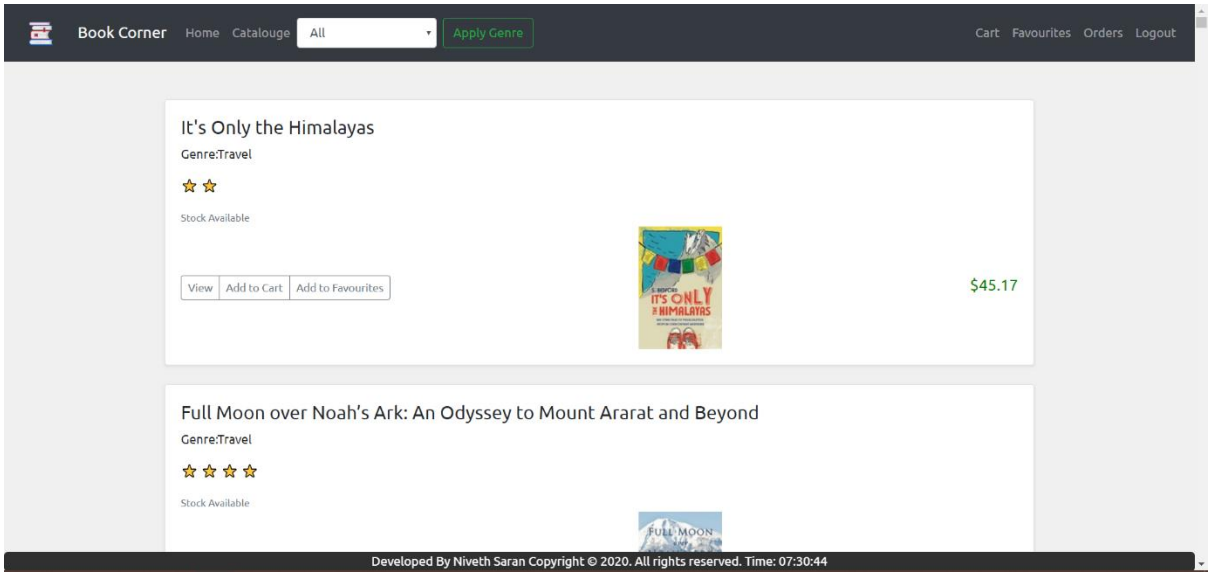
Sign-Up Page:



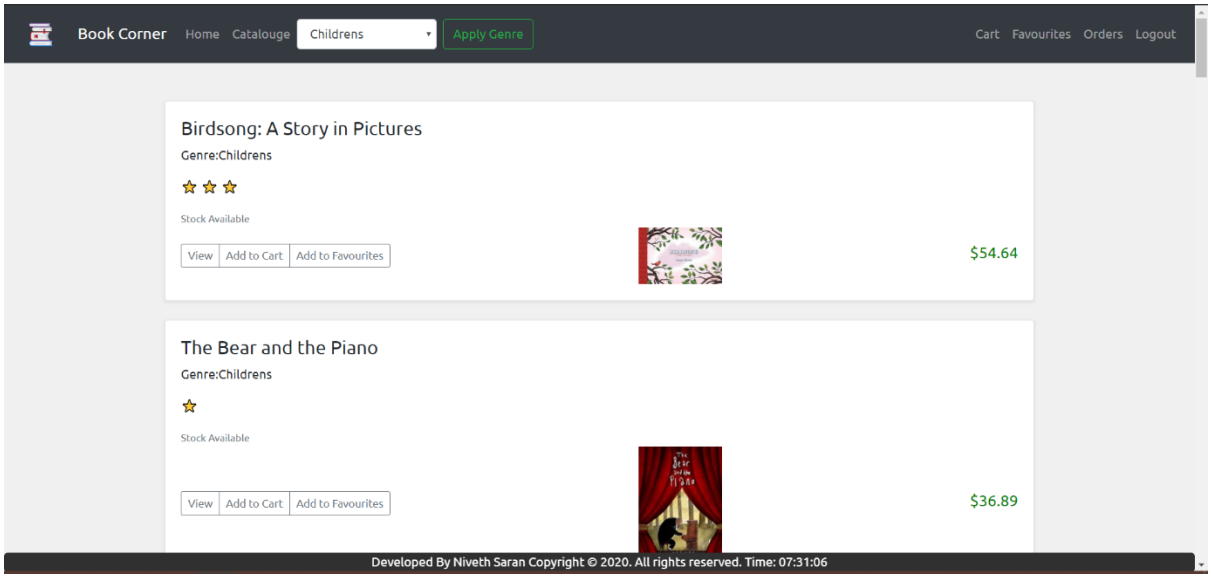
Home Page:



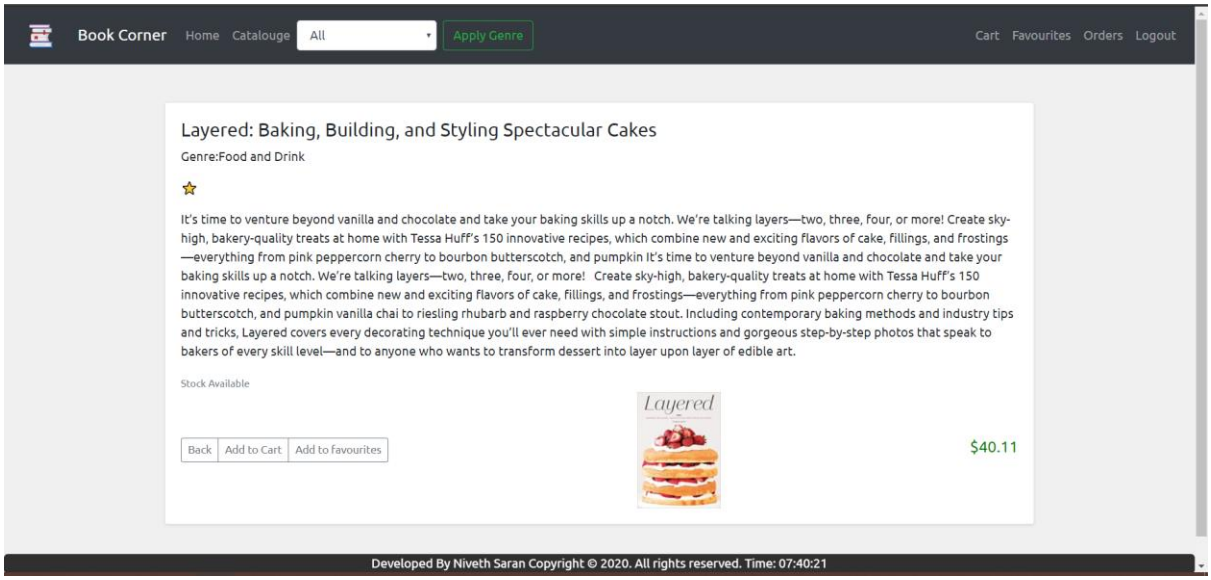
Catalogue Page:



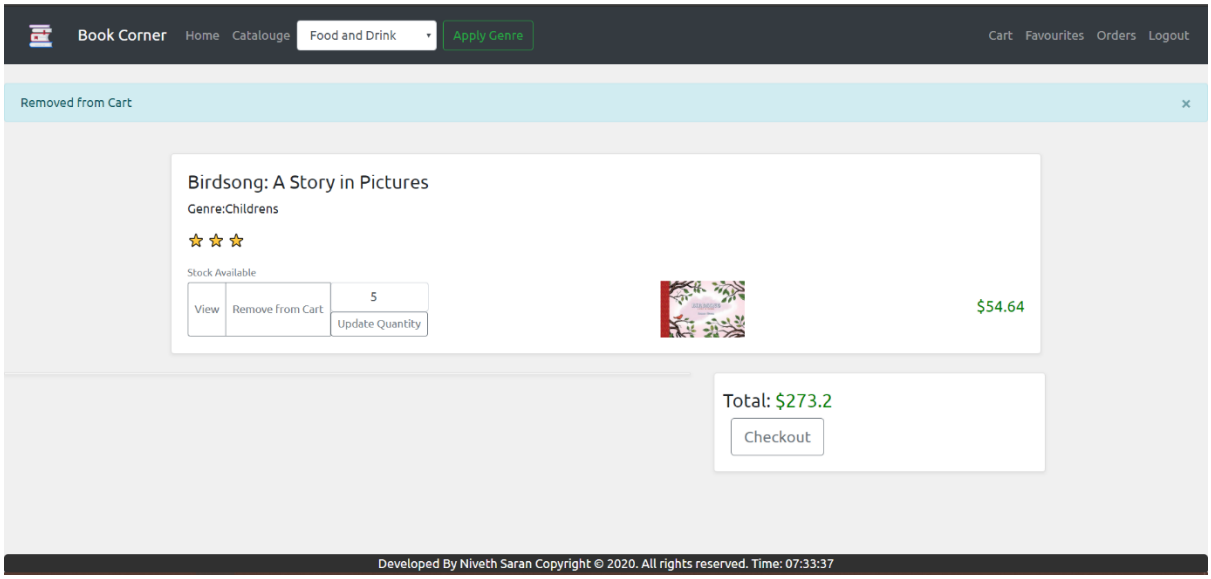
Catalogue with Genre applied:



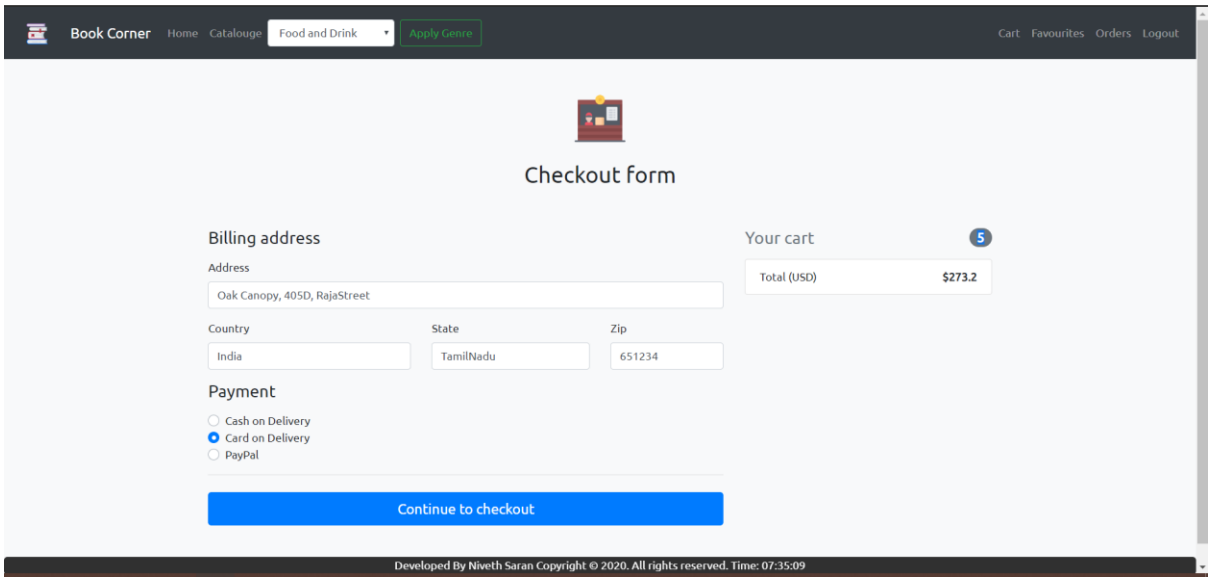
View Book or Books Details Page:



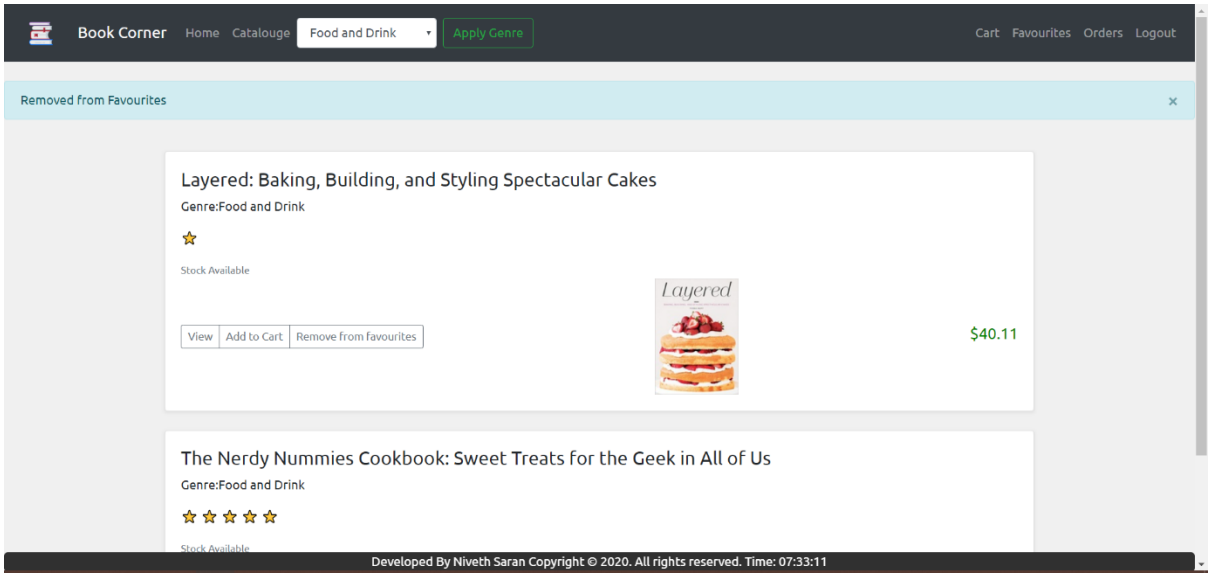
Cart:



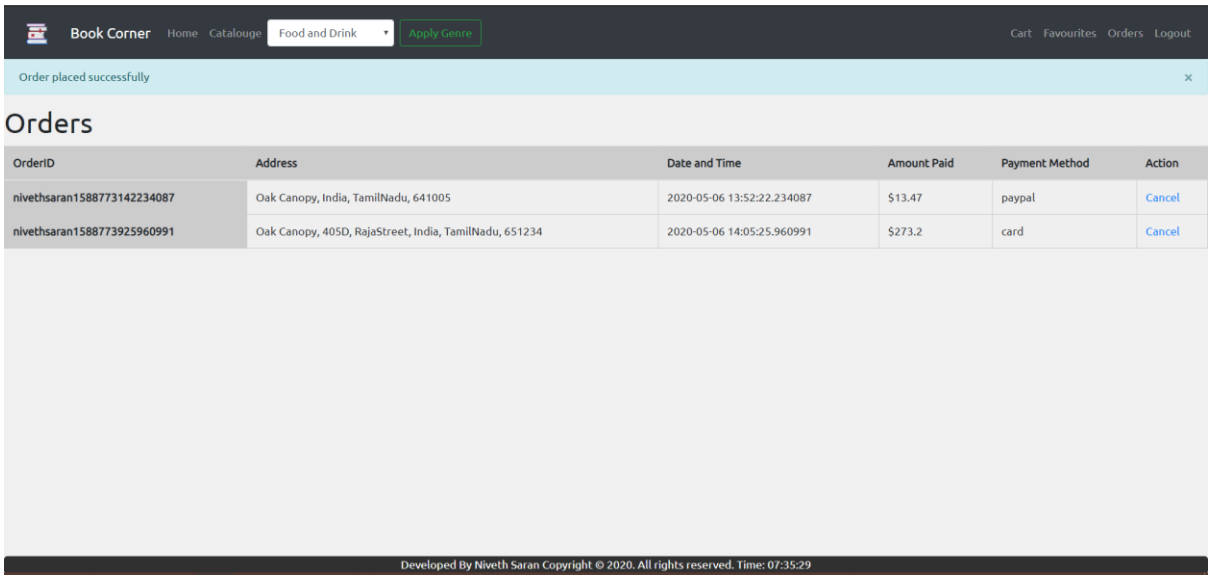
Checkout Page:



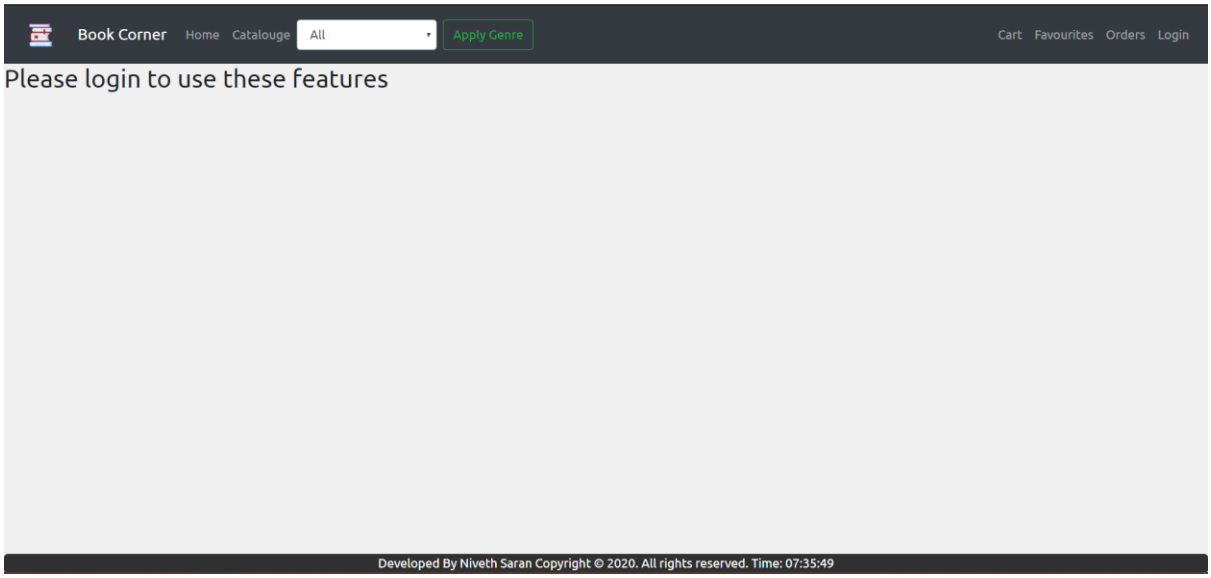
Favourites:



Orders Page:



Logged Out Message:



Code: (Available at https://github.com/nivethsaran/BookStore)

~The above GitHub repo is private~

Codebase (Zip): https://tinyurl.com/BookCornerCodeBase

app.py

```
import re
from urllib3.exceptions import InsecureRequestWarning
import warnings
from datetime import datetime, timedelta, timezone, date
import datetime
import time
import urllib3
import requests
from bs4 import BeautifulSoup
import random
import os
from datautil import *
from flask import *
app = Flask(__name__)
import sqlite3,json
warnings.simplefilter('ignore', InsecureRequestWarning)
ROOT_FOLDER= os.path.dirname(os.path.abspath(__file__))
today = date.today()
app.config['SECRET_KEY'] = 'BookBasket'

@app.route('/')
def startup():
   message=''
   session['genre'] = 'All'
   if 'username' in session:
      message='Working'
   return render_template('startup.html',message=message)

#Login Route
@app.route('/login', methods=('GET', 'POST'))
def login():
      error=''
      if request.method == 'POST':
         try:
            username = request.form['username']
            password = request.form['password']
            if len(username) == 0 or len(password) == 0:
               flash('Please fill both fields to login')
            else:
               conn = None
               try:
                  bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
                  conn = sqlite3.connect(bookstore)
```

```
                    dbURL = "SELECT username,password,fname,lname,email,mobi
le FROM user where username=?"
                    cursor = conn.cursor()
                    cursor.execute(dbURL,(username,))
                    rows=cursor.fetchall()
                    clen=int(len(rows))
                    if clen==0:
                       flash('Account does not exist')
                    else:
                       for row in rows:
                          if row[0]==username and row[1]==password:
                             fullname=row[2]+' '+row[3]
                             session['fullname']=fullname
                             session['username']=username
                             session['mobile']=row[5]
                             session['email']=row[4]
                             session['genre']='All'
                             return (redirect(url_for('home')))

                          else:
                             flash('Wrong passwords')

                except Exception as e:
                     print(e)
                     flash('Some unexpected error occured, so please try ag
ain')
                finally:
                    if conn:
                       conn.close()
            except Exception as e:
                print(e)
                flash('Some unexpected error occured, so please try again')
        return render_template('login.html',genrelist=genrelist)

#Function to check is mobile number is valid
def isValidNumber(number):
    Pattern = re.compile("(0/91)?[5-9][0-9]{9}")
    return Pattern.match(number)

def isValidZip(number):
    Pattern = re.compile("[0-9]{6}")
    return Pattern.match(number)

#Function to check if password is valid
def validPassword(password):
   flag = 0
   while True:
       if (len(password) < 8):
           flag = -1
           break
       elif not re.search("[a-z]", password):
           flag = -1
           break
       elif not re.search("[A-Z]", password):
           flag = -1
           break
```

```
        elif not re.search("[0-9]", password):
            flag = -1
            break
        elif not re.search("[_@$#]", password):
            flag = -1
            break
        elif re.search("\s", password):
            flag = -1
            break
        else:
            flag = 0
            return 'valid'

    if flag == -1:
        return 'invalid'




#Signup Route
@app.route('/signup',methods=['GET','POST'])
def signup():
    if request.method=='POST':
       fname=request.form['fname']
       lname=request.form['lname']
       username=request.form['username']
       password=request.form['password']
       email=request.form['email']
       mobile=request.form['mobile']
       regex = '^\w+([\.-]?\w+)*@\w+([\.-]?\w+)*(\.\w{2,3})+$'
       if fname == '' or lname == '' or username == '' or password == '' or
 email == '' or mobile == '':
          flash('All fields are mandatory')
       elif not re.search(regex,email):
             flash('Enter Valid email')
       elif validPassword(password)=='invalid':
          flash('Weak Password A strong paassword should contain min. 8 cha
racters, a special char, a digit, a uppercase and a lowercase letter')
       elif not isValidNumber(mobile):
          flash('Invalid Mobile Number')
       else:
          conn = None
          try:
             bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
             conn = sqlite3.connect(bookstore)
             dbURL = "INSERT INTO user values(?,?,?,?,?,?)"
             cursor = conn.cursor()
             cursor.execute(dbURL,(fname,lname,username,password,email,mobi
le))
             conn.commit()
             resp=make_response(redirect(url_for('login')))
             return resp
          except Exception as e:
             print(e)
             flash('Duplicate username')
          finally:
```

```
            if conn:
               conn.close()

   return render_template('signup.html',genrelist=genrelist)


#Home Route
@app.route('/home',methods=["GET","POST"])
def home():
   listbm = []
   recommendedGenre=request.cookies.get('genreCookie')
   if 'username' in session:
      conn = None
      try:
         bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
         conn = sqlite3.connect(bookstore)
         if(recommendedGenre is None):
            dbURL = "SELECT * FROM books where genre='Childrens' "
            cursor = conn.cursor()
            cursor.execute(dbURL)
         else:
            dbURL = "SELECT * FROM books where genre=?"
            cursor = conn.cursor()
            cursor.execute(dbURL,(recommendedGenre,))
         for row in cursor:
            listbm.append(row)
         if(len(listbm)<3):
            listbm.append(listbm[0])
            listbm.append(listbm[0])
         random.shuffle(listbm)

      except Exception as e:
         print(e)
         print('hello')
      return render_template('home.html', listbm=listbm, genrelist=genreli
st)
   else:
      return render_template('home.html', genrelist=genrelist)


@app.route('/cart', methods=["GET", "POST"])
def cart():
   cartlist = []
   price=0;
   bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
   conn = sqlite3.connect(bookstore)
   dbURL = "SELECT B.name,B.id,B.rating,B.price,B.image,B.details,B.genre,
C.quantity from books as B,cart as C where C.id in (Select id from cart wh
ere username=?) and B.id==C.id"
   cursor = conn.cursor()
   if 'username' in session:
      cursor.execute(dbURL, (session['username'],))
   for row in cursor:
      cartlist.append(row)
      price+=row[7]*row[3]
   price=round(price,2)
```

```
    return render_template('cart.html', cartlist=cartlist, genrelist=genrel
ist,price=price)

@app.route('/catalouge', methods=["GET", "POST"])
def catalouge():
    booklist = []
    data={'currently':None}
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    if request.method=="POST":
        genre=request.form['genre']
        session['genre']=genre
        if(genre=='All'):
            dbURL = "SELECT * from books"
            cursor = conn.cursor()
            cursor.execute(dbURL)
        else:
            dbURL = "SELECT * from books where genre=?"
            cursor = conn.cursor()
            cursor.execute(dbURL,(genre,))
        for row in cursor:
            booklist.append(row)
        resp = make_response(render_template('catalouge.html', booklist=book
list, genrelist=genrelist))
        resp.set_cookie('genreCookie',genre)
        return resp
    elif request.method=="GET":
        if('genre' in session):
            if(session['genre'] == 'All'):
                dbURL = "SELECT * from books"
                cursor = conn.cursor()
                cursor.execute(dbURL)
            else:
                dbURL = "SELECT * from books where genre=?"
                cursor = conn.cursor()
                cursor.execute(dbURL, (session['genre'],))
        else:
            dbURL = "SELECT * from books"
            cursor = conn.cursor()
            cursor.execute(dbURL)
        for row in cursor:
            booklist.append(row)
        return render_template('catalouge.html', booklist=booklist, genrelis
t=genrelist)
    return render_template('catalouge.html', genrelist=genrelist)


@app.route('/favourites', methods=["GET", "POST"])
def favourites():
    favlist = []
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    dbURL = "SELECT * from books where id in (Select id from fav where user
name=?)"
    cursor = conn.cursor()
    if 'username' in session:
```

```
        cursor.execute(dbURL,(session['username'],))
    for row in cursor:
        print(row)
        favlist.append(row)
    return render_template('favourites.html', favlist=favlist, genrelist=ge
nrelist)



@app.route('/book/<int:bookno>', methods=["GET", "POST"])
def getbook(bookno):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    dbURL = "select * from books where id=?"
    cursor = conn.cursor()
    cursor.execute(dbURL,(int(bookno),))
    bookdata=[]
    for row in cursor:
        bookdata=row
        break
    desc=getProductDescription(bookdata[5])[:-7]
    return render_template('book.html', bookdata=bookdata,desc=desc ,genrel
ist=genrelist)


def getProductDescription(link):
    page = requests.get(link)
    soup = BeautifulSoup(page.content, 'html.parser')
    article = soup.find('div', id='content_inner').find('article', class_="
product_page")
    paras=article.findAll('p')
    desc=(paras[3].string)
    return desc

def getBookDetails(booknum):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    dbURL = "select * from books where id=?"
    cursor = conn.cursor()
    cursor.execute(dbURL, (int(booknum),))
    bookdata = []
    for row in cursor:
        bookdata = row
    return row


@app.route('/addtocart/<int:bookno>', methods=["GET", "POST"])
def addtocart(bookno):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    try:
        dbURL = "insert into cart values(?,?,1)"
        cursor = conn.cursor()
        cursor.execute(dbURL, (session['username'], int(bookno),))
        conn.commit()
    except Exception as e:
```

```
        print(e)
        flash('Already in cart')
        return redirect(url_for('catalouge'))
    flash("Added to Cart")
    return redirect(url_for('catalouge'))


@app.route('/addtocartfromfav/<int:bookno>', methods=["GET", "POST"])
def addtocartfromfav(bookno):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    try:
        dbURL = "insert into cart values(?,?,1)"
        cursor = conn.cursor()
        cursor.execute(dbURL, (session['username'], int(bookno),))
        conn.commit()
    except Exception as e:
        print(e)
        flash('Already in cart')
        return redirect(url_for('favourites'))
    flash("Added to Cart")
    return redirect(url_for('favourites'))


@app.route('/addtocartfromview/<int:bookno>', methods=["GET", "POST"])
def addtocartfromview(bookno):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    try:
        dbURL = "insert into cart values(?,?,1)"
        cursor = conn.cursor()
        cursor.execute(dbURL, (session['username'], int(bookno),))
        conn.commit()
    except Exception as e:
        print(e)
        flash('Already in cart')
        return redirect(url_for('getbook', bookno=bookno))
    flash("Added to Cart")
    return redirect(url_for('getbook', bookno=bookno))


@app.route('/updatecart/<int:bookno>', methods=["POST"])
def updateCart(bookno):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    if(request.method=="POST"):
        quantity=request.form['quantity']
        if(int(quantity)<1):
            flash('Quantity must be atleast 1')
            return redirect(url_for('cart'))
        try:
            dbURL = "update cart set quantity=? where username=? and id=?"
            cursor = conn.cursor()
            cursor.execute(dbURL, (quantity,session['username'], int(bookno),
))
            conn.commit()
```

```
        except Exception as e:
            print(e)
            flash('Some error occured, please try again')
            return redirect(url_for('cart'))
    flash("Quantity Updated")
    return redirect(url_for('cart'))



@app.route('/removefromcart/<int:bookno>', methods=["GET", "POST"])
def removefromcart(bookno):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    try:
        dbURL = "delete from cart where username=? and id=?"
        cursor = conn.cursor()
        cursor.execute(dbURL, (session['username'], int(bookno),))
        conn.commit()
    except Exception as e:
        flash('Some error occured, please try again')
        return redirect(url_for('cart'))
    flash("Removed from Cart")
    return redirect(url_for('cart'))


@app.route('/addtofav/<int:bookno>', methods=["GET", "POST"])
def addtofav(bookno):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    try:
        dbURL = "insert into fav values(?,?)"
        cursor = conn.cursor()
        cursor.execute(dbURL, (session['username'],int(bookno),))
        conn.commit()
    except Exception as e:
        flash('Already in favourites')
        return redirect(url_for('catalouge'))
    flash("Added to Favourites")
    return redirect(url_for('catalouge'))


@app.route('/addtofavfromview/<int:bookno>', methods=["GET", "POST"])
def addtofavfromview(bookno):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    try:
        dbURL = "insert into fav values(?,?)"
        cursor = conn.cursor()
        cursor.execute(dbURL, (session['username'], int(bookno),))
        conn.commit()
    except Exception as e:
        print(e)
        flash('Already in favourites')
        return redirect(url_for('getbook',bookno=bookno))
    flash("Added to Favourites")
    return redirect(url_for('getbook', bookno=bookno))
```

```
@app.route('/removefromfav/<int:bookno>', methods=["GET", "POST"])
def removefromfav(bookno):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    try:
        dbURL = "delete from fav where username=? and id=?"
        cursor = conn.cursor()
        cursor.execute(dbURL, (session['username'], int(bookno),))
        conn.commit()
    except Exception as e:
        flash('Error')
        return redirect(url_for('favourites'))
    flash("Removed from Favourites")
    return redirect(url_for('favourites'))

@app.route('/orders')
def orders():
    orderlist = []
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    dbURL = "SELECT * from orders where username=?"
    cursor = conn.cursor()
    if 'username' in session:
        cursor.execute(dbURL, (session['username'],))
    for row in cursor:
        address=row[2]+', '+row[3]+', '+row[4]+', '+str(row[5])
        dat=row[8]
        orderid=row[1]
        amountpaid=row[7]
        paymentMethod=row[6]
        orderlist.append((orderid,address,dat,amountpaid,paymentMethod))
    return render_template('orders.html', genrelist=genrelist, orderlist=or
derlist)


@app.route('/cancel/<string:orderid>')
def cancel(orderid):
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
    conn = sqlite3.connect(bookstore)
    try:
        dbURL = "delete from orders where orderid=?"
        cursor = conn.cursor()
        cursor.execute(dbURL, (orderid,))
        conn.commit()
    except Exception as e:
        flash("Error")
    flash("Order Cancelled")
    return redirect(url_for('orders'))

@app.route('/checkout')
def checkout():
    price = 0
    quantity=0
    bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
```

```
    conn = sqlite3.connect(bookstore)
    dbURL = "SELECT B.name,B.id,B.rating,B.price,B.image,B.details,B.genre,
C.quantity from books as B,cart as C where C.id in (Select id from cart wh
ere username=?) and B.id==C.id"
    cursor = conn.cursor()
    if 'username' in session:
        cursor.execute(dbURL, (session['username'],))
    for row in cursor:
        quantity+=row[7]
        price += row[7]*row[3]
    price=round(price,2)
    if price==0 or quantity==0:
        flash("Cant checkout with ZERO items in cart")
        return redirect(url_for('cart'))
    return render_template('checkout.html', quantity=quantity, genrelist=ge
nrelist, price=price)


@app.route('/processCheckout', methods=['POST'])
def processCheckout():
    address = request.form['address']
    total = request.form['total']
    paymentMethod= request.form['paymentMethod']
    country = request.form['country']
    state = request.form['state']
    pincode = request.form['zip']
    quantity = request.form['quantity']
    if(pincode=='' or country=='' or state=='' or total==0 or address==''):
        flash("All fields are mandatory")
        return redirect(url_for('checkout',total=total,quantity=quantity))
    elif not isValidZip(pincode):
        flash("Invalid Zip")
        return redirect(url_for('checkout', total=total, quantity=quantity))
    else:
        username=session['username']
        datop = datetime.datetime.now()
        orderid= session['username']+str(int(datetime.datetime.timestamp(dat
op)*(10**6)))
        print(orderid)
        bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
        conn = sqlite3.connect(bookstore)
        try:
            dbURL = "insert into orders values(?,?,?,?,?,?,?,?,?)"
            cursor = conn.cursor()
            cursor.execute(dbURL, (username,orderid,address,country,state,pin
code,paymentMethod,total,datop))
            conn.commit()
        except Exception as e:
            print(e)
            flash("Some error occured while placing order. Check your connect
ion or try again")
            return redirect(url_for('checkout',quantity=quantity,total=total)
)
        deleteCart(username)
        flash("Order placed successfully")
        return redirect(url_for('orders'))
```

```python
def deleteCart(username):
   try:
      bookstore = os.path.join(ROOT_FOLDER, 'bookstore.db')
      conn = sqlite3.connect(bookstore)
      dbURL2 = "delete from cart where username=?"
      cursor2 = conn.cursor()
      cursor2.execute(dbURL2, (username,))
      conn.commit()
   except Exception as e:
      print(e)

@app.route('/logout')
def logout():
   session.pop('username',None)
   session.pop('fullname',None)
   session.pop('mobile',None)
   session.pop('email',None)
   session.pop('genre',None)
   return render_template('login.html', genrelist=genrelist)




if __name__=='__main__':
    app.run(debug=True)
```

Documentation:

Open cmd,

Then execute

```
git clone https://github.com/nivethsaran/BookStore.git
```

Then execute `.\venv\Scripts\activate` to activate virtual environment.

Then execute

```
pip install -r requirements.txt
```

Then execute `flask run` to deploy on local server.

Open **http://localhost:5000** in browser to view the flask app.

About Project:

- Book Corner is an online book store which consists of a variety of genres of books.
- User can login and logout of the platform
- User can view books and filter books with respect to their genres.
- Users can add and remove books to and from a favourites book list respectively
- Users can add and remove books to the cart and check the total in the cart page.
- Users can update quantity in cart and also checkout from the cart page.
- Users can view the description and rating of a book.
- Users can place order and also cancel placed orders from the Orders page.
- The homepage displays three books which are recommended to the user according to his preferences using cookies.
- Login and Signup uses sessions to manage an users session with the app.

Database:

Tables (6)

Name	Type	Schema
books		CREATE TABLE "books" ("name" TEXT, "id" INTEGER PRIMARY KEY AUTOINCREMENT, "rating" INTEGER, "price" REAL, "image" TEXT, "details" TEXT, "genre" TEXT)
name	TEXT	"name" TEXT
id	INTEGER	"id" INTEGER PRIMARY KEY AUTOINCREMENT
rating	INTEGER	"rating" INTEGER
price	REAL	"price" REAL
image	TEXT	"image" TEXT
details	TEXT	"details" TEXT
genre	TEXT	"genre" TEXT
cart		CREATE TABLE "cart" ("username" TEXT, "id" INTEGER, "quantity" INTEGER, PRIMARY KEY("username","id"))
username	TEXT	"username" TEXT
id	INTEGER	"id" INTEGER
quantity	INTEGER	"quantity" INTEGER
fav		CREATE TABLE "fav" ("username" TEXT, "id" INTEGER, PRIMARY KEY("username","id"))
username	TEXT	"username" TEXT
id	INTEGER	"id" INTEGER
orders		CREATE TABLE "orders" ("username" TEXT, "orderid" TEXT, "address" TEXT, "country" TEXT, "state" TEXT, "zip" INTEGER, "payment" TEXT, "total" REAL, "datetime" TEXT, PRIMARY KEY("orderid"))
username	TEXT	"username" TEXT
orderid	TEXT	"orderid" TEXT
address	TEXT	"address" TEXT
country	TEXT	"country" TEXT
state	TEXT	"state" TEXT
zip	INTEGER	"zip" INTEGER
payment	TEXT	"payment" TEXT
total	REAL	"total" REAL
datetime	TEXT	"datetime" TEXT
sqlite_sequence		CREATE TABLE sqlite_sequence(name,seq)
name	TEXT	"name" TEXT
seq	TEXT	"seq" TEXT
user		CREATE TABLE "user" ("fname" TEXT, "lname" TEXT, "username" TEXT UNIQUE, "password" TEXT, "email" TEXT, "mobile" TEXT, PRIMARY KEY("username"))
fname	TEXT	"fname" TEXT
lname	TEXT	"lname" TEXT
username	TEXT	"username" TEXT UNIQUE
password	TEXT	"password" TEXT
email	TEXT	"email" TEXT
mobile	TEXT	"mobile" TEXT

About Database:

- books table is used to store details about the books
- user table is used to save details about the user and used during login and signup
- cart and fav table are used to store favourites and cart items for every user.
- Orders table is used to store placed orders and also updated when a order needs to be cancelled.

Normalization:

- 2NF was applied to the table to avoid data redundancies.
- 3NF wasn’t required due to the absence of transitive dependencies.

Technical Details:

Tech Stack:

- Flask
- SQLLITE DB
- Bootstrap CSS
- Beautiful Soup (Scraping)

Python Libraries Used:

- re
- datetime
- urllib3
- time
- warnings
- sqlite3
- bs4
- random
- requests
- flask libraries like redirect, url_for, session etc.

How the tech stack was used to build the app?

- Sessions are used throughout the app. Once the user logs in it is stored in sessions and is popped out when user logs out.
- Sign-Up and Log-In page contains validation which uses the “re” library to match regex expressions.
- Used cookies to save the last searched genre of books and display results based on cookies in the home page.
- Made use of Variable Rules of Flask routing to Add books to cart and favourites from both the catalogue page and the View book page.
- The view book page views the synopsis of a book. This description is scraped off from toscrape.com using the Beautiful Soup library
- The connectivity to the Sqlite database was made using the sqlite3 python library. This library is used several times in this project.
- flash() method was used to display popup messages on screen about login errors, network error or other details.
- CSS is used to make the web app look visually better and to enhance the user experience.
- JavaScript was used to handle button clicks and to display a live clock in the footer of the webpage.