SOURCE CODE

```
import pickle
import os
def databases(): #function defining
    f=open('library.dat','wb')
    header=["Book code","Book name","Author name","Book price"]
    pickle.dump(header,f)
    fields=[[1,'Klara And The Sun','Kazuo Ishiguro ',455],
            [2,'Rich Dad Poor Dad','Robert Kiyosaki',568],
            [3,'The Butterfield ',' Rosaria Buterld',667],
            [4,'Geography Of India','Majid Hussain ',445],
            [5,'Man Who Counted  ','Malba  Tahan   ',325],
            [6,'One Indian Girl  ','Chetan  Bhagat ',567],
            [7,'Guns Of  August ',' Barbara Tuchman',456],
            [8,'Trans Atlantic  ',' Colum  McCannon',234],
            [9,'Tortoise And Hare','Eric Ham Carle ',123]]
    for i in fields:
        pickle.dump(i,f)
    f.close()
#function calling
databases()
def borrow_lend():
    f=open('dates.dat','wb')
    header=["Book code","Book name","Borrow Date","Return Date",'No of
days book lent for',"Book Returned"]
```

```
    pickle.dump(header,f)
    fields=[[1,'Klara And The Sun','1 janaury 2022','15 janaury 2022',15,'Yes'],
            [2,'Rich Dad Poor Dad','12 febraury 2022','27 febraury 2022',15,'Yes'],
            [4,'Geography Of India','1 september 2022','-',20,'No'],
            [8,'Trans Atlantic','12 janaury 2023','-',15,'No']]
    for i in fields:
        pickle.dump(i,f)
    f.close()
#function calling
borrow_lend()

def user_offer(): #function defining
    print('Read the following menu and enter your choice')
    print('\n')
    print('Press 1 to add records')
    print('Press 2 to display all book records')
    print('Press 3 to search a record by book code no.')
    print('Press 4 to search a record by book name')
    print('Press 5 to update a record without considering lending')
    print('Press 6 to delete a record by book code no.')
    print('Press 7 to search by code no. the details of lending the book')
    print('Press 8 to calculate and display interest due on the book lended')
    print('Press 9 to update details on return of the book lended')
    print('Press 10 to exit')
#function calling
user_offer()
```

```
print('\n')
c=int(input('Enter your choice here:'))

if c==1:
    def add_record(): #function defining
        try:
            f=open('library.dat','ab')
            z=0
            while True:
                cn=int(input("Enter book code no:"))
                name=input("Enter the book name:")
                author=input("Enter name of the author:")
                pr=float(input('Enter price of the book:'))
                borrow=0
                name=name.title()
                author=author.title()
                rec=[cn,name,author, pr,borrow]
                pickle.dump(rec,f)
                z+=1
                print("Record added in file")
                ch=input('Do you want to add more records? if yes press y or Y')
                if ch=='y'or ch=='Y':
                  continue
                else:
                  break
        except EOFError:
```

```
            f.close()
            if z==0:
                print('Problem occured.Please restart')
    #function calling
    add_record()

elif c==2:
    def displayrecords(): #function defining
        try:
            f=open("library.dat","rb")
            print('='*66)
            i=0
            while True:
                rec=pickle.load(f)
                if not rec:
                    break
                print(rec[0],' '*7,rec[1],' '*5,rec[2],' '*7,rec[3],end='\n')
                if i==0:
                    print('='*66)
                    i+=1
            f.close()
        except EOFError:
            print('='*66)
            f.close()
        except IOError:
            print("Unable to open the file")
```

```
    #function calling
    displayrecords()


elif c==3: #function defining
    def search_bycode():
        try:
            z=0
            s=int(input("Enter code no to search:"))
            f=open("library.dat","rb")
            while True:
                rec=pickle.load(f)
                if rec[0]==s:
                    z+=1
                    print('Book found')
                    print('='*77)
                    print("Book code",' '*9,"Book name",' '*13,"Author name",'
'*9,"Book price")
                    print('='*77)
                    print(rec[0],' '*15,rec[1],' '*6,rec[2],' '*7,rec[3])
                    print('='*77)
            f.close()
        except EOFError:
            f.close()
            if z==0:
                print("Book not found")
        except IOError:
            print("Unable to open the file.Please restart.")
```

```
    #function calling
    search_bycode()


elif c==4:
    def search_byname():  #function defining
        try:
            z=0
            s=input("Enter book name to search:")
            s=s.title()
            f=open("library.dat","rb")
            while True:
                rec=pickle.load(f)
                if rec[1]==s:
                    z+=1
                    print('Book found')
                    print('='*77)
                    print("Book code",' '*9,"Book name",' '*13,"Author name",'
'*9,"Book price")
                    print('='*77)
                    print(rec[0],' '*15,rec[1],' '*6,rec[2],' '*7,rec[3])
                    print(''='*77)
            f.close()
        except EOFError:
            f.close()
            if z==0:
                print("Record not found")
        except IOError:
```

```
            print("Unable to open the file")
        #function calling
        search_byname()

elif c==5:
    def update_record():  #function defining
        try:
            z=0
            s=int(input('Enter book code:'))
            f=open('library.dat','rb')
            tf=open('temp.dat','wb')
            while True:
                rec=pickle.load(f)
                if not rec:
                    break
                if rec[0]==s:
                    z+=1
                    print('Old record')
                    print('='*77)
                    print("Book code",' '*9,"Book name",' '*13,"Author name",' '*9,"Book
price")
                    print('='*77)
                    print(rec[0],' '*15,rec[1],' '*6,rec[2],' '*7,rec[3])
                    print('='*77)
                    print('\n')
                    print('Enter new data')
                    book_code=int(input('Book Code:'))
```

```
            book_name=input('Book Name:')
            author_name=input('Author Name:')
            book_price=int(input('Book Price:'))
            book_name=book_name.title()
            author_name=author_name.title()
            rec=[book_code,book_name,author_name,book_price]
            pickle.dump(rec,tf)
    except EOFError:
        f.close()
        tf.close()
        if z==0:
            print('Book not found')
        else:
          print('Record has been updated')
          os.remove('library.dat')
          os.rename('temp.dat','library.dat')
    except IOError:
        print('Unable to find the file.Please restart')
 #Function Calling
 update_record()

elif c==6:
   def delete_record(): #function defining
      try:
         z=0
         s=int(input("Enter book code to delete:"))
```

```
        f=open('library.dat','rb')
        tf=open('temp.dat','wb')
        while True:
            rec=pickle.load(f)
            if rec[0]==s:
                z+=1
                print('The record being deleted is:')
                print('='*77)
                print("Book code",' '*9,"Book name",' '*13,"Author name",'
'*9,"Book price")
                print('='*77)
                print(rec[0],'  '*15,rec[1],' '*6,rec[2],' '*7,rec[3])
                print('='*77)
            else:
                pickle.dump(rec,tf)
    except EOFError:
        f.close()
        tf.close()
        if z==0:
            print("Record not found")
        else:
            print('Record deleted succesfully')
            os.remove('library.dat')
            os.rename('temp.dat','library.dat')
    except IOError:
        print("Unable to open the file")
#function calling
```

```
    delete_record()


elif c==7:
    def search_bycodeno(): #function defining
        try:
            z=0
            a=int(input("Enter code no of book to be searched:"))
            f=open("dates.dat","rb")
            while True:
                rec=pickle.load(f)
                if rec[0]==a:
                    z+=1
                    print('Book found')
                    if rec[5]=='no' or rec[5]=='No' or rec[5]=='NO':
                        print('The entered book has not been returned')
                        print("It's details are")
                    else:
                        print('The entered book has been returned')
                        print("It's details are")
                    print('='*77)
                    print("Book code",' '*9,"Book name",' '*13,"Issue date",'
'*9,"Return date")
                    print('='*77)
                    print(rec[0],' '*15,rec[1],' '*6,rec[2],' '*7,rec[3])
                    print('='*77)
        except EOFError:
            f.close()
```

```
            if z==0:
                print("Record not found")
        except IOError:
            print("Unable to open the file")
    #function calling
    search_bycodeno()

elif c==8:
    def interest(): #function defining
        try:
            z=0
            a=int(input("Enter code no of book to be searched:"))
            f=open("dates.dat","rb")
            while True:
                rec=pickle.load(f)
                if rec[0]==a:
                    z+=1
                    print('Book found')
                    print('='*120)
                    print("Book code",' '*9,"Book name",' '*13,"Issue date",'
'*9,"Return date",' '*3,'No of days book was lent for')
                    print('='*120)
                    print(rec[0],' '*15,rec[1],' '*6,rec[2],' '*7,rec[3],' '*9,rec[4])
                    print('='*120)
                    print('\n')
                    if rec[5]=='no' or rec[5]=='No' or rec[5]=='NO':
                        t=rec[4]
```

```
                    r=5
                    inst=r*t
                    print('The entered book has not beeen returned')
                    print('The book was to be returned in ',rec[4],'days')
                    print('Interest due till the required date of return is',inst)
                    print('There will be a penalty charge of 10rs each day till the book is returned for late return')
                else:
                    print('The entered book has been returned on',rec[3])

        except EOFError:
            f.close()
            if z==0:
                print("The entered book has not been lent")
        except IOError:
            print("Unable to open the file")
    #function calling
    interest()

elif c==9:
    def update_byrecord(): #function defining
        try:
            z=0
            s=int(input('Enter book code no: '))
            f=open('dates.dat','rb')
            tf=open('temp.dat','wb')
            while True:
```

```
        rec=pickle.load(f)
        if rec[0]==s:
            z+=1
            if rec[5]=='no' or rec[5]=='No' or rec[5]=='NO':
                print('Book found')
                print('='*120)
                print("Book code",' '*9,"Book name",' '*13,"Issue date",'
'*9,"Return date",' '*3,'No of days book was lent for')
                print('='*120)
                print(rec[0],' '*15,rec[1],' '*6,rec[2],' '*7,rec[3],' '*9,rec[4])
                print('='*120)
                print('\n')
                rec[5]='Yes'
                m=input('Enter month of return in words:')
                d=input('Enter date of return:')
                y=input('Enter year of return:')
                rec[3]=d+' '+m+' '+y
                print('The entered return date is',rec[3])
                tp=[rec[0],rec[1],rec[2],rec[3],rec[4],rec[5]]
                pickle.dump(rec,tf)
                print('Return succesful')
                ch=input('Do you want to enter more records of return ?If yes
enter y')
                if ch=='Y' or ch=='y':
                    continue
                else:
                    break
```

```
            else:
                print('The entered book has been returned on',rec[3])
                break
    except EOFError:
        f.close()
        tf.close()
        if z==0:
            print('The entered book has not been lended')
        else:
            os.remove('library.dat')
            os.rename('temp.dat','library.dat')
    except IOError:
        print('Unable to find the file')
  #Function Calling
  update_byrecord()

elif c==10:
   print('You chose to exit')

else:
   print('Wrong choice entered .Please restart')
```

OUTPUTS

When user chooses to:

1)Add a record

```
Enter your choice here:1
Enter book code no:10
Enter the book name:life is what you make it
Enter name of the author:preeti shenoy
Enter price of the book:332
Record added in file
Do you want to add more records? if yes press y or Y
```

2)Display all records

```
Enter your choice here:2
=================================================================
Book code          Book name        Author name          Book price
=================================================================
1          Klara And The Sun        Kazuo Ishiguro           455
2          Rich Dad Poor Dad        Robert Kiyosaki          568
3          The Butterfield          Rosaria Buterld          667
4          Geography Of India        Majid Hussain           445
5          Man Who Counted          Malba  Tahan             325
6          One Indian Girl          Chetan  Bhagat           567
7          Guns Of  August          Barbara Tuchman          456
8          Trans Atlantic           Colum  McCannon          234
9          Tortoise And Hare        Eric Ham Carle           123
=================================================================
```

3)Search a record by book code

```
Enter your choice here:3
Enter code no to search:4
Book found
=================================================================================
Book code            Book name                Author name            Book price
=================================================================================
4                 Geography Of India        Majid Hussain           445
=================================================================================
```

4)Search a record by book name

```
Enter your choice here:4
Enter book name to search:rich dad poor dad
Book found
================================================================================
Book code            Book name                Author name            Book price
================================================================================
2                  Rich Dad Poor Dad        Robert Kiyosaki          568
================================================================================
```

5)Update a record by book code

```
Enter your choice here:5
Enter book code:4
Old record
================================================================================
Book code            Book name                Author name            Book price
================================================================================
4                  Geography Of India        Majid Hussain           445
================================================================================


Enter new data
Book Code:4
Book Name:three biggest mistakes of my life
Author Name:chetan bhagat
Book Price:325
Record has been updated
```

6)Search a record by book code

```
Enter your choice here:6
Enter book code to delete:4
The record being deleted is:
================================================================================
Book code            Book name                Author name            Book price
================================================================================
4                  Geography Of India        Majid Hussain           445
================================================================================
Record deleted succesfully
```

7)Search lending details of a record by book code

```
Enter your choice here:7
Enter code no of book to be searched:4
Book found
The entered book has not been returned
It's details are
================================================================================
Book code            Book name                Issue date            Return date
================================================================================
4                  Geography Of India         1 september 2022          -
================================================================================
```

8)Display interest on a book lent by book code

```
Enter your choice here:8
Enter code no of book to be searched:4
Book found
=============================================================================================================
Book code           Book name               Issue date           Return date     No of days book was lent for
=============================================================================================================
4                 Geography Of India        1 september 2022         -           20
=============================================================================================================


The entered book has not beeen returned
The book was to be returned in  20 days
Interest due till the required date of return is 100
There will be a penalty charge of 10rs each day till the book is returned for late return
```

9)Entering date of return of a book by book code

```
Enter your choice here:9
Enter book code no: 4
Book found
=============================================================================================================
Book code           Book name               Issue date           Return date     No of days book was lent for
=============================================================================================================
4                 Geography Of India        1 september 2022         -           20
=============================================================================================================


Enter month of return in words:october
Enter date of return:3
Enter year of return:2022
The entered return date is 3 october 2022
Return succesful
Do you want to enter more records of return ?If yes enter y
```