VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI - 590 018, KARNATAKA

A Mini Project Report on

"Implementing general ledger problem using consequential processing"

Submitted in the partial fulfillment for the requirements for the FS Lab with Mini Project (18ISL67)

in

INFORMATION SCIENCE AND ENGINEERING

By

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

BMS INSTITUTE OF TECHNOLOGY & MANAGEMNT
YELAHANKA, BENGALURU-560064

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CERTIFICATE

This is to certify that the Project work entitled **"**Implementing general ledger problem using consequential processing**"** is a bonafide work carried out by **Mr. Nithin Urala M R (1BY18IS076)**, **Mr. Pranav R Deshkulkarni (1BY18IS087),** in partial fulfillment of File structures Lab with Mini Project (18ISL67) for the award of **Bachelor of Engineering Degree in Information Science and Engineering** of the Visvesvaraya Technological University, Belagavi during the year 2020-21. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in this report. The project report has been approved as it satisfies the academic requirements in respect of Mini Project work for the B.E Degree.

Signature of the Guide	**Signature of the HOD**
Mrs. Shanthi D L	Dr. Pushpa S.K
Assistant Professor	Professor and Head
Department of ISE	Department of ISE

EXTERNAL EXAMINERS

Name of the Examiners	Signature with Date
1.	
2.	

ACKNOWLEDGEMENT

We are happy to present this mini project after completing it successfully. This mini project would not have been possible without the guidance, assistance and suggestions of many individuals. We would like to express our deep sense of gratitude and indebtedness to each and every one who has helped us make this mini project a success.

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Last but not the least we would like to thank God for giving us the strength and motivation through the course of this Project.

By,

Nithin Urala M R

Pranav R Deshkulkarni

ABSTRACT

A general ledger is the system employed by accountants to store and organize financial data used to create the firm's financial statements. Our project provides a solution for the general ledger problem using the concept of consequential processing. The system includes a journal file and a ledger file. The ledger file contains month-by-month summaries of the values as associated with each of the bookkeeping accounts. The journal file contains the monthly transactions that are ultimately to be posted to the ledger file. Once the journal file is complete for a given month, the journal must be posted. Posting involves associating each transaction with its account in the ledger. Our project aims to provide a system that could easily process the transactions of various accounts by maintaining a virtual ledger file that stores all transaction related information. To implement posting we have used the concept of consequential processing where we process the two lists sequentially in a parallel manner.

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CHAPTER - 1

Introduction

1.1 Outline

The project provides a solution for the general ledger problem using the concept of consequential processing. Consequential processing involves the coordinated processing of two or more sequential lists to produce a single output list. Consequential processing can be applied to problems that involve the performance of set operations on two or more sorted input files to produce one or more output files. Set operations can include union, intersection or more complex processes.

General ledger problem is based on accounting system. The system include a journal file and a ledger file :

- **Ledger file :** It contains month-by-month summaries of the values as associated with each of the bookkeeping accounts.
- **Journal file :** It contains the monthly transactions that are ultimately to be posted to the ledger file.

Once the journal file is complete for a given month, the journal must be posted to the ledger.

1.2 Motivation and Scope

Main motivation of the project is to implement the concept of cosequential processing to solve real time problem, that is, the general ledger problem. Since this problem involves both matching and merging concepts of cosequential processing it is one of the challenging problem which could be worked upon.

In our project we can view the contents of journal, ledger, add record to journal, post journal to ledger and get the ledger printout. The files are actually stored in the memory and the records within the files stored are of variable length where each field is separated using a separator.

1.3 Problem Statement

Design a general ledger posting program as part of an accounting system using cosequential processing.

1.4 Limitations

1. The system does not include a supporting front-end. Hence it will be hard if the number of accounts in the file increase. However the program prints the contents of the file in a well formatted way to overcome this limitation.
2. Once a record is added to the journal file, it is not possible to delete it within the program.

CHAPTER - 2
Requirements Specification

2.1 System Requirements

2.3.1 Hardware Requirements

- Intel i3 processor and above.
- Minimum of 128 MB on board memory.
- Windows 7/8/10 Operating System.
- VGA Monitor.

2.3.2 Software Requirements

- Requires JDK 8, Java SE.
- Text Editor such as Notepad, Sublime Text.

2.2 Non-Functional Requirements

- **Information Access:** Information can be accessed with ease and the file is stored as a text file in the memory which makes it easier to access.
- **Flexible**: It is flexible. New records can be added and viewed easily.
- **Reporting:** We will get detailed printout of ledger which is helpful for us as it shows details of all transactions pertaining to a particular account in a sorted order.
- Shows detailed information about each transaction of a particular account including check number, date of transaction, description and the credit/debit amount.
- Shows trial balance and new balance at the end of each account's transactions.

CHAPTER - 3

System Design

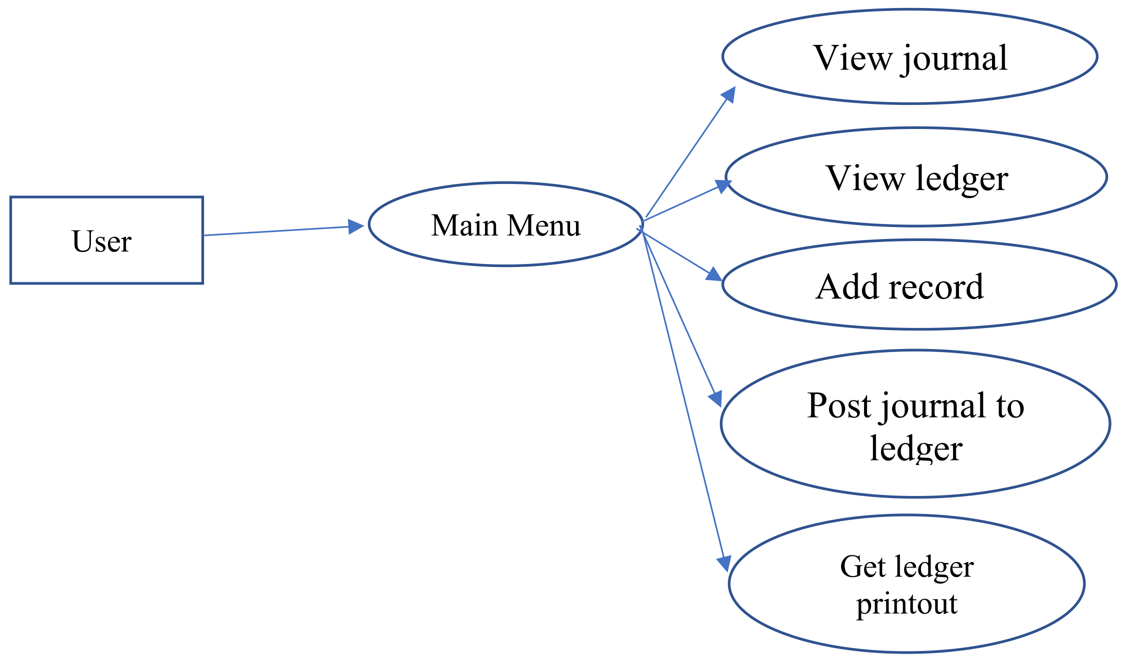


Fig 3.1 : System Design

Following figure 3.1 shows the overall system design of the program. The system has five choices to choose from. They are :

- **View journal:** We can view the journal file which contains monthly transactions that are ultimately to be posted to the ledger file.
- **View ledger:** We can view the ledger file which contains month-by-month summaries of the values associated with each of the bookkeeping accounts.
- **Add record to journal:** In this option we can add new record to the journal file. The records within the journal file are stored using the concept of variable length record.
- **Post journal to ledger:** Once the record transactions are written in the journal, it is posted to the general ledger at the end of the month. This requires us to compare the account numbers of a record of journal with that of a ledger record and if a match is found then that particular record is posted into the ledger file.

- **Get ledger printout:**
    1. Immediately after reading a new ledger object we need to print the header line and initialize the balance for the next month from the previous month's balance.
    2. For each transaction object that matches, we need to update the account balance.
    3. After the last transaction for the account, the balance line should be printed. This is the place, where a new ledger record could be written to create a new ledger file.

Java is a programming language and a platform. Java is a high level, robust, object-oriented and secure programming language. We are using Java as our programming language to code and to define different functional classes to perform different tasks. In the main function we are using the switch case to give choices to the user to perform their tasks of choice.

Few packages that we have used in our project are as follows :

- **Scanner :** Java Scanner class in Java is found in the java.util package. Java provides various ways to read input from the keyboard, the java.util.Scanner class is one of them.

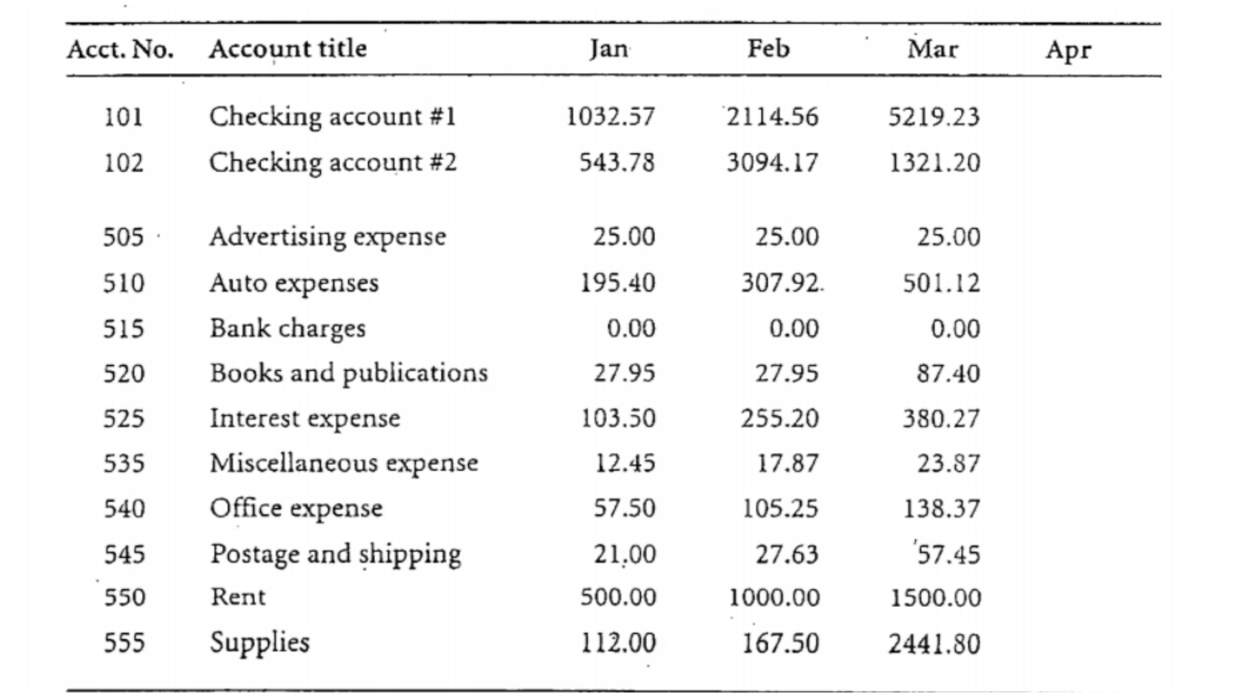
    The Java Scanner class breaks the input into tokens using a delimiter which is white space by default. It provides many methods to read and parse various primitive values.

    The Java Scanner class is widely used to parse text for strings and primitive types using a regular expression. It is the simplest way to get input in Java. By the help of Scanner in Java, we can get input from the user in primitive types such as int, long, double, byte, float, short, etc.
- **BufferedReader :** Java BufferedReader is a class which simplifies reading text from a character input stream. It buffers the characters in order to enable efficient reading of text data.
- **PrintWriter :** Java PrintWriter class is the implementation of Writer class. It is used to print the formatted representation of objects to the text-output stream.
- **BufferedWriter :** BufferedWriter writes text to character output stream, buffering characters so as to provide for the efficient writing of single characters, arrays, and strings.

CHAPTER - 4

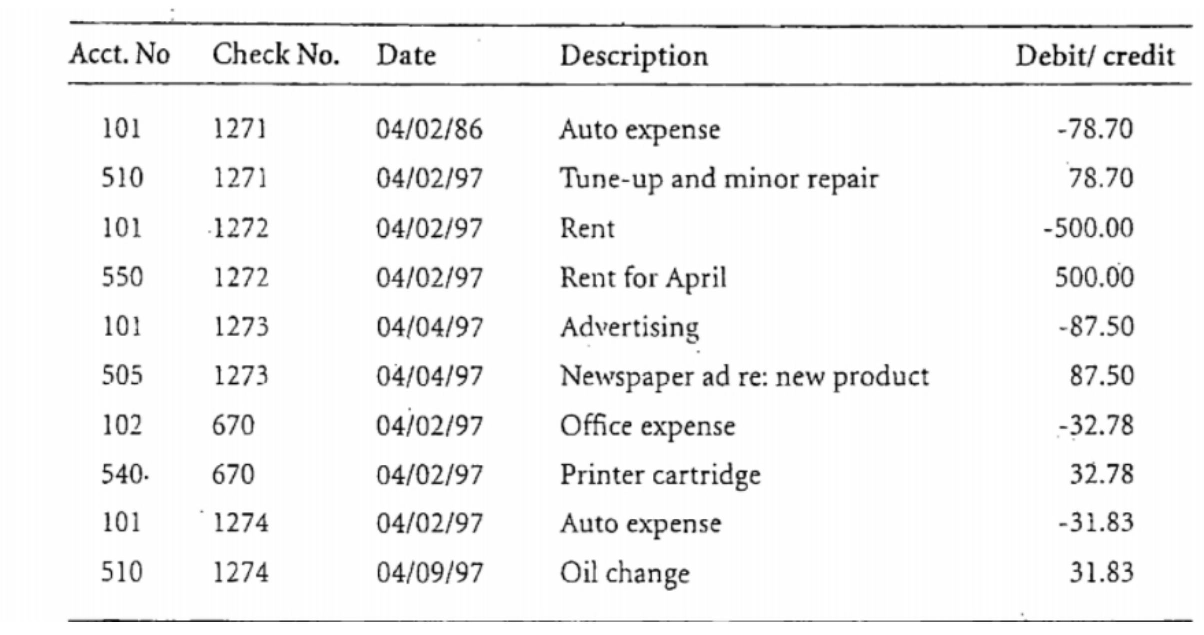
GENERAL LEDGER TABLE ENTRIES

4.1 Journal and Ledger entries



Acct. No.	Account title	Jan	Feb	Mar	Apr
101	Checking account #1	1032.57	2114.56	5219.23	
102	Checking account #2	543.78	3094.17	1321.20	
505	Advertising expense	25.00	25.00	25.00	
510	Auto expenses	195.40	307.92	501.12	
515	Bank charges	0.00	0.00	0.00	
520	Books and publications	27.95	27.95	87.40	
525	Interest expense	103.50	255.20	380.27	
535	Miscellaneous expense	12.45	17.87	23.87	
540	Office expense	57.50	105.25	138.37	
545	Postage and shipping	21.00	27.63	57.45	
550	Rent	500.00	1000.00	1500.00	
555	Supplies	112.00	167.50	2441.80	

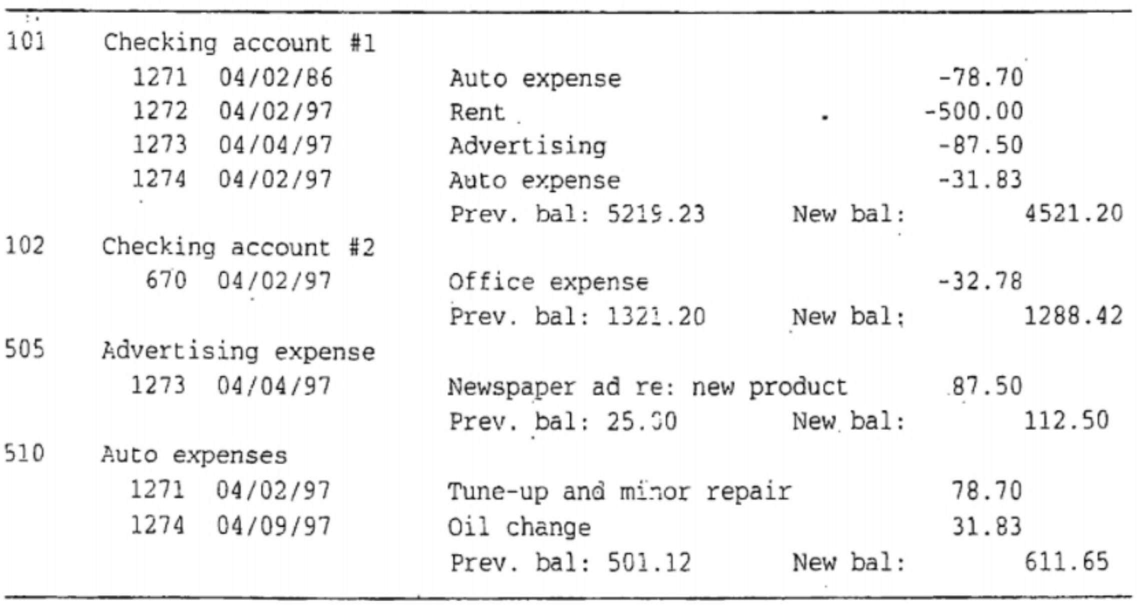
Fig 4.1.1 : Sample Ledger Entries



Acct. No	Check No.	Date	Description	Debit/ credit
101	1271	04/02/86	Auto expense	-78.70
510	1271	04/02/97	Tune-up and minor repair	78.70
101	1272	04/02/97	Rent	-500.00
550	1272	04/02/97	Rent for April	500.00
101	1273	04/04/97	Advertising	-87.50
505	1273	04/04/97	Newspaper ad re: new product	87.50
102	670	04/02/97	Office expense	-32.78
540	670	04/02/97	Printer cartridge	32.78
101	1274	04/02/97	Auto expense	-31.83
510	1274	04/09/97	Oil change	31.83

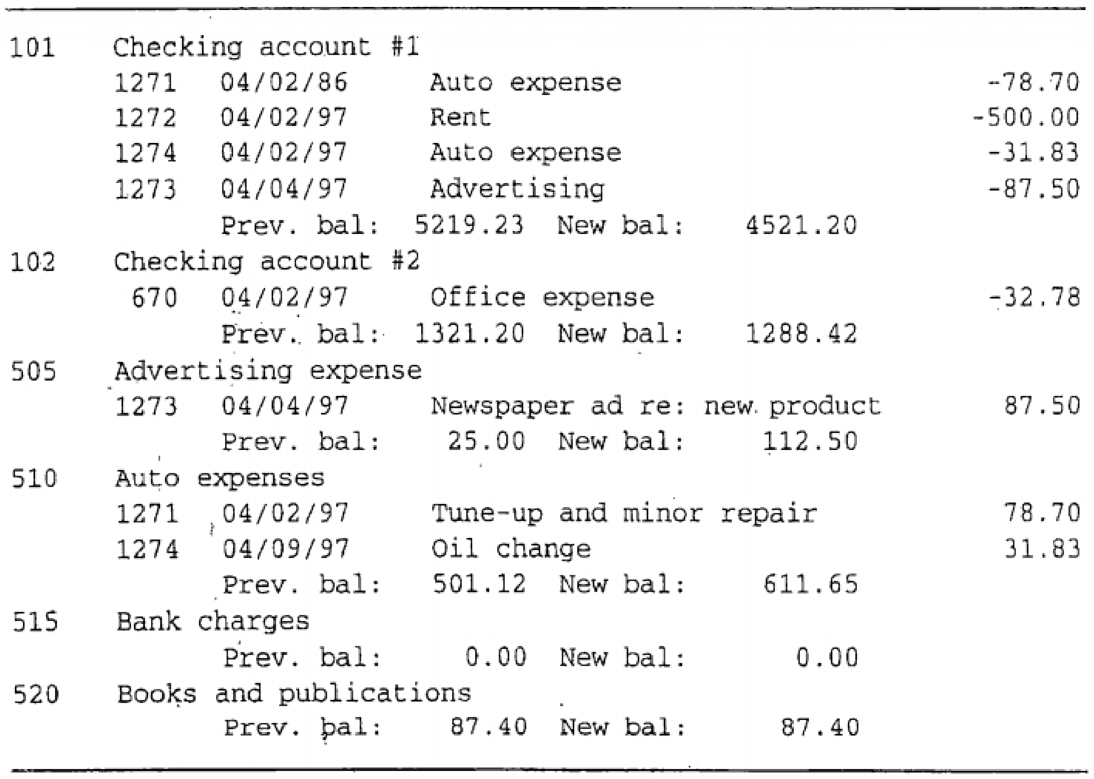
Fig 4.1.2 : Sample Journal Entries

Once the journal file is complete for a· given month, meaning that it contains all of the transactions for that month, the journal must be posted to the ledger. Posting involves associating each transaction with its- account. in the ledger. For example, the printed output produced for accounts 101, 102, 505, and 510 during the posting operation.



```
101    Checking account #1
         1271  04/02/86       Auto expense                          -78.70
         1272  04/02/97       Rent                                 -500.00
         1273  04/04/97       Advertising                           -87.50
         1274  04/02/97       Auto expense                          -31.83
                              Prev. bal: 5219.23      New bal:           4521.20
102    Checking account #2
          670  04/02/97       Office expense                        -32.78
                              Prev. bal: 1321.20      New bal:           1288.42
505    Advertising expense
         1273  04/04/97       Newspaper ad re: new product           87.50
                              Prev. bal: 25.00        New bal:            112.50
510    Auto expenses
         1271  04/02/97       Tune-up and minor repair               78.70
         1274  04/09/97       Oil change                             31.83
                              Prev. bal: 501.12       New bal:            611.65
```

Fig 4.1.3 : Sample ledger printout showing the effect of posting from the journal



```
101    Checking account #1
       1271   04/02/86     Auto expense                          -78.70
       1272   04/02/97     Rent                                 -500.00
       1274   04/02/97     Auto expense                          -31.83
       1273   04/04/97     Advertising                           -87.50
              Prev. bal:  5219.23  New bal:    4521.20
102    Checking account #2
        670   04/02/97     Office expense                        -32.78
              Prev. bal:  1321.20  New bal:    1288.42
505    Advertising expense
       1273   04/04/97     Newspaper ad re: new product           87.50
              Prev. bal:    25.00  New bal:     112.50
510    Auto expenses
       1271   04/02/97     Tune-up and minor repair               78.70
       1274   04/09/97     Oil change                             31.83
              Prev. bal:   501.12  New bal:     611.65
515    Bank charges
              Prev. bal:     0.00  New bal:       0.00
520    Books and publications
              Prev. bal:    87.40  New bal:      87.40
```

Fig 4.1.4 : Sample Ledger Printout of all six accounts

In summary, there are three different steps in processing the ledger entries:

1. Immediately after reading a new ledger object we need to print the header line and initialize the balance for the next month from the previous month's balance.
2. For each transaction object that matches, we need to update the account balance.
3. After the last transaction for the· account, the balance line should be printed. This is the place ,where a new ledger record could be written to create a new ledger file.

CHAPTER - 5

IMPLEMENTATION

5.1 Java Code for implementation of General Ledger Problem

```
import java.io.*;
import java.util.*;

class ledger {
    public static void main(String[] args) throws IOException {
        int choice;
        Scanner scan = new Scanner(System.in);
        while(true) {
            System.out.println("---------------------------------------------");
            System.out.println("FILE STRUCTURES LAB WITH MINI PROJECT(18ISL67)");
            System.out.println("---------------------------------------------");
            System.out.println("WELCOME TO GENERAL LEDGER PROGRAM");
            System.out.println("---------------------------------------------");
            System.out.println("1. View Journal");
            System.out.println("2. View Ledger");
            System.out.println("3. Add Record to journal");
            System.out.println("4. Post Journal to Ledger");
            System.out.println("5. Get Ledger Printout");
            System.out.println("6. Exit");
            System.out.println("---------------------------------------------");
            System.out.println("ENTER YOUR CHOICE");
            System.out.println("---------------------------------------------");
            choice = scan.nextInt();
            switch(choice) {
              case 1 :  System.out.println("View Journal Part");
                        display_journal();
                        break;
              case 2 :  System.out.println("View Ledger Part");
                        display_ledger();
                        break;
              case 3 :  System.out.println("Add record to Journal Part");
                        add_record();
                        break;
              case 4 :  post();
                        System.out.println("Journal Posted to Ledger!");
                        break;
              case 5 :  System.out.println("-----------------------------------------------------------------");
                        System.out.println("\t\t\t\tLEDGER PRINTOUT");
                        print_ledger();
                        break;
              case 6 :  System.out.println("Exit(0);
              }
            }
          }
          //Method for displaying the journal
            public static void display_journal() throws IOException {
              String acctno = "",check = "",date = "",desc = "",cred = "",s;
              System.out.println("_____________________________________________________________");
              System.out.println("Acct. No\tCheck. No\tDate\t\tDescription\t\tCredit/Debit");
              System.out.println("_____________________________________________________________");
              BufferedReader b = new BufferedReader(new FileReader("journal.txt"));
              while((s = b.readLine())!=null)
              {
                String result[] = s.split("\\|");
                acctno = result[0];
                check = result[1];
                date = result[2];
                desc = result[3];
                cred = result[4];
                System.out.println(acctno + "\t\t" + check + "\t\t" + date + "\t" + desc + "\t\t" + cred);
              }
              b.close();
              System.out.println("_____________________________________________________________");
            }
```

```
	//Method for displaying the ledger
	public static void display_ledger() throws IOException{
	  String s, acctno = "", acctitle = "", jan = "", feb = "", mar = "", apr = "", may = "";
	  String jun = "", jul = "", aug = "", sep = "", oct = "", nov = "", dec = "";
	  System.out.println("______________________________________________________");
	  System.out.println("Acct. No\tAccount 
Title\t\tJan\tFeb\tMar\tApr\tMay\tJun\tJul\tAug\tSep\tOct\tNov\tDec");
	  System.out.println("______________________________________________________");
	  BufferedReader b = new BufferedReader(new FileReader("ledger.txt"));
	  while((s = b.readLine())!=null)
	  {
	    String result[] = s.split("\\|");
	    acctno = result[0];
	    acctitle = result[1];
	    jan = result[2];
	    feb = result[3];
	    mar = result[4];
	    apr = result[5];
	    may = result[6];
	    jun = result[7];
	    jul = result[8];
	    aug = result[9];
	    sep = result[10];
	    oct = result[11];
	    nov = result[12];
	    dec = result[13];
	    System.out.println(acctno + "\t\t" + acctitle + "\t\t" + jan + "\t" + feb + "\t" +  mar + "\t" + 
apr + "\t" + may + "\t" + jun + "\t" + jul + "\t" + aug + "\t" + sep + "\t" + oct + "\t" + nov + "\t" + 
dec);
	  }
	  b.close();
	  System.out.println("_____________________________________________________");
	}
	//Method for adding record into the journal
	public static void add_record() throws IOException, FileNotFoundException{
```

```
            String acctno,check,date,desc,cred;
            Scanner scan = new Scanner(System.in);
            System.out.println("Enter the Details of the Transaction: ");
            System.out.print("Account Number: ");
            acctno = scan.nextLine();
            System.out.print("Check Number: ");
            check = scan.nextLine();
            System.out.print("Date: ");
            date = scan.nextLine();
            System.out.print("Description: ");
            desc = scan.nextLine();
            System.out.print("Credit/Debit: ");
            cred = scan.nextLine();
            pack(acctno,check,date,desc,cred);
        }

        public static void pack(String acctno,String check,String date,String desc,String cred)
throws IOException,FileNotFoundException{
            PrintWriter pw = new PrintWriter(new BufferedWriter(new FileWriter("journal.txt",true)));
            String b = acctno + "|" + check + "|" + date + "|" + desc + "|" + cred + "|";
            pw.println(b);
            pw.flush();
            pw.close();
        }

        //Method for posting the journal file to the ledger file
        public static void post() throws IOException{
            //get sorted journal and ledger list and create third list to store merged text.
            sort_journal();
            String acctno = "",check = "",date = "",desc = "",cred = "",ledgerno = "",acctitle = "";
            String olds = null;
            BufferedReader br1 = new BufferedReader(new FileReader("journal.txt"));
            BufferedReader br2 = new BufferedReader(new FileReader("ledger.txt"));
            PrintWriter pw = new PrintWriter("finalledger.txt");
//if(ledgeritem1 == journalitem2) print(item2) movetonext(item2)
```

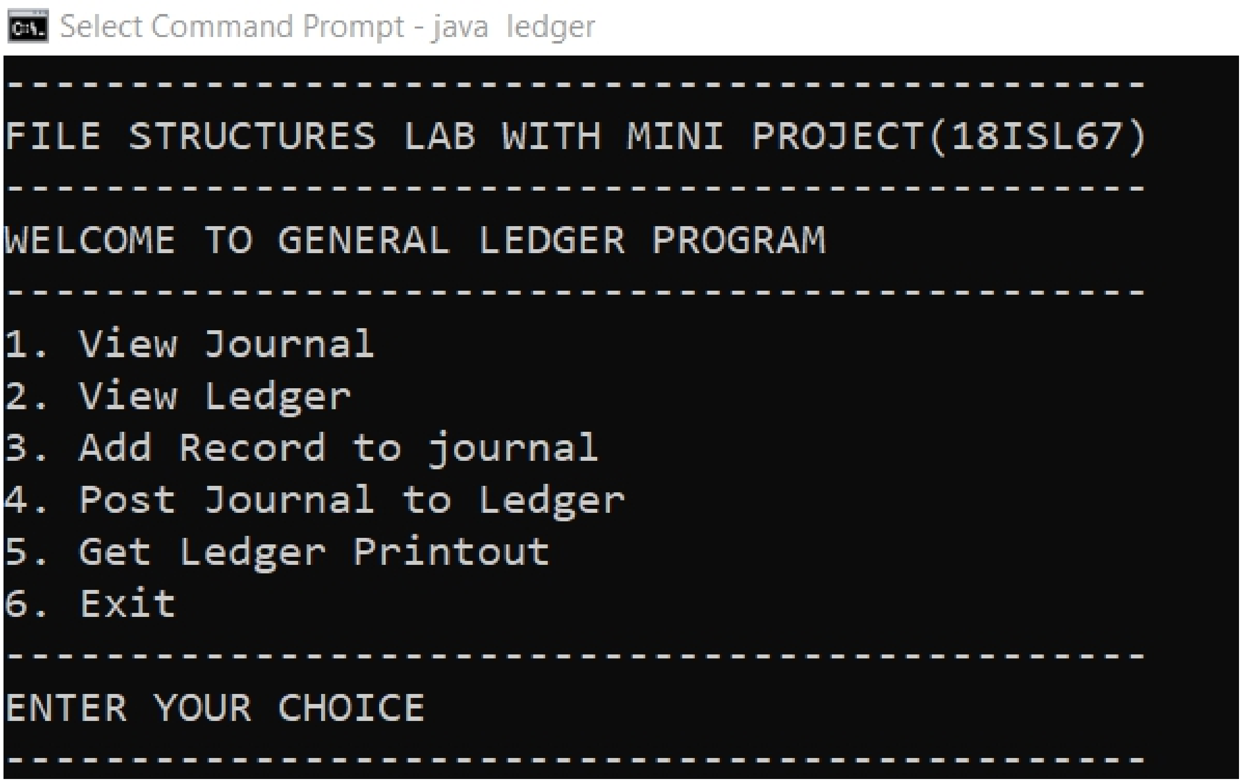
```
//if(ledgeritem1 > journalitem2) means no match for ledger. movetonext(journalitem2)
//if(ledgeritem1 < journalitem2) means item1's account details are done. movetonext(ledgeritem1)
        String s = br1.readLine();
        String t = br2.readLine();
        while((s!=null)||(t!=null)) {
        String result1[] = s.split("\\|");
        String result2[] = t.split("\\|");
        acctno = result1[0];
        check = result1[1];
        date = result1[2];
        desc = result1[3];
        cred = result1[4];
        ledgerno = result2[0];
        acctitle = result2[1];
        if(ledgerno == acctno) {
          String b = acctno + "|" + acctitle + "|" + check + "|" + date + "|" + desc + "|" + cred + "|";
          pw.println(b);
          s = br1.readLine();
        }
        else if(Integer.parseInt(ledgerno) < Integer.parseInt(acctno)) {
          if((olds == ledgerno) || (olds!=null)) {
              t = br2.readLine();
          }
          else {
            String a = acctno + "|" +  acctitle + "|0|0|0|0|";
            pw.println(a);
            t = br2.readLine();
          }
        }
        else { //ledgerno > acctno
          String b = acctno + "|" + acctitle + "|" + check + "|" + date + "|" + desc + "|" + cred + "|";
          pw.println(b);
          s = br1.readLine();
        }
        if(s == null) {
```

```
    while(t!=null)  {
      t = br2.readLine();
      if(t == null) {
        break;
      }
      String result3[] = t.split("\\|");
      ledgerno = result3[0];
      acctitle = result3[1];
      String a = ledgerno + "|" + acctitle + "|0|0|0|0|";
      pw.println(a);
    }
  }
  olds = acctno;
  }
  pw.flush();
  pw.close();
  br1.close();
  br2.close();
}

//Method for sorting the Journal
public static void sort_journal() throws IOException {
  BufferedReader br = new BufferedReader(new FileReader("journal.txt"));
  ArrayList<String> str = new ArrayList<>();
  String line = "";
  while((line = br.readLine())!=null){
    str.add(line);
  }
  br.close();
  Collections.sort(str);
  FileWriter writer = new FileWriter("journal.txt");
  for(String s: str){
    writer.write(s);
    writer.write("\n");
  }
  writer.close();
 }

 //Method for getting Ledger Printout
 public static void print_ledger() throws IOException {
  String acctno = "",acctitle = "",check = "",date = "",desc = "",cred = "";
  int old = 0,prevbal = 0,newbal = 0,count = 0 ;
  BufferedReader br = new BufferedReader(new FileReader("finalledger.txt"));
  String s,l;
  BufferedReader br1 = new BufferedReader(new FileReader("ledger.txt"));
  while((s=br.readLine())!=null) {
   String result[] = s.split("\\|");
   acctno = result[0];
   acctitle = result[1];
   check = result[2];
   date = result[3];
   desc = result[4];
   cred = result[5];
   if(Integer.parseInt(acctno) > old) {
    if(old!=0) {
     l = br1.readLine();
     String result1[] = l.split("\\|");
     int i = 2;
     while(i<14) {
       prevbal += Integer.parseInt(result1[i]);
       i++;
     }
     newbal = prevbal + count;
     System.out.println("\n\t\t\t\tPrev Balance : " + prevbal + "\tNew Balance : " + newbal);
     System.out.println("---------------------------------------------------------------------------");
     prevbal = 0;
     newbal = 0;
    }
    else
     System.out.println("---------------------------------------------------------------------------");
```

```
                System.out.println(acctno + "\t" + acctitle);
                System.out.println("-------------------------------------------------------------------------");
                System.out.println("\t\t\t" + check + "\t" + date + "\t" + desc + "\t" + cred);
                count = Integer.parseInt(cred);
              }
              else {
                System.out.println("\t\t\t" + check + "\t" + date + "\t" + desc + "\t" + cred);
                count += Integer.parseInt(cred);
              }
              old = Integer.parseInt(acctno);
            }
        }
    }
```

CHAPTER - 6

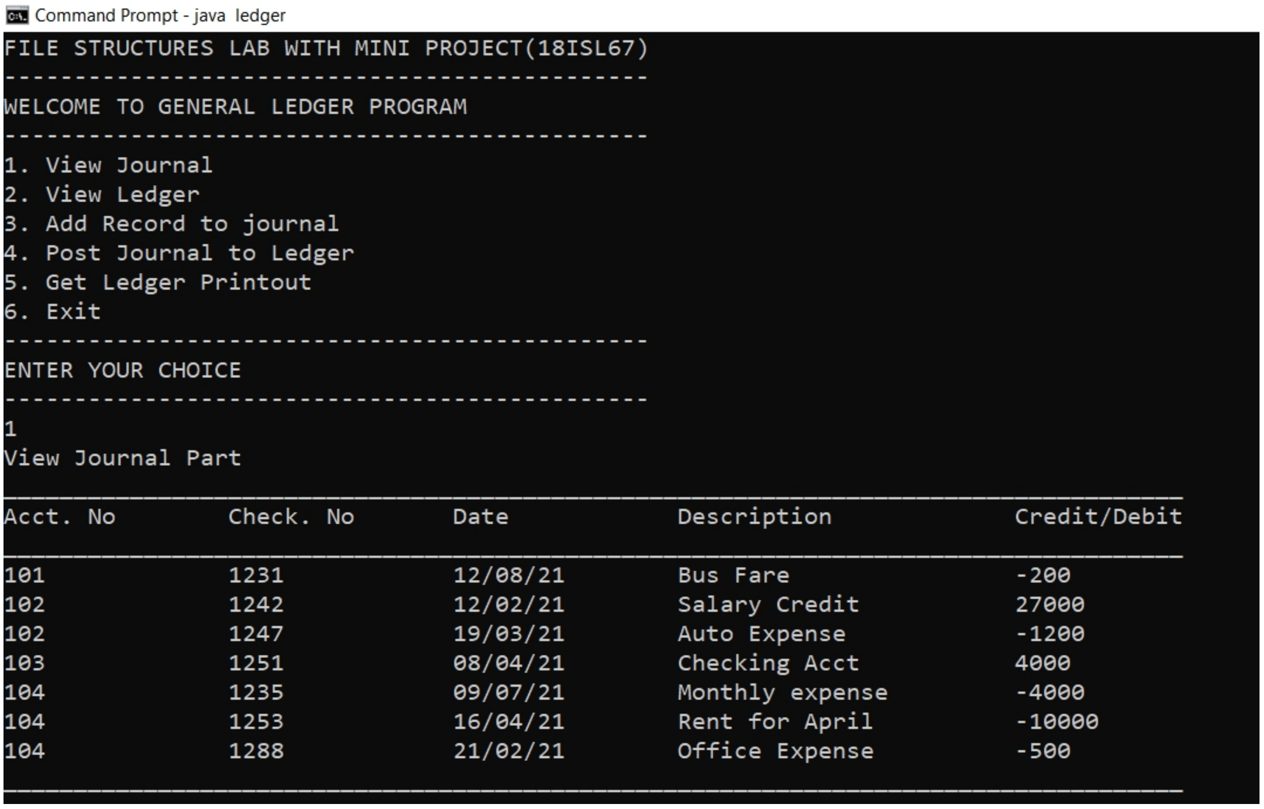
RESULTS



Select Command Prompt - java ledger

```
---------------------------------------------
FILE STRUCTURES LAB WITH MINI PROJECT(18ISL67)
---------------------------------------------
WELCOME TO GENERAL LEDGER PROGRAM
---------------------------------------------
1. View Journal
2. View Ledger
3. Add Record to journal
4. Post Journal to Ledger
5. Get Ledger Printout
6. Exit
---------------------------------------------
ENTER YOUR CHOICE
---------------------------------------------
```

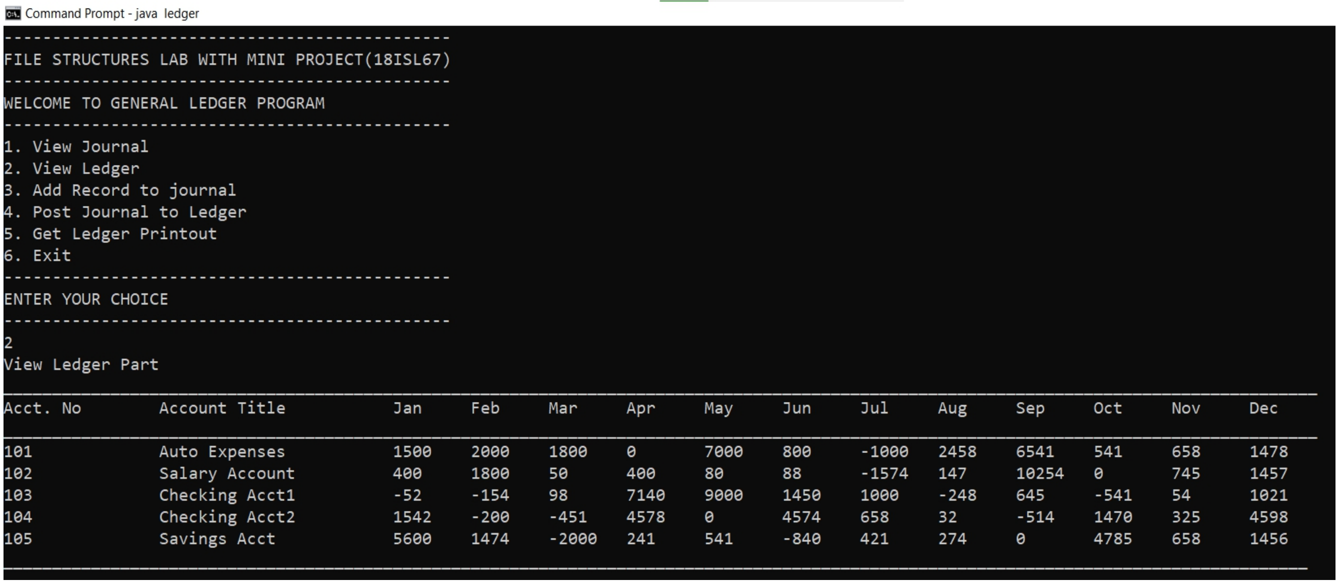
Fig 6.1 : Menu for the General Ledger Program



Command Prompt - java ledger

```
FILE STRUCTURES LAB WITH MINI PROJECT(18ISL67)
---------------------------------------------
WELCOME TO GENERAL LEDGER PROGRAM
---------------------------------------------
1. View Journal
2. View Ledger
3. Add Record to journal
4. Post Journal to Ledger
5. Get Ledger Printout
6. Exit
---------------------------------------------
ENTER YOUR CHOICE
---------------------------------------------
1
View Journal Part
______________________________________________________________________________________
Acct. No        Check. No       Date            Description             Credit/Debit
______________________________________________________________________________________
101             1231            12/08/21        Bus Fare                -200
102             1242            12/02/21        Salary Credit           27000
102             1247            19/03/21        Auto Expense            -1200
103             1251            08/04/21        Checking Acct           4000
104             1235            09/07/21        Monthly expense         -4000
104             1253            16/04/21        Rent for April          -10000
104             1288            21/02/21        Office Expense          -500
______________________________________________________________________________________
```

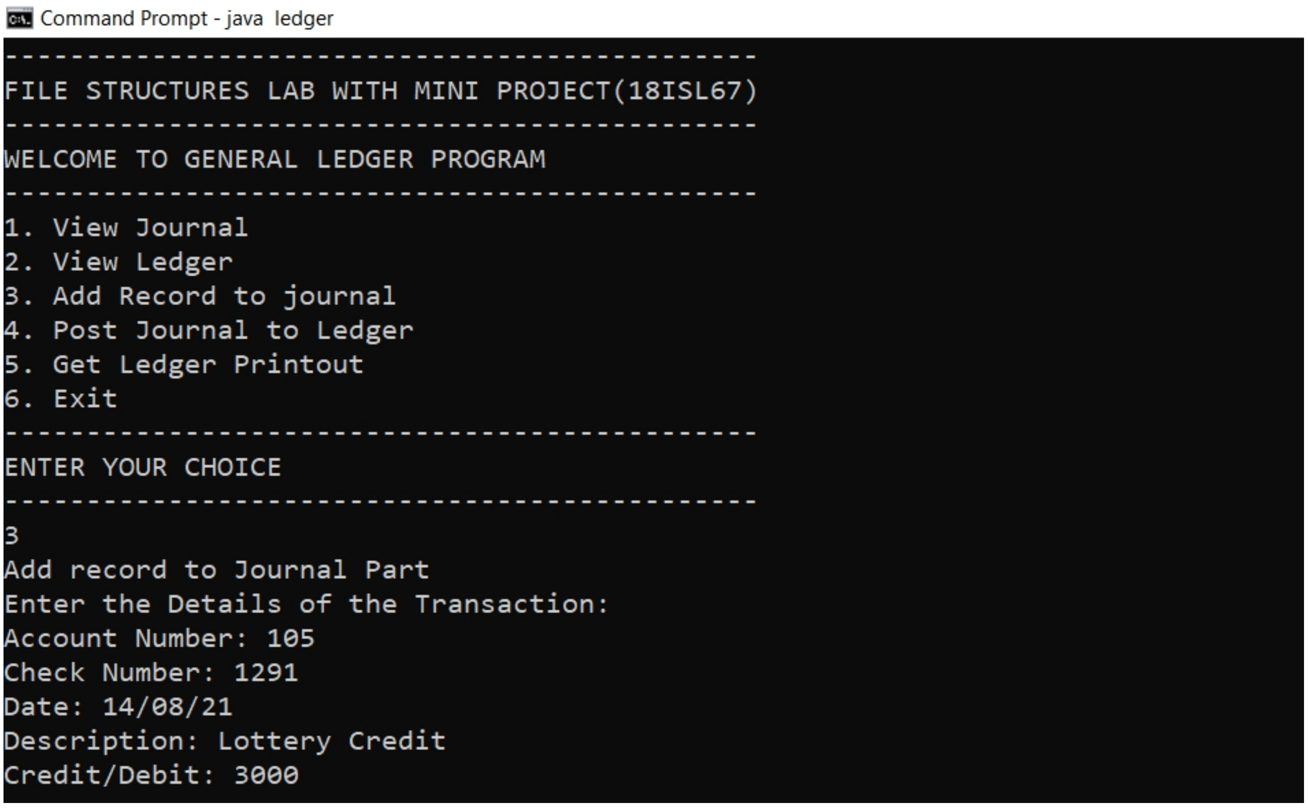
Fig 6.2 : View Journal Option



Command Prompt - java ledger

```
----------------------------------------------
FILE STRUCTURES LAB WITH MINI PROJECT(18ISL67)
----------------------------------------------
WELCOME TO GENERAL LEDGER PROGRAM
----------------------------------------------
1. View Journal
2. View Ledger
3. Add Record to journal
4. Post Journal to Ledger
5. Get Ledger Printout
6. Exit
----------------------------------------------
ENTER YOUR CHOICE
----------------------------------------------
2
View Ledger Part
________________________________________________________________________________________________________________________________________
Acct. No        Account Title           Jan     Feb     Mar     Apr     May     Jun     Jul     Aug     Sep     Oct     Nov     Dec
________________________________________________________________________________________________________________________________________
101             Auto Expenses           1500    2000    1800    0       7000    800     -1000   2458    6541    541     658     1478
102             Salary Account          400     1800    50      400     80      88      -1574   147     10254   0       745     1457
103             Checking Acct1          -52     -154    98      7140    9000    1450    1000    -248    645     -541    54      1021
104             Checking Acct2          1542    -200    -451    4578    0       4574    658     32      -514    1470    325     4598
105             Savings Acct            5600    1474    -2000   241     541     -840    421     274     0       4785    658     1456
________________________________________________________________________________________________________________________________________
```

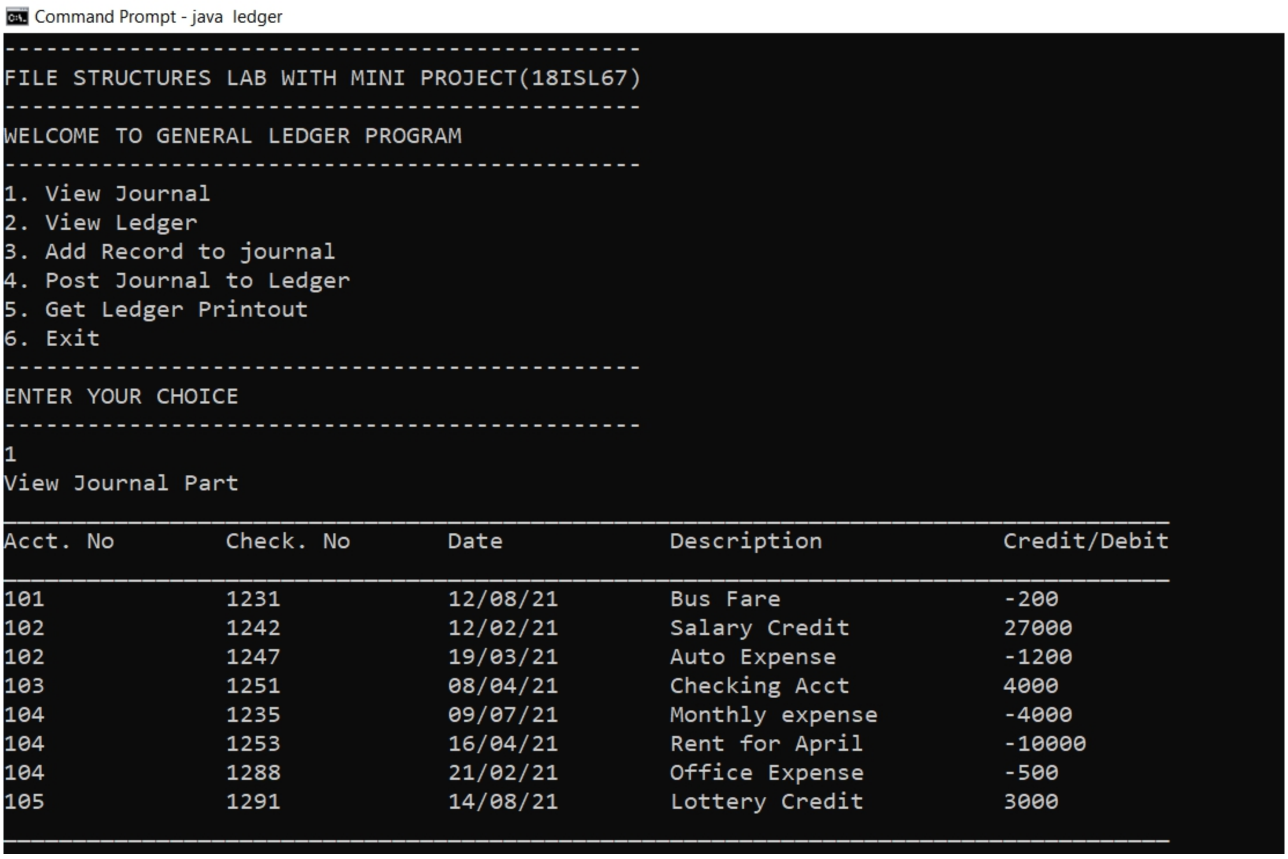
Fig 6.3 : View Ledger Option



Command Prompt - java ledger

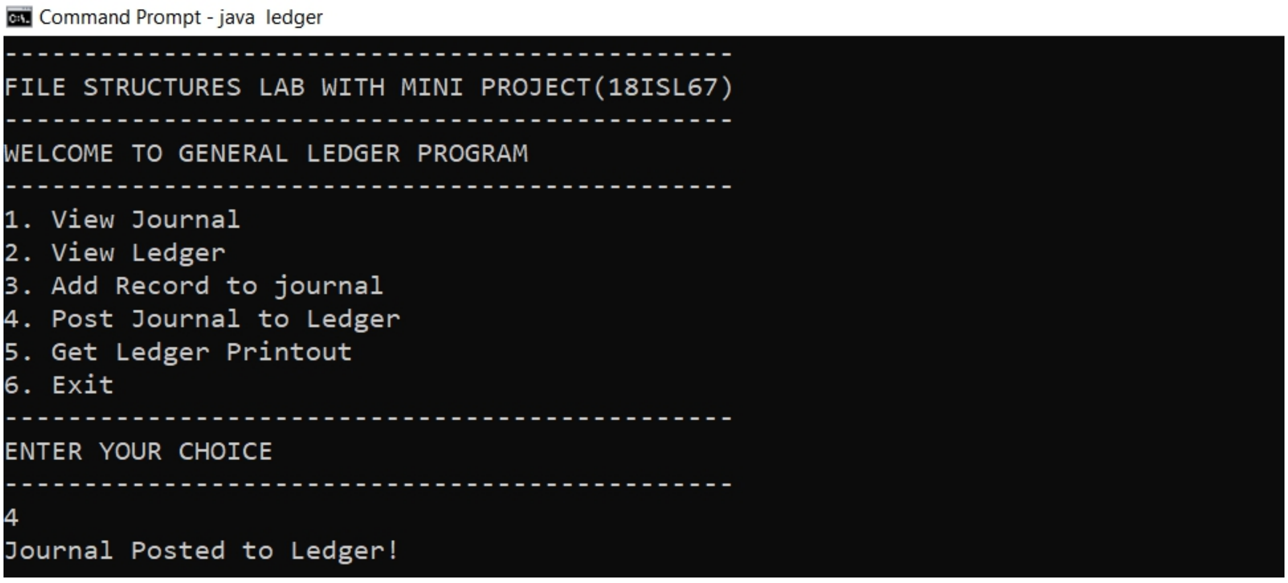
```
----------------------------------------------
FILE STRUCTURES LAB WITH MINI PROJECT(18ISL67)
----------------------------------------------
WELCOME TO GENERAL LEDGER PROGRAM
----------------------------------------------
1. View Journal
2. View Ledger
3. Add Record to journal
4. Post Journal to Ledger
5. Get Ledger Printout
6. Exit
----------------------------------------------
ENTER YOUR CHOICE
----------------------------------------------
3
Add record to Journal Part
Enter the Details of the Transaction:
Account Number: 105
Check Number: 1291
Date: 14/08/21
Description: Lottery Credit
Credit/Debit: 3000
```

Fig 6.4 : Add Record to Journal Option



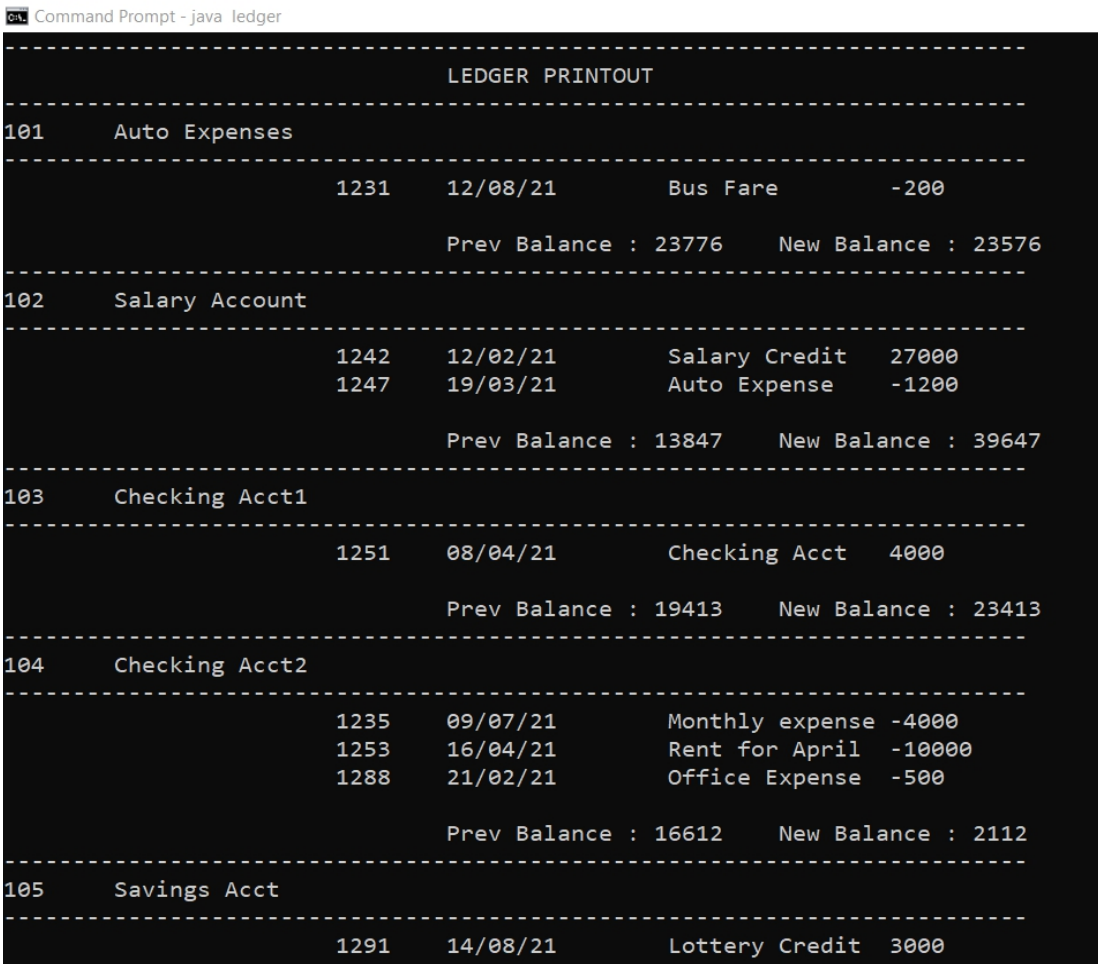
```
Command Prompt - java  ledger
----------------------------------------------
FILE STRUCTURES LAB WITH MINI PROJECT(18ISL67)
----------------------------------------------
WELCOME TO GENERAL LEDGER PROGRAM
----------------------------------------------
1. View Journal
2. View Ledger
3. Add Record to journal
4. Post Journal to Ledger
5. Get Ledger Printout
6. Exit
----------------------------------------------
ENTER YOUR CHOICE
----------------------------------------------
1
View Journal Part
_____________________________________________________________________________________
Acct. No        Check. No       Date            Description             Credit/Debit
_____________________________________________________________________________________
101             1231            12/08/21        Bus Fare                -200
102             1242            12/02/21        Salary Credit           27000
102             1247            19/03/21        Auto Expense            -1200
103             1251            08/04/21        Checking Acct           4000
104             1235            09/07/21        Monthly expense         -4000
104             1253            16/04/21        Rent for April          -10000
104             1288            21/02/21        Office Expense          -500
105             1291            14/08/21        Lottery Credit          3000
_____________________________________________________________________________________
```

Fig 6.5 : Updated Journal once new record is added



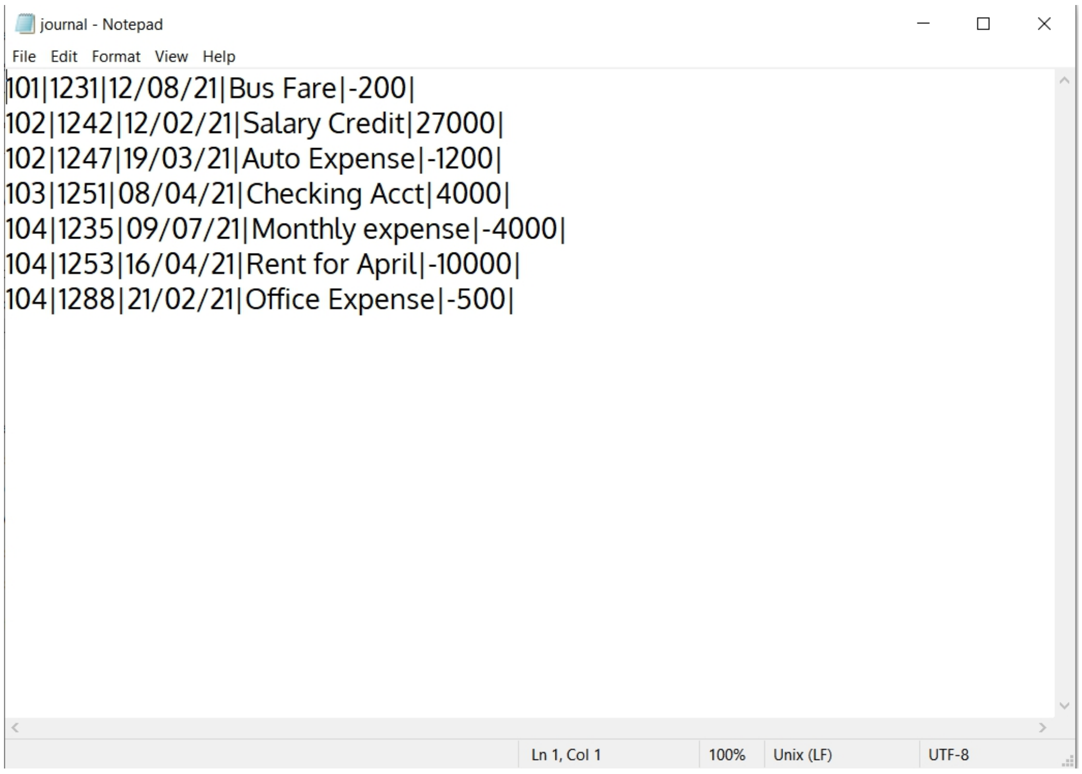
```
Command Prompt - java  ledger
----------------------------------------------
FILE STRUCTURES LAB WITH MINI PROJECT(18ISL67)
----------------------------------------------
WELCOME TO GENERAL LEDGER PROGRAM
----------------------------------------------
1. View Journal
2. View Ledger
3. Add Record to journal
4. Post Journal to Ledger
5. Get Ledger Printout
6. Exit
----------------------------------------------
ENTER YOUR CHOICE
----------------------------------------------
4
Journal Posted to Ledger!
```

Fig 6.6 : Post Journal to Ledger Option



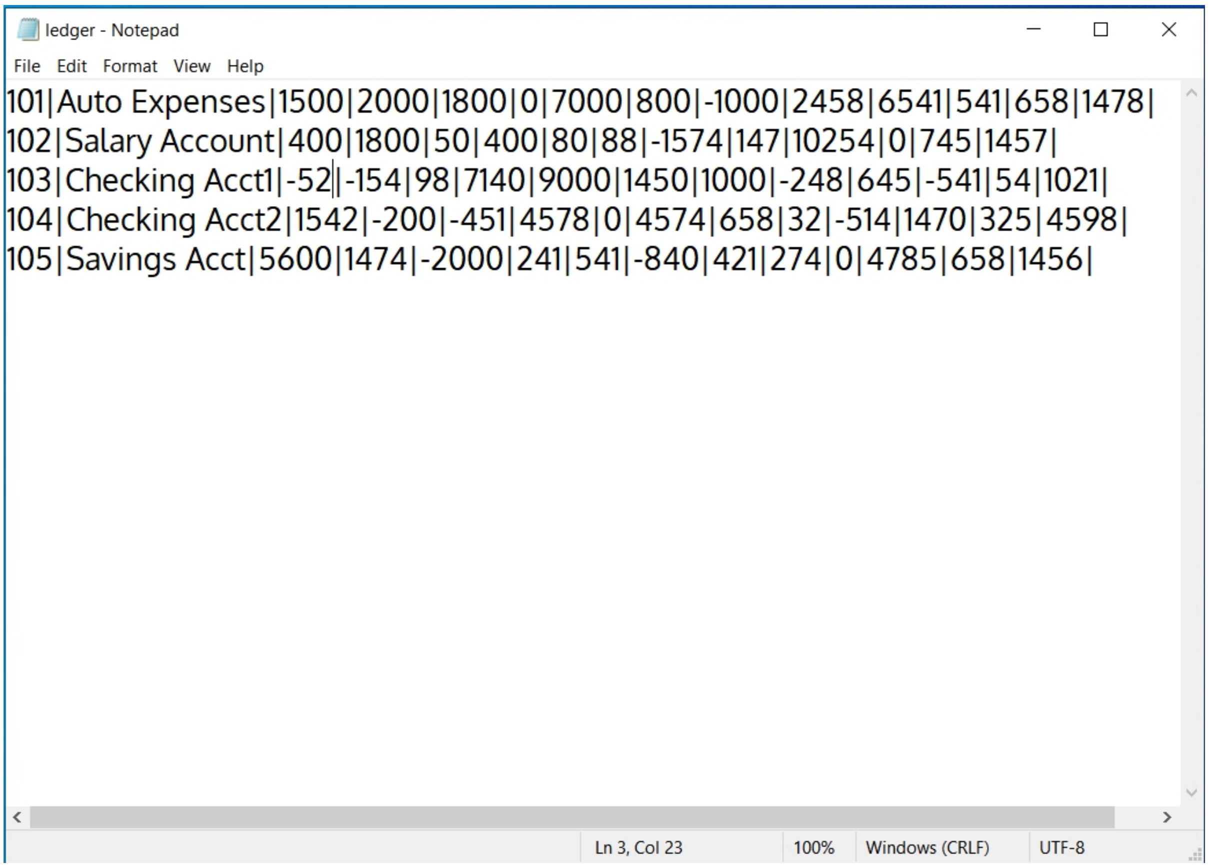
```
-----------------------------------------------------------------------
                                LEDGER PRINTOUT
-----------------------------------------------------------------------
101     Auto Expenses
-----------------------------------------------------------------------
                        1231    12/08/21        Bus Fare        -200

                                Prev Balance : 23776    New Balance : 23576
-----------------------------------------------------------------------
102     Salary Account
-----------------------------------------------------------------------
                        1242    12/02/21        Salary Credit   27000
                        1247    19/03/21        Auto Expense    -1200

                                Prev Balance : 13847    New Balance : 39647
-----------------------------------------------------------------------
103     Checking Acct1
-----------------------------------------------------------------------
                        1251    08/04/21        Checking Acct   4000

                                Prev Balance : 19413    New Balance : 23413
-----------------------------------------------------------------------
104     Checking Acct2
-----------------------------------------------------------------------
                        1235    09/07/21        Monthly expense -4000
                        1253    16/04/21        Rent for April  -10000
                        1288    21/02/21        Office Expense  -500

                                Prev Balance : 16612    New Balance : 2112
-----------------------------------------------------------------------
105     Savings Acct
-----------------------------------------------------------------------
                        1291    14/08/21        Lottery Credit  3000
```

Fig 6.7 : Ledger Printout Option



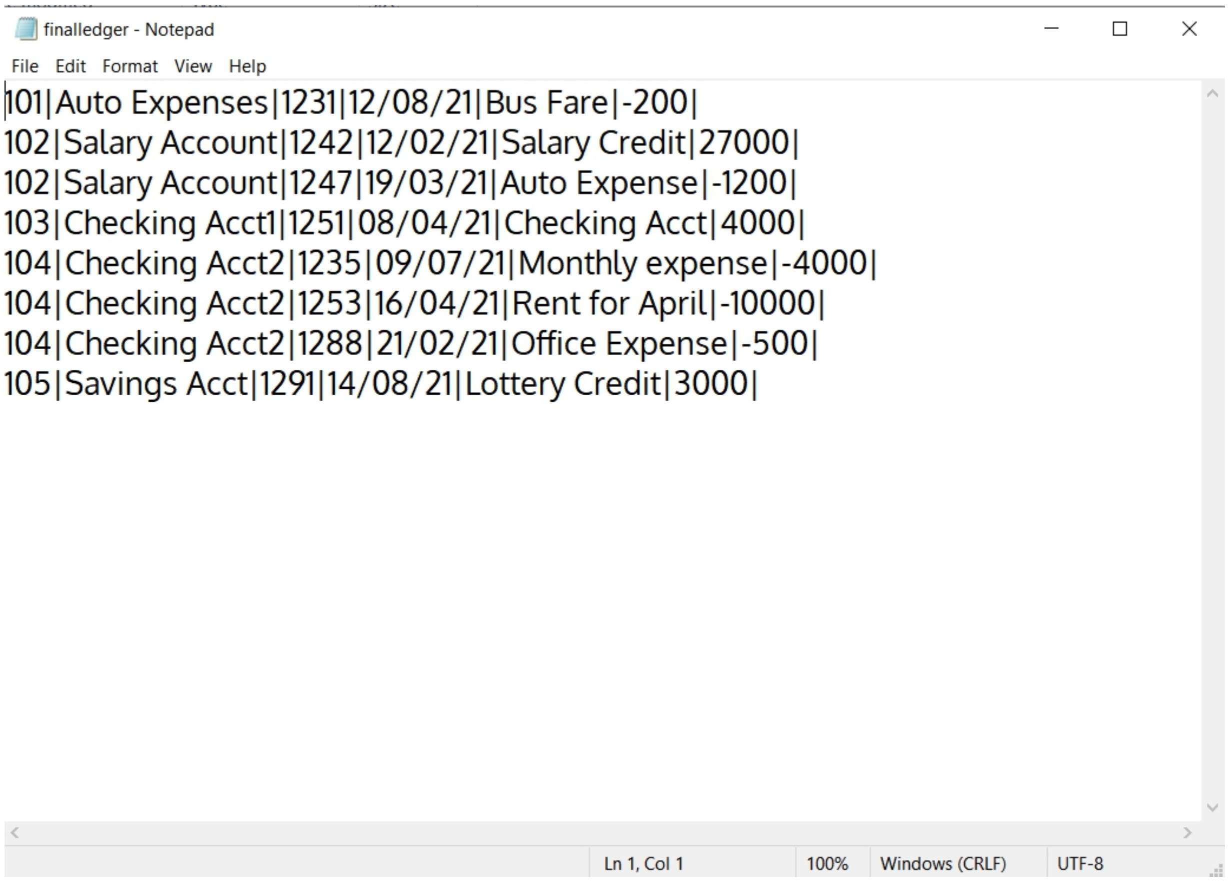
```
101|1231|12/08/21|Bus Fare|-200|
102|1242|12/02/21|Salary Credit|27000|
102|1247|19/03/21|Auto Expense|-1200|
103|1251|08/04/21|Checking Acct|4000|
104|1235|09/07/21|Monthly expense|-4000|
104|1253|16/04/21|Rent for April|-10000|
104|1288|21/02/21|Office Expense|-500|
```

Fig 6.8 : Contents of journal.txt



```
101|Auto Expenses|1500|2000|1800|0|7000|800|-1000|2458|6541|541|658|1478|
102|Salary Account|400|1800|50|400|80|88|-1574|147|10254|0|745|1457|
103|Checking Acct1|-52|-154|98|7140|9000|1450|1000|-248|645|-541|54|1021|
104|Checking Acct2|1542|-200|-451|4578|0|4574|658|32|-514|1470|325|4598|
105|Savings Acct|5600|1474|-2000|241|541|-840|421|274|0|4785|658|1456|
```

Fig 6.9 : Contents of ledger.txt



```
101|Auto Expenses|1231|12/08/21|Bus Fare|-200|
102|Salary Account|1242|12/02/21|Salary Credit|27000|
102|Salary Account|1247|19/03/21|Auto Expense|-1200|
103|Checking Acct1|1251|08/04/21|Checking Acct|4000|
104|Checking Acct2|1235|09/07/21|Monthly expense|-4000|
104|Checking Acct2|1253|16/04/21|Rent for April|-10000|
104|Checking Acct2|1288|21/02/21|Office Expense|-500|
105|Savings Acct|1291|14/08/21|Lottery Credit|3000|
```

Fig 6.10 : Contents of finalledger.txt

CHAPTER - 7

CONCLUSION

We have used consequential processing in our project as it can be applied to large files and since the ledger file is a large file this technique is preferable. This technique is preferred when operating with two or more sequential lists. As this problem includes two files namely, the ledger file and the journal file, consequential processing is used. Another advantage of using this technique is that it requires less seeks as the files are sequential. The project can be replaced with the traditional ledger to bring digitalization and make account handling easier and faster.

CHAPTER - 8

REFERENCES

1. Michael J. Folk, Bill Zoellick, Greg Riccardi: File Structures-An Object Oriented Approach with C++, 3rd Edition, Pearson Education, 1998.

2. https://www.site.uottawa.ca/~lucia/courses/2131-01/notes/lect14.pdf