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CSC248: FUNDAMENTAL OF DATA STRUCTURES

REPORT OF GAMING SERVICE GAMEVERSE

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1. PROJECT INTRODUCTION

Entertainment Industry:

Gaming industry has become a business trend nowadays. Business owner of GameVerse which is a gaming center is Mr. 'Irfan. He plans to organize his customer information and develop an application for it to ensure that his company workflow became more efficient and time saving.

He has a list of customers and gaming platforms to be recorded. The gaming platforms can be rented in two categories (G - Gaming PC and C - Consoles). He recorded his gaming platform with the following details which are the gaming platform ID and category. Next, he will record his customer's ID name, phone number, duration spent on the gaming platform, and payment detail (amount of payment and payment type). Each payment transaction will be recorded and the status of gaming platform will be updated whether can be accessed or cannot be accessed. After the data has been collected and stored at the end of the month, he needs to process the information and display it in a form of a report automatically.

After the discussion, we analyze his requirement, and these are the processes we propose to Mr. 'Irfan to be applied in the application.

2. PROJECT OBJECTIVES

The application will be able to:

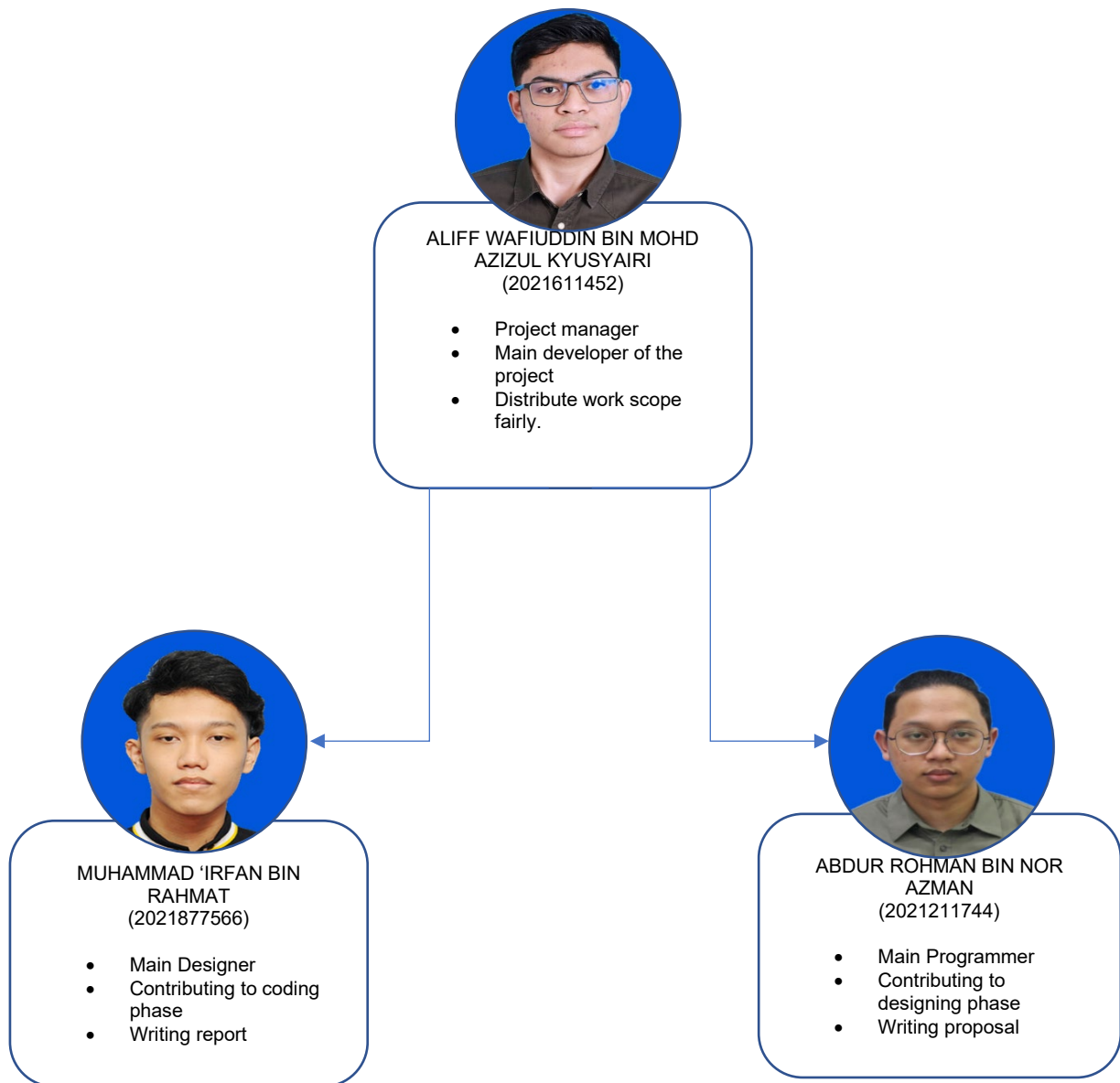
- 1) Store and display the customer's information into application.
- 2) Search and display the customer's details that has been asked by the user to check the current date booked.
- 3) Update the customer's current booking date to the date that customer wanted.
- 4) Split and display the record for customers who choose to play games on PC gaming platform and consoles platform.
- 5) Calculate and display the total of payment for each category which is PC gaming and consoles which the payment method using cash.
- 6) Remove the record of the customer that does not subscribe the GameVerse monthly subscription and store the data into new LinkedList called gvNonSubscribe and new Queue called gvNonSubscribe.

3. OBJECTS WITH ATTRIBUTES

This are all the objects with attributes and the methods that we applied to complete this project.

Object Propose	Customer
Attributes	customer's ID, customer's name, payment amount, payment type, platform type, phone number, duration booked, package, date booked, payment status
Methods	accessor method, mutator method process method and display method.

4. GROUP MEMBERS ORGANIZATION



5. CODING

GAMEVERSE CLASS

```
public class GameVerse
{
    private String custID, custName, paymentType, platformType,
    platformID, phoneNum, date, subscription, paymentStatus;
    private int duration;

    //accessor
    public GameVerse(String custID, String custName, String
    paymentType, String platformType, String platformID, String
    phoneNum, int duration, String date, String subscription, String
    paymentStatus)
    {
        this.custID = custID;
        this.custName = custName;
        this.paymentType = paymentType;
        this.platformType = platformType;
        this.platformID = platformID;
        this.phoneNum = phoneNum;
        this.duration = duration;
        this.date = date;
        this.subscription = subscription;
        this.paymentStatus = paymentStatus;
    }
    //mutator
    public void setCustomer(String cID, String cName, String
    payment, String pType, String pID, String phone, int du, String
    dat, String sub, String pStatus)
    {
        custID = cID;
        custName = cName;
        paymentType = payment;
        platformType = pType;
        platformID = pID;
        phoneNum = phone;
        duration = du;
        date = dat;
        subscription = sub;
        paymentStatus = pStatus;
    }

    public void setDate(String dates)
    {
        date = dates;
    }

    //accessor
    public String getCustomerID() {return custID;}

    public String getCustomerName() {return custName;}

    public String getPaymentType() {return paymentType;}

    public String getPlatformType() {return platformType;}
```

```

public String getPlatformID() {return platformID;}

public String getPhoneNum() {return phoneNum;}

public int getDuration() {return duration;}

public String getDate() {return date;}

public String getSubscription() {return subscription;}

public String getPaymentStatus(){return paymentStatus;}

public double calculatePrice()
{
    double pricePC = 5;
    double priceCons = 7.5;
    double totalPrice = 0.0;

    if (getPlatformType().equalsIgnoreCase("PC Gaming"))
    {
        totalPrice = pricePC * duration;
    }
    else if (getPlatformType().equalsIgnoreCase("Console"))
    {
        totalPrice = priceCons * duration;
    }

    return totalPrice;
}

public String toString()
{
    return String.format("%-14s%-30s%-20s%-15s%-15s%-19s%-10s%-
15s%-15s%-15s",
                        custID, custName, paymentType,
platformType, platformID, phoneNum, duration, date, subscription,
paymentStatus);
}
}

```

GVDATA.TXT

GV21569;Siti Fatimah binti Jamil;Cash;PC Gaming;PCG076;013-5264875;2;02-06-22;Yes;Done
GV26189;Ibrahim Omar bin Samad;Online Banking;Console;CON011;014-8634826;3;04-06-22;Yes;Done
GV59234;Muhhamad Azmi bin Aziz;Online Banking;Console;CON036;016-5264823;1;07-06-22;No;Done
GV15268;Abdur Rohman bin Mahmood;Cash;PC Gaming;PCG123;013-2925846;5;21-06-22;No;Pending
GV26847;Muhammad Hassan bin Nasir;Cash;PC Gaming;PCG026;014-8889654;5;09-06-22;No;Done
GV15632;Alif Wafi bin Najib;Online Banking;Console;CON156;018-1563248;10;30-06-22;Yes;Done
GV15269;Idris Khan bin Shafiq Khan;Cash;PC Gaming;PCG002;019-1235849;2;13-06-22;Yes;Done
GV15632;Maria Casey;Cash;PC Gaming;PCG016;014-9457777;6;18-06-22;No;Pending
GV78561;Nur Adlina binti Ahmad;Online Banking;Console;CON001;014-2925786;9;29-06-22;No;Done
GV88520;Nik Amir;Cash;Console;CON029;014-1593574;5;25-06-22;Yes;Done
GV87452;Aiman bin Zaid;Cash;Console;CON562;017-9826564;2;13-09-22;No;Done
GV78456;Hamidi bin Anwar;Online Banking;PC Gaming;PCG219;013-8795612;3;01-06-22;Yes;Pending
GV32354;Karim bin Rashid;Cash;PC Gaming;PCG212;015-5123542;5;22-06-22;Yes;Done
GV32354;Muhammad bin Affan;Cash;PC Gaming;PCG112;019-9985221;6;05-06-22;No;Done
GV98796;Hilamn bin Hilmi;Online Banking;Console;CON741;011-45662154;1;01-07-22;No;Done;Done
GV87323;Farah binti Farid;Cash;Console;CON875;011-79845211;2;29-06-22;No;Pending
GV23114;Ameer bin Amiruddin;Cash;PC Gaming;PCG130;012-1245887;4;31-05-22;Yes;Pending
GV32432;Hayati binti Hamid;Cash;Console;CON212;016-8791213;4;15-06-22;Yes;Done
GV56543;Nabil bin Rahim;Online Banking;PC Gaming;PCG568;018-5461312;3;23-07-22;Yes;Done
GV23445;Levi Akmal bin Aril;Online Banking;PC Gaming;PCG243;015-8413546;2;01-07-22;No;Pending
GV12333;Salleh bin Mohamad;Cash;Console;CON335;012-5464789;7;25-06-22;Yes;Done
GV68756;Omar bin Lukman;Online Banking;PC Gaming;PCG032;010-2135464;1;29-05-22;Yes;Done
GV24546;Hasdi bin Daud;Cash;Console;CON243;017-4654312;5;14-07-22;Yes;Done
GV87867;Norman bin Naim;Online Banking;PC Gaming;PCG124;018-5616878;3;05-06-22;No;Done
GV87686;Salina binti Sulaiman;Online Banking;PC Gaming;PCG321;010-8462115;2;22-07-22;Yes;Done

- **LINKEDLIST DATA STRUCTURE**

EMPTY LIST EXCEPTION CLASS

```
public class EmptyListException extends RuntimeException
{
    public EmptyListException()
    {
        super("The list is empty");
    }
}
```

LINKED LIST CLASS

```
public class LinkedList
{
    private Node first;
    private Node last;
    private Node current; //use to traverse the list

    //constructor: constructor an empty List with s as the name
    public LinkedList()
    {
        first = last = current = null;
    }

    //insert an Object at the front of the List
    //If List is empty, firstNode and lastNode will refer to the
same
    //object. Otherwise, firstNode refers to new node
    public void insertAtFront(GameVerse gv)
    {
        if(isEmpty())
            first = last = new Node(gv);
        else
            first = new Node(gv, first);
    }

    //insert an Object at the end of the List
    //If List is empty, firstNode and lastNode will refer to the
//same object.
    //Otherwise, lastNode's next instance variable refers to new
node
    public void insertAtBack(GameVerse gv)
    {
        if(isEmpty())
            first = last = new Node(gv);
        else
            last = last.next = new Node(gv);
    }

    //remove the first node from the List
    public GameVerse removeFromFront() throws EmptyListException
    {
        GameVerse removeItem = null;
        if(isEmpty())
```

```

        throw new EmptyListException();
removeItem = first.data; //retrieve the data

//reset the firstNode and lastNode references
if(first.equals(last))
    first = last = null;
else
    first= first.next;
return removeItem;
}

//remove the last node from the list

public GameVerse removeFromBack()throws EmptyListException
{
    GameVerse removeItem = null;
    if(isEmpty())
        throw new EmptyListException();
    removeItem = last.data; //retrieve the data

    //reset the firstNode and lastNode references
    if(first.equals(last))
        first = last = null;
    else
    {
        current = first;

        while(current.next != last)
        {
            current = current.next;
        }

        last = current;
        current.next = null;
    }

    return removeItem;
}

public boolean isEmpty()
{
    return first == null;
}

//return first object

public GameVerse getFirst()
{
    if(isEmpty())
    {
        return null;
    }
    else
    {
        current = first;
        return current.data;
    }
}

```

```

        }
    }

    //return next object

    public GameVerse getNext()
    {
        if(current != last)
        {
            current = current.next;
            return current.data;
        }
        else
        {
            return null;
        }
    }
}

```

NODE CLASS

```

public class Node
{
    //package access data so class List can access it directly
    GameVerse data;
    Node next;

    //Constructor: create a ListNode that refer to Object o
    Node(GameVerse gv)
    {
        this(gv, null);
    }

    //Constructor: create a ListNode that refers to Object o and
    //to the next ListNode in the List
    Node(GameVerse gv, Node nextNode)
    {
        data = gv;
        next = nextNode;
    }

    //return a reference to the Object in this node
    Object getData()
    {
        return data;
    }

    //return the next node
    Node getNext()
    {
        return next;
    }
}

```

GAMEVERSE MAIN CLASS

```
import java.util.StringTokenizer;
import java.io.BufferedReader;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.IOException;
import java.util.Scanner;
import java.text.DecimalFormat;

public class GameVerseMain
{
    public static void main(String [] args)
    {
        try
        {
            Scanner scan = new Scanner(System.in);

            DecimalFormat df = new DecimalFormat("0.00");
            //DecimalFormat dt = new DecimalFormat("0.00");

            FileReader fr = new FileReader("gvData.txt");
            BufferedReader br = new BufferedReader(fr);

            LinkedList gameVerseList = new LinkedList();

            String cusID, cusName, paymentType, platformType,
platformID, numPhone, dateBook, sub, pStatus;
            int duration;
            String inData = null;

            while((inData = br.readLine()) != null)
            {
                StringTokenizer st = new StringTokenizer(inData,
";");

                cusID = st.nextToken();
                cusName = st.nextToken();
                paymentType = st.nextToken();
                platformType = st.nextToken();
                platformID = st.nextToken();
                numPhone = st.nextToken();
                duration = Integer.parseInt(st.nextToken());
                dateBook = st.nextToken();
                sub = st.nextToken();
                pStatus = st.nextToken();

                GameVerse game = new GameVerse(cusID, cusName,
paymentType, platformType, platformID, numPhone, duration, dateBook,
sub, pStatus);
                gameVerseList.insertAtFront(game);
            }
            br.close();
        }
    }
}
```

```

        GameVerse temp = null;

        temp = gameVerseList.getFirst();

System.out.println("=====
=====
=====");
        System.out.println("
GAMEVERSE APPLICATION SYSTEM
");

System.out.println("=====
=====
=====");
        System.out.println(String.format("%-18s%-26s%-18s%-15s%-
18s%-15s%-15s%-10s%-15S%-10S",
                                           "CUSTOMER ID",
"CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM TYPE", "PLATFORM ID", "NO
PHONE", "DURATION", "DATE", "SUBSCRIPTION", "PAYMENT STATUS"));

System.out.println("=====
=====
=====");
        while(temp != null)
        {
            System.out.println(temp.toString());
            temp = gameVerseList.getNext();
        }

System.out.println("=====
=====
=====");

//2) SEARCH AND DISPLAY THE CUSTOMER'S DETAIL
System.out.println(" ");
System.out.print("Please enter customer's ID that you
want to change the date >> ");
String cID = scan.next();

GameVerse obj = null;
boolean found = false;

obj = gameVerseList.getFirst();
while(obj != null && !found)
{
    if(obj.getCustomerID().equalsIgnoreCase(cID))
    {
        found = true;
        System.out.println("\n");
    }

System.out.println("\n=====

```

```

=====
=====");
        System.out.println("
CUSTOMER'S DETAILS
");

System.out.println("=====
=====
=====");
        System.out.println(String.format("%-18s%-26s%-
18s%-15s%-18s%-15s%-15s%-10s%-15S%-10S",
        "CUSTOMER ID", "CUSTOMER NAME", "PAYMENT TYPE",
"PLATFORM TYPE", "PLATFORM ID", "NO PHONE", "DURATION", "DATE",
"SUBSCRIPTION", "PAYMENT STATUS"));

System.out.println("=====
=====
=====");
        System.out.println(obj.toString());

System.out.println("=====
=====
=====");
    }
    else
        obj = gameVerseList.getNext();
}

//3)Update user's choice of date
if(found)
{
    System.out.print("\nWhen do you want to change the
date? >>");
    String nDate = scan.next();
    obj.setDate(nDate);
    gameVerseList.insertAtBack(obj);
    gameVerseList.removeFromBack();
}
else
    System.out.println("The id you search are not
available in the database");

    System.out.println("\n");
    System.out.println(" ");

System.out.println("*****
*****UPDATED
LIST*****
*****");

System.out.println("=====
=====
=====");
        System.out.println("
GAMEVERSE APPLICATION SYSTEM
");

```

```

System.out.println("=====
=====
=====");
        System.out.println(String.format("%-18s%-26s%-18s%-15s%-
18s%-15s%-15s%-10s%-15S%-10S",
                                           "CUSTOMER ID",
"CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM TYPE", "PLATFORM ID", "NO
PHONE", "DURATION", "DATE", "SUBSCRIPTION", "PAYMENT STATUS"));

System.out.println("=====
=====
=====");
        obj = gameVerseList.getFirst();
        while(obj != null)
        {
            System.out.println(obj.toString());
            obj = gameVerseList.getNext();
        }

System.out.println("=====
=====
=====");

        //4) SPLIT AND DISPLAY
        LinkedList gvPCGaming = new LinkedList();
        LinkedList gvConsole = new LinkedList();

        temp = gameVerseList.getFirst();

        while(temp != null)
        {
            if(temp.getPlatformType().equalsIgnoreCase("PC
Gaming"))
            {
                gvPCGaming.insertAtFront(temp);
            }
            else
            {
                gvConsole.insertAtFront(temp);
            }

            temp = gameVerseList.getNext();
        }

        System.out.println("\n");

System.out.println("=====
=====
=====");
        System.out.println("
GAMEVERSE APPLICATION SYSTEM(CUSTOMER WHO CHOOSE PC GAMING)
");

System.out.println("=====
=====
=====");

```

```

=====
=====");
        System.out.println(String.format("%-15s%-20s%-15s%-15s%-15s%-15s%-15s%-15s",
                                           "CUSTOMER ID",
"CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM TYPE", "PLATFORM ID", "NO
PHONE", "DURATION", "DATE", "SUBSCRIPTION"));

        temp = gvPCGaming.getFirst();

        while(temp != null)
        {
            System.out.println(temp.toString());
            temp = gvPCGaming.getNext();
        }

System.out.println("=====
=====
=====");

        temp = gvConsole.getFirst();

        System.out.println("\n");

System.out.println("=====
=====
=====");

        System.out.println("
GAMEVERSE APPLICATION SYSTEM(CUSTOMER WHO CHOOSE CONSOLE)
");

System.out.println("=====
=====
=====");

        System.out.println(String.format("%-15s%-20s%-15s%-15s%-15s%-15s",
                                           "CUSTOMER ID",
"CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM TYPE", "PLATFORM ID", "NO
PHONE", "DURATION", "DATE", "SUBSCRIPTION"));

        while(temp != null)
        {
            System.out.println(temp.toString());
            temp = gvConsole.getNext();
        }
        // 5) Calculate and display the total of payment for
each category which is PC gaming and consoles which the payment
method using cash.
        double totPaymentPC = 0.0, totPaymentCons = 0.0;
        temp = gameVerseList.getFirst();
        while (temp != null)
        {
            if (temp.getPaymentType().equalsIgnoreCase("Cash")
&& temp.getPlatformType().equalsIgnoreCase("PC Gaming"))
            {
                totPaymentPC += temp.calculatePrice();
            }
        }
    }
}

```



```

        }
        else if
(temp.getPaymentType().equalsIgnoreCase("Cash") &&
temp.getPlatformType().equalsIgnoreCase("Console"))
        {
            totPaymentCons += temp.calculatePrice();
        }
        temp = gameVerseList.getNext();
    }

System.out.println("=====
=====
=====");

        System.out.println("\n");

System.out.println("\n=====
=====");
        System.out.println("                                TOTAL PAYMENT FOR
EACH PLATFORM                                ");

System.out.println("=====
=====");
        System.out.println("TOTAL PAYMENT FOR PC GAMING: RM " +
df.format(totPaymentPC));
        System.out.println("TOTAL PAYMENT FOR CONSOLES: RM " +
df.format(totPaymentCons));

System.out.println("=====
=====");

        // 6) Remove the record of the customer that does not
        subscribe the GameVerse monthly subscription and store the data into
        new LinkedList called gvNonSubscribe.
        LinkedList gvNonSubscribe = new LinkedList();
        temp = gameVerseList.getFirst();
        while(!gameVerseList.isEmpty())
        {
            temp = gameVerseList.removeFromBack();

            if(temp.getSubscription().equalsIgnoreCase("No"))
            {
                gvNonSubscribe.insertAtBack(temp);
            }
        }

        System.out.println("\n");

System.out.println("\n=====
=====
=====");
        System.out.println("
GAMEVERSE APPLICATION SYSTEM(NON-SUBSCRIBER)
");

```

```

System.out.println("=====
=====
=====");
        System.out.println(String.format("%-18s%-26s%-18s%-15s%-
18s%-15s%-15s%-10s%-15S%-10S",
                                           "CUSTOMER ID",
"CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM TYPE", "PLATFORM ID", "NO
PHONE", "DURATION", "DATE", "SUBSCRIPTION", "PAYMENT STATUS"));

System.out.println("=====
=====
=====");
        temp = gvNonSubscribe.getFirst();
        while (temp != null)
        {
            System.out.println(temp.toString());
            temp = gvNonSubscribe.getNext();
        }

System.out.println("=====
=====
=====");

        scan.close();
    }
    catch(FileNotFoundException fnfe)
    {
        System.out.println(fnfe.getMessage());
    }
    catch(IOException io)
    {
        System.out.println(io.getMessage());
    }
    catch(Exception e)
    {
        System.out.println(e.getMessage());
    }
}
}

```

- **QUEUE DATA STRUCTURE**

QUEUE CLASS

```
import java.util.*;
//the Queue class with a Queue field

public class Queue
{
    protected LinkedList list;

    //queue object has been initialized
    public Queue()
    {
        list = new LinkedList();
    } //default constructor

    //check whether queue object has no element or otherwise
    public boolean isEmpty()
    {
        return list.isEmpty();
    } //method isEmpty

    //determine the no of elements in the queue object
    public int size()
    {
        return list.size();
    } // method size

    //insert element at the back of the queue object
    public void enqueue(Object element)
    {
        list.addLast(element);
    } //method enqueue

    //remove the front element from the queue object
    public Object dequeue()
    {
        return list.removeFirst();
    } //method dequeue

    //the element at the front of the queue object has been returned
    public Object front()
    {
        return list.getFirst();
    } //method front

    //the element at the end of the queue object has been returned
    public Object rear()
    {
        return list.getLast();
    } //method rear
} // Queue class
```

GAMEVERSE MAIN CLASS

```
import java.util.StringTokenizer;
import java.io.BufferedReader;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.IOException;
import java.util.Scanner;
import java.text.DecimalFormat;

public class GameVerseMain
{
    public static void main(String [] args)
    {
        try
        {
            Scanner scan = new Scanner(System.in);

            DecimalFormat df = new DecimalFormat("0.00");
            DecimalFormat dt = new DecimalFormat("0.00");

            FileReader fr = new FileReader("gvData.txt");
            BufferedReader br = new BufferedReader(fr);

            Queue gameVerseQueue = new Queue();

            String cusID, cusName, paymentType, platformType,
platformID, numPhone, dateBook, sub, pStatus;
            int duration;
            String inData = null;

            //1) STORE AND DISPLAY
            while((inData = br.readLine()) != null)
            {
                StringTokenizer st = new StringTokenizer(inData,
";");

                cusID = st.nextToken();
                cusName = st.nextToken();
                paymentType = st.nextToken();
                platformType = st.nextToken();
                platformID = st.nextToken();
                numPhone = st.nextToken();
                duration = Integer.parseInt(st.nextToken());
                dateBook = st.nextToken();
                sub = st.nextToken();
                pStatus = st.nextToken();

                GameVerse game = new GameVerse(cusID, cusName,
paymentType, platformType, platformID, numPhone, duration, dateBook,
sub, pStatus);
                gameVerseQueue.enqueue(game);
            }
            br.close();
        }
    }
}
```

```

        GameVerse temp = null;

        Queue tempQ = new Queue();

        //DISPLAY ALL DATA
        System.out.println("\n");

System.out.println("=====
=====
=====");
        System.out.println("
GAMEVERSE APPLICATION SYSTEM
");

System.out.println("=====
=====
=====");
        System.out.println(String.format("%-18s%-26s%-18s%-15s%-
18s%-15s%-15s%-10s%-15S%-10S",
                                "CUSTOMER ID",
"CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM TYPE", "PLATFORM ID", "NO
PHONE", "DURATION", "DATE", "SUBSCRIPTION", "PAYMENT STATUS"));

System.out.println("=====
=====
=====");

        while(!gameVerseQueue.isEmpty())
        {
            temp = (GameVerse)gameVerseQueue.dequeue();

            System.out.println(temp.toString());

            tempQ.enqueue(temp);
        }

System.out.println("=====
=====
=====");

        //RESTORE GAMEVERSEQUEUE

        while(!tempQ.isEmpty())
        {
            gameVerseQueue.enqueue(tempQ.dequeue());
        }

        //2)SEARCH AND DISPLAY THE CUSTOMER'S DETAIL
        System.out.println(" ");
        System.out.print("Please enter customer's ID that you
want to change the date >> ");
        String cID = scan.next();

```

```

        boolean found = false;

        String iDate = " ";

        //&& !found
        while(!gameVerseQueue.isEmpty())
        {
            temp = (GameVerse)gameVerseQueue.dequeue();

            if(temp.getCustomerID().equalsIgnoreCase(cID))
            {
                found = true;
                System.out.println("\n");

                System.out.println("=====
                =====
                =====");
                System.out.println("
                CUSTOMER'S DETAILS
                ");

                System.out.println("=====
                =====
                =====");
                System.out.println(String.format("%-18s%-26s%-
                18s%-15s%-18s%-15s%-15s%-10s%-15S%-10S",
                "CUSTOMER
                ID", "CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM TYPE", "PLATFORM
                ID", "NO PHONE", "DURATION", "DATE", "SUBSCRIPTION", "PAYMENT
                STATUS"));

                System.out.println("=====
                =====
                =====");
                System.out.println(temp.toString());

                System.out.println("=====
                =====
                =====");

                //3) UPDATE CUSTOMER'S DATE BOOKED
                System.out.print("When do you want to change the
                date >>");

                iDate = scan.next();
                GameVerse gv = new
                GameVerse(temp.getCustomerID(), temp.getCustomerName(),
                temp.getPaymentType(), temp.getPlatformType(), temp.getPlatformID(),
                temp.getPhoneNum(), temp.getDuration(), iDate,
                temp.getSubscription(), temp.getPaymentStatus());

                tempQ.enqueue(gv);
            }
            else
                tempQ.enqueue(temp);
        }
    }
}

```

```

    }

    //RESTORE
    while(!tempQ.isEmpty())
    {
        gameVerseQueue.enqueue(tempQ.dequeue());
    }

    if(!found)
        System.out.println("THE ID YOU SEARCH DOES NOT EXIST
IN THE DATABASE");
    else
        while(!gameVerseQueue.isEmpty())
        {
            temp = (GameVerse)gameVerseQueue.dequeue();
            if(temp.getCustomerID().equalsIgnoreCase(cid) &&
temp.getDate().equalsIgnoreCase(iDate));
                tempQ.enqueue(temp);
        }

        while(!tempQ.isEmpty())
        {
            gameVerseQueue.enqueue(tempQ.dequeue());
        }

        System.out.println("-----UPDATED-----");
        while(!gameVerseQueue.isEmpty())
        {
            temp = (GameVerse)gameVerseQueue.dequeue();

            System.out.println(temp.toString());

            tempQ.enqueue(temp);
        }

////////////////////////////////////
////////////////////////////////////
        //restore
        while(!tempQ.isEmpty())
        {
            gameVerseQueue.enqueue(tempQ.dequeue());
        }

        //4) SPLIT TO PC GAMING AND CONSOLE

        Queue gvPCGaming = new Queue();
        Queue gvConsole = new Queue();

        while(!gameVerseQueue.isEmpty())
        {
            temp = (GameVerse)gameVerseQueue.dequeue();

```

```

        if (temp.getPlatformType().equalsIgnoreCase("PC
Gaming"))
        {
            gvPCGaming.enqueue(temp);
        }
        else
        {
            gvConsole.enqueue(temp);
        }

        tempQ.enqueue(temp);
    }

    //RESTORE GAMEVERSEQUEUE
    while (tempQ.isEmpty())
    {
        gameVerseQueue.enqueue(tempQ.dequeue());
    }

    //DISPLAY GVPCGAMING
    Queue PCTemp = new Queue();
    System.out.println("\n");

System.out.println("=====
=====
=====");
        System.out.println("CUSTOMER WHO CHOOSE PC GAMING");

System.out.println("=====
=====
=====");
        System.out.println(String.format("%-18s%-26s%-18s%-15s%-
18s%-15s%-15s%-10s%-15S%-10S",
            "CUSTOMER ID", "CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM
TYPE", "PLATFORM ID", "NO PHONE", "DURATION", "DATE",
"SUBSCRIPTION", "PAYMENT STATUS"));

System.out.println("=====
=====
=====");

        while (!gvPCGaming.isEmpty())
        {
            temp = (GameVerse)gvPCGaming.dequeue();

            System.out.println(temp.toString());

            PCTemp.enqueue(temp);
        }

System.out.println("=====
=====
=====");

```



```

//RESTORE GVPCGAMING

while(!PCTemp.isEmpty())
{
    gvPCGaming.enqueue(PCTemp.dequeue());
}

//DISPLAY GVCONSOLE
Queue ConTemp = new Queue();
System.out.println("\n");

System.out.println("=====
=====
=====");
    System.out.println("CUSTOMER WHO CHOOSE CONSOLE");

System.out.println("=====
=====
=====");
    System.out.println(String.format("%-18s%-26s%-18s%-15s%-
18s%-15s%-15s%-10s%-15S%-10S",
    "CUSTOMER ID", "CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM
TYPE", "PLATFORM ID", "NO PHONE", "DURATION", "DATE",
"SUBSCRIPTION", "PAYMENT STATUS"));

System.out.println("=====
=====
=====");

    while(!gvConsole.isEmpty())
    {
        temp = (GameVerse)gvConsole.dequeue();

        System.out.println(temp.toString());

        ConTemp.enqueue(temp);
    }

System.out.println("=====
=====
=====");

//DISPLAY GVCONSOLE

while(!ConTemp.isEmpty())
{
    gvConsole.enqueue(ConTemp.dequeue());
}

/*5)Calculate and display the total of payment for each
category which is PC gaming and

```

```

        consoles which the payment method using cash.*/
        double totPaymentPC = 0.0, totPaymentCons = 0.0;
        while (!gvPCGaming.isEmpty())
        {
            temp = (GameVerse)gvPCGaming.dequeue(); // retrieve

            if (temp.getPaymentType().equalsIgnoreCase("Cash") &&
temp.getPlatformType().equalsIgnoreCase("PC Gaming"))
                totPaymentPC += temp.calculatePrice();

            PCTemp.enqueue(temp);
        }

        while (!PCTemp.isEmpty())
        {
            gvPCGaming.enqueue(PCTemp.dequeue());
        }

        while (!gvConsole.isEmpty())
        {
            temp = (GameVerse)gvConsole.dequeue(); // retrieve

            if (temp.getPaymentType().equalsIgnoreCase("Cash"))
                totPaymentCons += temp.calculatePrice();

            PCTemp.enqueue(temp);
        }

        while (!ConTemp.isEmpty())
        {
            gvConsole.enqueue(ConTemp.dequeue());
        }

        System.out.println("TOTAL PAYMENT FOR PC GAMING: RM" +
df.format(totPaymentPC));
        System.out.println("TOTAL PAYMENT FOR CONSOLES: RM" +
df.format(totPaymentCons));

        //6) Remove the record of the customer that does not
        subscribe the GameVerse monthly subscription and store the data into
        new LinkedList called gvNonSubscribe.
        Queue gvNonSubscribe = new Queue();
        while (!gvPCGaming.isEmpty())
        {
            temp = (GameVerse)gvPCGaming.dequeue();

            if(temp.getSubscription().equalsIgnoreCase("No"))
            {
                gvNonSubscribe.enqueue(temp);
            }
            else
                PCTemp.enqueue(temp);
        }

        while (!PCTemp.isEmpty())
        {

```

```

        gvPCGaming.enqueue(PCTemp.dequeue());
    }

    while(!gvConsole.isEmpty())
    {
        temp = (GameVerse)gvConsole.dequeue();

        if(temp.getSubscription().equalsIgnoreCase("No"))
        {
            gvNonSubscribe.enqueue(temp);
        }
        else
            ConTemp.enqueue(temp);
    }

    while (!ConTemp.isEmpty())
    {
        gvConsole.enqueue(ConTemp.dequeue());
    }

    Queue nonTemp = new Queue();
    System.out.println("\n");

    System.out.println("\n=====
=====
=====");
    System.out.println("
GAMEVERSE APPLICATION SYSTEM(NON-SUBSCRIBER)
");

    System.out.println("=====
=====
=====");
    System.out.println(String.format("%-18s%-26s%-18s%-15s%-
18s%-15s%-15s%-10s%-15S%-10S",
                                     "CUSTOMER ID",
"CUSTOMER NAME", "PAYMENT TYPE", "PLATFORM TYPE", "PLATFORM ID", "NO
PHONE", "DURATION", "DATE", "SUBSCRIPTION", "PAYMENT STATUS"));

    System.out.println("=====
=====
=====");
    while (!gvNonSubscribe.isEmpty())
    {
        temp = (GameVerse)gvNonSubscribe.dequeue();
        System.out.println(temp.toString());
        nonTemp.enqueue(temp);
    }

    while (!gvNonSubscribe.isEmpty())
    {
        gvNonSubscribe.enqueue(nonTemp.dequeue());
    }

```

```

System.out.println("=====
=====
=====");

        scan.close();
    }

    catch(FileNotFoundException fnfe)
    {
        System.out.println(fnfe.getMessage());
    }
    catch(IOException io)
    {
        System.out.println(io.getMessage());
    }
    catch(Exception e)
    {
        System.out.println(e.getMessage());
    }
}
}

```

6. SAMPLE OUTPUT

INPUT 1

```
GV21569;Siti Fatimah binti Jamil;Cash;PC Gaming;PCG076;013-5264875;2;02-06-22;Yes;Done
GV26189;Ibrahim Omar bin Samad;Online Banking;Console;CON011;014-8634826;3;04-06-22;Yes;Done
GV59234;Muhammad Azmi bin Aziz;Online Banking;Console;CON036;016-5264823;1;07-06-22;No;Done
GV15268;Abdur Rohman bin Mahmood;Cash;PC Gaming;PCG123;013-2925846;5;21-06-22;No;Pending
GV26847;Muhammad Hassan bin Nasir;Cash;PC Gaming;PCG026;014-8889654;5;09-06-22;No;Done
GV15632;Alif Wafi bin Najib;Online Banking;Console;CON156;018-1563248;10;30-06-22;Yes;Done
GV15269;Idris Khan bin Shafiq Khan;Cash;PC Gaming;PCG002;019-1235849;2;13-06-22;Yes;Done
GV15632;Maria Casey;Cash;PC Gaming;PCG016;014-9457777;6;18-06-22;No;Pending
GV78561;Nur Adlina binti Ahmad;Online Banking;Console;CON001;014-2925786;9;29-06-22;No;Done
GV88520;Nik Amir;Cash;Console;CON029;014-1593574;5;25-06-22;Yes;Done
GV87452;Aiman bin Zaid;Cash;Console;CON562;017-9826564;2;13-09-22;No;Done
GV78456;Hamidi bin Anwar;Online Banking;PC Gaming;PCG219;013-8795612;3;01-06-22;Yes;Pending
GV32354;Karim bin Rashid;Cash;PC Gaming;PCG212;015-5123542;5;22-06-22;Yes;Done
GV32354;Muhammad bin Affan;Cash;PC Gaming;PCG112;019-9985221;6;05-06-22;No;Done
GV98796;Hilamni bin Hilmi;Online Banking;Console;CON741;011-45662154;1;01-07-22;No;Done;Done
GV87323;Farah binti Farid;Cash;Console;CON875;011-79845211;2;29-06-22;No;Pending
GV23114;Ameer bin Amiruddin;Cash;PC Gaming;PCG130;012-1245887;4;31-05-22;Yes;Pending
GV32432;Hayati binti Hamid;Cash;Console;CON212;016-8791213;4;15-06-22;Yes;Done
GV56543;Nabil bin Rahim;Online Banking;PC Gaming;PCG568;018-5461312;3;23-07-22;Yes;Done
GV23445;Levi Akmal bin Aril;Online Banking;PC Gaming;PCG243;015-8413546;2;01-07-22;No;Pending
GV12333;Salleh bin Mohamad;Cash;Console;CON335;012-5464789;7;25-06-22;Yes;Done
GV68756;Omar bin Lukman;Online Banking;PC Gaming;PCG032;010-2135464;1;29-05-22;Yes;Done
GV24546;Hasdi bin Daud;Cash;Console;CON243;017-4654312;5;14-07-22;Yes;Done
GV87867;Norman bin Naim;Online Banking;PC Gaming;PCG124;018-5616878;3;05-06-22;No;Done
GV87686;Salina binti Sulaiman;Online Banking;PC Gaming;PCG321;010-8462115;2;22-07-22;Yes;Done
```

• LINKEDLIST DATA STRUCTURE

OUTPUT 1

GAMEVERSE APPLICATION SYSTEM									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PCG321	010-8462115	2	22-07-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PCG124	018-5616878	3	05-06-22	No	Done
GV24546	Hasdi bin Daud	Cash	Console	CON243	017-4654312	5	14-07-22	Yes	Done
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PCG032	010-2135464	1	29-05-22	Yes	Done
GV12333	Salleh bin Mohamad	Cash	Console	CON335	012-5464789	7	25-06-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PCG243	015-8413546	2	01-07-22	No	Pending
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PCG568	018-5461312	3	23-07-22	Yes	Done
GV32432	Hayati binti Hamid	Cash	Console	CON212	016-8791213	4	15-06-22	Yes	Done
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PCG130	012-1245887	4	31-05-22	Yes	Pending
GV87323	Farah binti Farid	Cash	Console	CON875	011-79845211	2	29-06-22	No	Pending
GV98796	Hilamni bin Hilmi	Online Banking	Console	CON741	011-45662154	1	01-07-22	No	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PCG112	019-9985221	6	05-06-22	No	Done
GV32354	Karim bin Rashid	Cash	PC Gaming	PCG212	015-5123542	5	22-06-22	Yes	Done
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PCG219	013-8795612	3	01-06-22	Yes	Pending
GV87452	Aiman bin Zaid	Cash	Console	CON562	017-9826564	2	13-09-22	No	Done
GV88520	Nik Amir	Cash	Console	CON029	014-1593574	5	25-06-22	Yes	Done
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CON001	014-2925786	9	29-06-22	No	Done
GV15632	Maria Casey	Cash	PC Gaming	PCG016	014-9457777	6	18-06-22	No	Pending
GV15269	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PCG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Alif Wafi bin Najib	Online Banking	Console	CON156	018-1563248	10	30-06-22	Yes	Done
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PCG026	014-8889654	5	09-06-22	No	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PCG123	013-2925846	5	21-06-22	No	Pending
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CON036	016-5264823	1	07-06-22	No	Done
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CON011	014-8634826	3	04-06-22	Yes	Done
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PCG076	013-5264875	2	02-06-22	Yes	Done

Please enter customer's ID that you want to change the date >> gv21569

CUSTOMER'S DETAILS									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PCG076	013-5264875	2	02-06-22	Yes	Done

When do you want to change the date? >>22-22-22

Updated customer list

*****UPDATED LIST*****									
=====									
GAMEVERSE APPLICATION SYSTEM									
=====									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PGG321	010-8462115	2	22-07-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PGG124	018-5616878	3	05-06-22	No	Done
GV24546	Hasdi bin Daud	Cash	Console	CNG243	017-4654312	5	14-07-22	Yes	Done
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PGG032	010-2135464	1	29-05-22	Yes	Done
GV12333	Salleh bin Mohamad	Cash	Console	CNG335	012-5464789	7	25-06-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PGG243	015-8413546	2	01-07-22	No	Pending
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PGG568	018-5461312	3	23-07-22	Yes	Done
GV32432	Hayati binti Hamid	Cash	Console	CNG212	016-8791213	4	15-06-22	Yes	Done
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PGG130	012-1245897	4	31-05-22	Yes	Pending
GV87323	Farah binti Farid	Cash	Console	CNG875	011-79845211	2	29-06-22	No	Pending
GV98796	Hilman bin Hilmi	Online Banking	Console	CNG741	011-45662154	1	01-07-22	No	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PGG112	019-9985221	6	05-06-22	No	Done
GV32354	Karim bin Rashid	Cash	PC Gaming	PGG212	015-5123542	5	22-06-22	Yes	Done
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PGG219	013-8795612	3	01-06-22	Yes	Pending
GV87452	Aiman bin Zaid	Cash	Console	CNG562	017-9826564	2	13-09-22	No	Done
GV88520	Nik Amir	Cash	Console	CNG029	014-1593574	5	25-06-22	Yes	Done
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CNG001	014-2925786	9	29-06-22	No	Done
GV15632	Maria Casey	Cash	PC Gaming	PGG016	014-9457777	6	18-06-22	No	Pending
GV15268	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PGG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Alif Wafi bin Najib	Online Banking	Console	CNG156	018-1563248	10	30-06-22	No	Done
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PGG026	014-8898654	5	09-06-22	No	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PGG123	013-2925846	5	21-06-22	No	Pending
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CNG036	016-5264823	1	07-06-22	No	Done
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CNG011	014-8634826	3	04-06-22	Yes	Done
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PGG076	013-5264875	2	22-22-22	Yes	Done
=====									
GAMEVERSE APPLICATION SYSTEM(CUSTOMER WHO CHOOSE PC GAMING)									
=====									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PGG076	013-5264875	2	22-22-22	Yes	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PGG123	013-2925846	5	21-06-22	No	Pending
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PGG026	014-8898654	5	09-06-22	No	Done
GV15268	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PGG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Maria Casey	Cash	PC Gaming	PGG016	014-9457777	6	18-06-22	No	Pending
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PGG219	013-8795612	3	01-06-22	Yes	Pending
GV32354	Karim bin Rashid	Cash	PC Gaming	PGG212	015-5123542	5	22-06-22	Yes	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PGG112	019-9985221	6	05-06-22	No	Done
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PGG130	012-1245897	4	31-05-22	Yes	Pending
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PGG568	018-5461312	3	23-07-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PGG243	015-8413546	2	01-07-22	No	Pending
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PGG032	010-2135464	1	29-05-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PGG124	018-5616878	3	05-06-22	No	Done
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PGG321	010-8462115	2	22-07-22	Yes	Done
=====									
GAMEVERSE APPLICATION SYSTEM(CUSTOMER WHO CHOOSE CONSOLE)									
=====									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CNG011	014-8634826	3	04-06-22	Yes	Done
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CNG036	016-5264823	1	07-06-22	No	Done
GV15632	Alif Wafi bin Najib	Online Banking	Console	CNG156	018-1563248	10	30-06-22	Yes	Done
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CNG001	014-2925786	9	29-06-22	No	Done
GV88520	Nik Amir	Cash	Console	CNG029	014-1593574	5	25-06-22	Yes	Done
GV87452	Aiman bin Zaid	Cash	Console	CNG562	017-9826564	2	13-09-22	No	Done
GV98796	Hilman bin Hilmi	Online Banking	Console	CNG741	011-45662154	1	01-07-22	No	Done
GV87323	Farah binti Farid	Cash	Console	CNG875	011-79845211	2	29-06-22	No	Pending
GV32432	Hayati binti Hamid	Cash	Console	CNG212	016-8791213	4	15-06-22	Yes	Done
GV12333	Salleh bin Mohamad	Cash	Console	CNG335	012-5464789	7	25-06-22	Yes	Done
GV24546	Hasdi bin Daud	Cash	Console	CNG243	017-4654312	5	14-07-22	Yes	Done
=====									
TOTAL PAYMENT FOR EACH PLATFORM									
=====									
TOTAL PAYMENT FOR PC GAMING: RM 175.00									
TOTAL PAYMENT FOR CONSOLES: RM 187.50									
=====									
GAMEVERSE APPLICATION SYSTEM(NON-SUBSCRIBER)									
=====									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CNG036	016-5264823	1	07-06-22	No	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PGG123	013-2925846	5	21-06-22	No	Pending
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PGG026	014-8898654	5	09-06-22	No	Done
GV15632	Maria Casey	Cash	PC Gaming	PGG016	014-9457777	6	18-06-22	No	Pending
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CNG001	014-2925786	9	29-06-22	No	Done
GV87452	Aiman bin Zaid	Cash	Console	CNG562	017-9826564	2	13-09-22	No	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PGG112	019-9985221	6	05-06-22	No	Done
GV98796	Hilman bin Hilmi	Online Banking	Console	CNG741	011-45662154	1	01-07-22	No	Done
GV87323	Farah binti Farid	Cash	Console	CNG875	011-79845211	2	29-06-22	No	Pending
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PGG243	015-8413546	2	01-07-22	No	Pending
GV87867	Norman bin Naim	Online Banking	PC Gaming	PGG124	018-5616878	3	05-06-22	No	Done
=====									

OUTPUT 2

GAMEVERSE APPLICATION SYSTEM									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PCG321	010-8462115	2	22-07-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PCG124	018-5616878	3	05-06-22	No	Done
GV24546	Hasdi bin Daud	Cash	Console	CON243	017-4654312	5	14-07-22	Yes	Done
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PCG032	010-2135464	1	29-05-22	Yes	Done
GV12333	Salleh bin Mohamad	Cash	Console	CON335	012-5464789	7	25-06-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PCG243	015-8413546	2	01-07-22	No	Pending
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PCG568	018-5461312	3	23-07-22	Yes	Done
GV32432	Hayati binti Hamid	Cash	Console	CON212	016-8791213	4	15-06-22	Yes	Done
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PCG130	012-1245887	4	31-05-22	Yes	Pending
GV87323	Farah binti Farid	Cash	Console	CON875	011-79945211	2	29-06-22	No	Pending
GV98796	Hilam bin Hilmi	Online Banking	Console	CON741	011-45662154	1	01-07-22	No	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PCG112	019-9985221	6	05-06-22	No	Done
GV32354	Karim bin Rashid	Cash	PC Gaming	PCG212	015-5123542	5	22-06-22	Yes	Done
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PCG219	013-8795612	3	01-06-22	Yes	Pending
GV87452	Alman bin Zaid	Cash	Console	CON562	017-9826564	2	13-09-22	No	Done
GV85520	Nik Amir	Cash	Console	CON029	014-1593574	5	25-06-22	Yes	Done
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CON001	014-2925786	9	29-06-22	No	Done
GV15632	Maria Casey	Cash	PC Gaming	PCG016	014-9457777	6	18-06-22	No	Pending
GV15269	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PCG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Alif Wafi bin Najib	Online Banking	Console	CON156	018-1563248	10	30-06-22	Yes	Done
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PCG026	014-8889654	5	09-06-22	No	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PCG123	013-2925846	5	21-06-22	No	Pending
GV59234	Muhamad Azmi bin Aziz	Online Banking	Console	CON036	016-5264823	1	07-06-22	No	Done
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CON011	014-8634826	3	04-06-22	Yes	Done
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PCG076	013-5264875	2	02-06-22	Yes	Done

Please enter customer's ID that you want to change the date >> GV52656
The id you search are not available in the database

*****UPDATED LIST*****									
GAMEVERSE APPLICATION SYSTEM									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PCG321	010-8462115	2	22-07-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PCG124	018-5616878	3	05-06-22	No	Done
GV24546	Hasdi bin Daud	Cash	Console	CON243	017-4654312	5	14-07-22	Yes	Done
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PCG032	010-2135464	1	29-05-22	Yes	Done
GV12333	Salleh bin Mohamad	Cash	Console	CON335	012-5464789	7	25-06-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PCG243	015-8413546	2	01-07-22	No	Pending
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PCG568	018-5461312	3	23-07-22	Yes	Done
GV32432	Hayati binti Hamid	Cash	Console	CON212	016-8791213	4	15-06-22	Yes	Done
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PCG130	012-1245887	4	31-05-22	Yes	Pending
GV87323	Farah binti Farid	Cash	Console	CON875	011-79945211	2	29-06-22	No	Pending
GV98796	Hilam bin Hilmi	Online Banking	Console	CON741	011-45662154	1	01-07-22	No	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PCG112	019-9985221	6	05-06-22	No	Done
GV32354	Karim bin Rashid	Cash	PC Gaming	PCG212	015-5123542	5	22-06-22	Yes	Done
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PCG219	013-8795612	3	01-06-22	Yes	Pending
GV87452	Alman bin Zaid	Cash	Console	CON562	017-9826564	2	13-09-22	No	Done
GV85520	Nik Amir	Cash	Console	CON029	014-1593574	5	25-06-22	Yes	Done
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CON001	014-2925786	9	29-06-22	No	Done
GV15632	Maria Casey	Cash	PC Gaming	PCG016	014-9457777	6	18-06-22	No	Pending
GV15269	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PCG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Alif Wafi bin Najib	Online Banking	Console	CON156	018-1563248	10	30-06-22	Yes	Done
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PCG026	014-8889654	5	09-06-22	No	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PCG123	013-2925846	5	21-06-22	No	Pending
GV59234	Muhamad Azmi bin Aziz	Online Banking	Console	CON036	016-5264823	1	07-06-22	No	Done
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CON011	014-8634826	3	04-06-22	Yes	Done
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PCG076	013-5264875	2	02-06-22	Yes	Done

GAMEVERSE APPLICATION SYSTEM (CUSTOMER WHO CHOOSE PC GAMING)									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PCG076	013-5264875	2	02-06-22	Yes	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PCG123	013-2925846	5	21-06-22	No	Pending
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PCG026	014-8889654	5	09-06-22	No	Done
GV15269	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PCG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Maria Casey	Cash	PC Gaming	PCG016	014-9457777	6	18-06-22	No	Pending
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PCG219	013-8795612	3	01-06-22	Yes	Pending
GV32354	Karim bin Rashid	Cash	PC Gaming	PCG212	015-5123542	5	22-06-22	Yes	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PCG112	019-9985221	6	05-06-22	No	Done
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PCG130	012-1245887	4	31-05-22	Yes	Pending
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PCG568	018-5461312	3	23-07-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PCG243	015-8413546	2	01-07-22	No	Pending
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PCG032	010-2135464	1	29-05-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PCG124	018-5616878	3	05-06-22	No	Done
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PCG321	010-8462115	2	22-07-22	Yes	Done

GAMEVERSE APPLICATION SYSTEM(CUSTOMER WHO CHOOSE CONSOLE)										
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION		
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CON011	014-8634826	3	04-06-22	Yes	Done	
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CON036	016-5264823	1	07-06-22	No	Done	
GV15632	Alif Wafi bin Najib	Online Banking	Console	CON156	018-1563248	10	30-06-22	Yes	Done	
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CON001	014-2925786	9	29-06-22	No	Done	
GV88520	Nik Amir	Cash	Console	CON029	014-1593574	5	25-06-22	Yes	Done	
GV87452	Aiman bin Zaid	Cash	Console	CON562	017-9826564	2	13-09-22	No	Done	
GV98796	Hilam bin Hilmi	Online Banking	Console	CON741	011-45662154	1	01-07-22	No	Done	
GV87323	Farah binti Farid	Cash	Console	CON875	011-79845211	2	29-06-22	No	Pending	
GV32432	Hayati binti Hamid	Cash	Console	CON212	016-8791213	4	15-06-22	Yes	Done	
GV12333	Salieh bin Mohamad	Cash	Console	CON335	012-5464789	7	25-06-22	Yes	Done	
GV24546	Hasdi bin Daud	Cash	Console	CON243	017-4654312	5	14-07-22	Yes	Done	

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TOTAL PAYMENT FOR EACH PLATFORM

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TOTAL PAYMENT FOR PC GAMING: RM 175.00

TOTAL PAYMENT FOR CONSOLES: RM 187.50

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GAMEVERSE APPLICATION SYSTEM(NON-SUBSCRIBER)										
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS	
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CON036	016-5264823	1	07-06-22	No	Done	
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	POG123	013-2925946	5	21-06-22	No	Pending	
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	POG026	014-8889654	5	09-06-22	No	Done	
GV15632	Maria Casey	Cash	PC Gaming	POG016	014-9457777	6	18-06-22	No	Pending	
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CON001	014-2925786	9	29-06-22	No	Done	
GV87452	Aiman bin Zaid	Cash	Console	CON562	017-9826564	2	13-09-22	No	Done	
GV32354	Muhammad bin Affan	Cash	PC Gaming	POG112	019-9985221	6	05-06-22	No	Done	
GV98796	Hilam bin Hilmi	Online Banking	Console	CON741	011-45662154	1	01-07-22	No	Done	
GV87323	Farah binti Farid	Cash	Console	CON875	011-79845211	2	29-06-22	No	Pending	
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	POG243	015-8413546	2	01-07-22	No	Pending	
GV87867	Norman bin Naim	Online Banking	PC Gaming	POG124	018-5616878	3	05-06-22	No	Done	

• QUEUE DATA STRUCTURE

Output from gvData.txt

GAMEVERSE APPLICATION SYSTEM									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PCG076	013-5264875	2	02-06-22	Yes	Done
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CON011	014-8634826	3	04-06-22	Yes	Done
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CON036	016-5264823	1	07-06-22	No	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PCG123	013-2925846	5	21-06-22	No	Pending
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PCG026	014-8889654	5	09-06-22	No	Done
GV15632	Alif Wafi bin Najib	Online Banking	Console	CON156	018-1563248	10	30-06-22	Yes	Done
GV15269	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PCG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Maria Casey	Cash	PC Gaming	PCG016	014-9457777	6	18-06-22	No	Pending
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CON001	014-2925786	9	29-06-22	No	Done
GV88520	Nik Amir	Cash	Console	CON029	014-1593574	5	25-06-22	Yes	Done
GV87452	Aiman bin Zaid	Cash	Console	CON562	017-9826564	2	13-09-22	No	Done
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PCG219	013-8795612	3	01-06-22	Yes	Pending
GV32354	Karim bin Rashid	Cash	PC Gaming	PCG212	015-5123542	5	22-06-22	Yes	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PCG112	019-9985221	6	05-06-22	No	Done
GV98796	Hilamn bin Hilmi	Online Banking	Console	CON741	011-45662154	1	01-07-22	No	Done
GV87323	Farah binti Farid	Cash	Console	CON875	011-79845211	2	29-06-22	No	Pending
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PCG130	012-1245887	4	31-05-22	Yes	Pending
GV32432	Hayati binti Hamid	Cash	Console	CON212	016-8791213	4	15-06-22	Yes	Done
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PCG568	018-5461312	3	23-07-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PCG243	015-8413546	2	01-07-22	No	Pending
GV12333	Salleh bin Mohamad	Cash	Console	CON335	012-5464789	7	25-06-22	Yes	Done
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PCG032	010-2135464	1	29-05-22	Yes	Done
GV24546	Hasdi bin Daud	Cash	Console	CON243	017-4654312	5	14-07-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PCG124	018-5616878	3	05-06-22	No	Done
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PCG321	010-8462115	2	22-07-22	Yes	Done

Search and display user

Please enter customer's ID that you want to change the date >> GV0000
THE ID YOU SEARCH DOES NOT EXIST IN THE DATABASE

-----UPDATED-----

GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PCG076	013-5264875	2	02-06-22	Yes	Done
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CON011	014-8634826	3	04-06-22	Yes	Done
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CON036	016-5264823	1	07-06-22	No	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PCG123	013-2925846	5	21-06-22	No	Pending
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PCG026	014-8889654	5	09-06-22	No	Done
GV15632	Alif Wafi bin Najib	Online Banking	Console	CON156	018-1563248	10	30-06-22	Yes	Done
GV15269	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PCG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Maria Casey	Cash	PC Gaming	PCG016	014-9457777	6	18-06-22	No	Pending
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CON001	014-2925786	9	29-06-22	No	Done
GV88520	Nik Amir	Cash	Console	CON029	014-1593574	5	25-06-22	Yes	Done
GV87452	Aiman bin Zaid	Cash	Console	CON562	017-9826564	2	13-09-22	No	Done
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PCG219	013-8795612	3	01-06-22	Yes	Pending
GV32354	Karim bin Rashid	Cash	PC Gaming	PCG212	015-5123542	5	22-06-22	Yes	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PCG112	019-9985221	6	05-06-22	No	Done
GV98796	Hilamn bin Hilmi	Online Banking	Console	CON741	011-45662154	1	01-07-22	No	Done
GV87323	Farah binti Farid	Cash	Console	CON875	011-79845211	2	29-06-22	No	Pending
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PCG130	012-1245887	4	31-05-22	Yes	Pending
GV32432	Hayati binti Hamid	Cash	Console	CON212	016-8791213	4	15-06-22	Yes	Done
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PCG568	018-5461312	3	23-07-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PCG243	015-8413546	2	01-07-22	No	Pending
GV12333	Salleh bin Mohamad	Cash	Console	CON335	012-5464789	7	25-06-22	Yes	Done
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PCG032	010-2135464	1	29-05-22	Yes	Done
GV24546	Hasdi bin Daud	Cash	Console	CON243	017-4654312	5	14-07-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PCG124	018-5616878	3	05-06-22	No	Done
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PCG321	010-8462115	2	22-07-22	Yes	Done

Please enter customer's ID that you want to change the date >> GV32432

CUSTOMER'S DETAILS									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV32432	Hayati binti Hamid	Cash	Console	CON212	016-8791213	4	15-06-22	Yes	Done
When do you want to change the date >>01-01-23									
-----UPDATED-----									
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PCG076	013-5264875	2	02-06-22	Yes	Done
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CON011	014-8634826	3	04-06-22	Yes	Done
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CON036	016-5264823	1	07-06-22	No	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PCG123	013-2925846	5	21-06-22	No	Pending
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PCG026	014-8889654	5	09-06-22	No	Done
GV15632	Alif Wafi bin Najib	Online Banking	Console	CON156	018-1563248	10	30-06-22	Yes	Done
GV15269	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PCG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Maria Casey	Cash	PC Gaming	PCG016	014-9457777	6	18-06-22	No	Pending
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CON001	014-2925786	9	29-06-22	No	Done
GV88520	Nik Amir	Cash	Console	CON029	014-1593574	5	25-06-22	Yes	Done
GV87452	Aiman bin Zaid	Cash	Console	CON562	017-9826564	2	13-09-22	No	Done
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PCG219	013-8795612	3	01-06-22	Yes	Pending
GV32354	Karim bin Rashid	Cash	PC Gaming	PCG212	015-5123542	5	22-06-22	Yes	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PCG112	019-9985221	6	05-06-22	No	Done
GV98796	Hilamn bin Hilmi	Online Banking	Console	CON741	011-45662154	1	01-07-22	No	Done
GV87323	Farah binti Farid	Cash	Console	CON875	011-79845211	2	29-06-22	No	Pending
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PCG130	012-1245887	4	31-05-22	Yes	Pending
GV32432	Hayati binti Hamid	Cash	Console	CON212	016-8791213	4	01-01-23	Yes	Done
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PCG568	018-5461312	3	23-07-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PCG243	015-8413546	2	01-07-22	No	Pending
GV12333	Salleh bin Mohamad	Cash	Console	CON335	012-5464789	7	25-06-22	Yes	Done
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PCG032	010-2135464	1	29-05-22	Yes	Done
GV24546	Hasdi bin Daud	Cash	Console	CON243	017-4654312	5	14-07-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PCG124	018-5616878	3	05-06-22	No	Done
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PCG321	010-8462115	2	22-07-22	Yes	Done

Split record for each platform

CUSTOMER WHO CHOOSE PC GAMING									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV21569	Siti Fatimah binti Jamil	Cash	PC Gaming	PCG076	013-5264875	2	02-06-22	Yes	Done
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PCG123	013-2925846	5	21-06-22	No	Pending
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PCG026	014-8889654	5	09-06-22	No	Done
GV15269	Idris Khan bin Shafiq Khan	Cash	PC Gaming	PCG002	019-1235849	2	13-06-22	Yes	Done
GV15632	Maria Casey	Cash	PC Gaming	PCG016	014-9457777	6	18-06-22	No	Pending
GV78456	Hamidi bin Anwar	Online Banking	PC Gaming	PCG219	013-8795612	3	01-06-22	Yes	Pending
GV32354	Karim bin Rashid	Cash	PC Gaming	PCG212	015-5123542	5	22-06-22	Yes	Done
GV32354	Muhammad bin Affan	Cash	PC Gaming	PCG112	019-9985221	6	05-06-22	No	Done
GV23114	Ameer bin Amiruddin	Cash	PC Gaming	PCG130	012-1245887	4	31-05-22	Yes	Pending
GV56543	Nabil bin Rahim	Online Banking	PC Gaming	PCG568	018-5461312	3	23-07-22	Yes	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PCG243	015-8413546	2	01-07-22	No	Pending
GV68756	Omar bin Lukman	Online Banking	PC Gaming	PCG032	010-2135464	1	29-05-22	Yes	Done
GV87867	Norman bin Naim	Online Banking	PC Gaming	PCG124	018-5616878	3	05-06-22	No	Done
GV87686	Salina binti Sulaiman	Online Banking	PC Gaming	PCG321	010-8462115	2	22-07-22	Yes	Done

CUSTOMER WHO CHOOSE CONSOLE									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV26189	Ibrahim Omar bin Samad	Online Banking	Console	CON011	014-8634826	3	04-06-22	Yes	Done
GV59234	Muhammad Azmi bin Aziz	Online Banking	Console	CON036	016-5264823	1	07-06-22	No	Done
GV15632	Alif Wafi bin Najib	Online Banking	Console	CON156	018-1563248	10	30-06-22	Yes	Done
GV78561	Nur Adlina binti Ahmad	Online Banking	Console	CON001	014-2925786	9	29-06-22	No	Done
GV88520	Nik Amir	Cash	Console	CON029	014-1593574	5	25-06-22	Yes	Done
GV87452	Aiman bin Zaid	Cash	Console	CON562	017-9826564	2	13-09-22	No	Done
GV98796	Hilman bin Hilmi	Online Banking	Console	CON741	011-45662154	1	01-07-22	No	Done
GV87323	Farah binti Farid	Cash	Console	CON875	011-79845211	2	29-06-22	No	Pending
GV32432	Hayati binti Hamid	Cash	Console	CON212	016-8791213	4	15-06-22	Yes	Done
GV12333	Salleh bin Mohamad	Cash	Console	CON335	012-5464789	7	25-06-22	Yes	Done
GV24546	Hasdi bin Daud	Cash	Console	CON243	017-4654312	5	14-07-22	Yes	Done

Output for total payment each platform by using cash

TOTAL PAYMENT FOR PC GAMING: RM175.00

TOTAL PAYMENT FOR CONSOLES: RM187.50

Output for non-subscriber

GAMEVERSE APPLICATION SYSTEM (NON-SUBSCRIBER)									
CUSTOMER ID	CUSTOMER NAME	PAYMENT TYPE	PLATFORM TYPE	PLATFORM ID	NO PHONE	DURATION	DATE	SUBSCRIPTION	PAYMENT STATUS
GV15268	Abdur Rohman bin Mahmood	Cash	PC Gaming	PCG123	013-2925846	5	21-06-22	No	Pending
GV26847	Muhammad Hassan bin Nasir	Cash	PC Gaming	PCG026	014-8889654	5	09-06-22	No	Done
GV15632	Maria Casey	Cash	PC Gaming	PCG016	014-9457777	6	18-06-22	No	Pending
GV32354	Muhammad bin Affan	Cash	PC Gaming	PCG112	019-9985221	6	05-06-22	No	Done
GV23445	Levi Akmal bin Aril	Online Banking	PC Gaming	PCG243	015-8413546	2	01-07-22	No	Pending
GV87867	Norman bin Naim	Online Banking	PC Gaming	PCG124	018-5616878	3	05-06-22	No	Done

7. PROJECT CONCLUSION

Based on the project that we have completed, we have concluded that LinkedList are much easier compared to Queue after we have done completing our Group Project. We all agree why LinkedList are much easier compared to Queue is because of how simple LinkedList are compared than Queue that need to restore every action that has been done. Here are some comparisons that differ Queue and LinkedList based on our Group Project.

First, for searching and replacing value, LinkedList can directly search for the data while in Queue, we must dequeue one data at a time and restore it somewhere else to avoid data lost. From this, In LinkedList, we can directly search for the data that has been requested from user without the need to dequeue and restore it. This also faster to replace the value as no restoration are needed to replace the value. From this, it saves process time for searching and replacing and displaying the updated data as the data do not need to be restored.

In the next process, of this project, we split and display the record for customers who choose to play games on PC Gaming and consoles platform. It is easier to use Linked List for this process because traversing the data and store the data are faster in Linked List while in Queue it is harder because we need to remove all the data and data need to be restored again when we want to use the data once more.

Later in another process, which we calculate and display the total of payment for each category which PC Gaming and consoles which the payment method using cash. In Linked List, we can keep the data stores at the same place and even copy the data to another Linked List while in Queue need to dequeue the data first then copy the data to put to another Queue. In order to use the Queue again, we need to restore the data again.

At the last process, for remove record of customer who do not subscribe for our monthly subscription we found that using LinkedList data structure is a lot easier to implement it in our coding that already help us to remove the data instead of Queue that we need to restore the data if we have already removed data that make it our project more complex. So, it takes more time complete it.

In a conclusion, LinkedList are better for us to implement it in our project instead of using Queue. As it improves our time management and save our energy to ensure all the coding will be perfectly done.