



NATIONAL SENIOR CERTIFICATE EXAMINATION  
NOVEMBER 2013

## INFORMATION TECHNOLOGY: PAPER II

### MARKING GUIDELINES

Time: 3 hours

120 marks

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**These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.**

**The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.**

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## SECTION A SQL ANSWER SHEET

1.1:

```
SELECT *✓FROM tblShows✓ ORDER BY ShowDate✓
```

1.2:

```
SELECT ShowName, ShowTime, ShowCapacity✓ FROM tblShows  
WHERE ShowTime = #15:00#✓ AND ShowCapacity >= 250✓;
```

1.3:

```
SELECT ActorName, INT ((NOW() - ActorDOB✓) / 365✓) AS ActorAge✓ FROM tblActors;
```

OR

```
SELECT ActorName, YEAR (NOW()✓) – YEAR(ActorDOB) ✓ AS ActorAge✓ FROM tblActors;
```

1.4:

```
SELECT ShowName, COUNT(RoleName)✓  
FROM tblRoles ✓, tblShows ✓  
WHERE TblRoles.ShowID = tblShows.ShowID ✓  
GROUP BY ShowName ✓
```

1.5:

```
INSERT INTO tblActors ✓ (ActorName, ActorDOB, ActorRate)✓  
VALUES ('Bob Reeves', #1976-10-04#, 175)✓✓
```

1.6:

```
UPDATE tblShows SET ShowCapacity = 450✓  
WHERE ShowID = "Henry5";✓
```

1.7:

```
SELECT ShowDate✓, SUM(ShowCapacity * ShowCost)✓ AS TotalIncome  
FROM tblShows GROUP BY✓ ShowDate✓;
```

1.8:

```
SELECT ShowName, RoleName✓  
FROM tblRoles, tblShows✓  
WHERE tblRoles.ShowID✓ = tblShows.ShowID✓ AND RoleName LIKE✓ 'Sir*'✓
```

1.9:

```
SELECT ActorName, ShowName, ROUND✓(SUM✓(ShowDuration / 60✓ * ActorRate✓),2)  
FROM tblShows, tblActors, tblRoles✓✓  
WHERE tblShows.ShowID = tblRoles.ShowID✓ AND tblRoles.ActorID = tblActors.ActorID✓  
GROUP BY ActorName✓, ShowName✓;
```

## SECTION B OBJECT ORIENTED PROGRAMMING

### JAVA SOLUTION:

#### QUESTION 2.

```
// Question 2.1
public class Booking ✓
{
    // Question 2.2
    private String seat;
    private boolean paid;
    private String contact;
}
} ✓Private
} ✓Correct Types
} ✓Appropriate names

// Question 2.3
public Booking(String st, String ct, boolean pd) ✓
{
    seat = st; ✓
    paid = pd;
    contact = ct;
}

// Question 2.4
public double getCost()✓
{
    double cost = 200.00; ✓

    if (seat.charAt(0) >= 'E' & seat.charAt(0) <= 'H') ✓
    {
        cost = cost * 0.8; ✓
    }
    else if (seat.charAt(0) >= 'I' & seat.charAt(0) <= 'L')
    {
        cost = cost * 0.6; ✓
    }

    return cost;
}

// Question 2.5
public String getSeat()✓
{
    return seat;
}

public boolean isPaid()✓
{
    return paid;
}

// Question 2.6
public String toString()✓
{
    String tmp = getSeat() + "\tR" + Math.Round(getCost()*100)/100.0✓ +
                "\t\t";✓

    if (isPaid())
    {
        tmp = tmp + "Pd";
    }

    return tmp; ✓
}
}
```

**[17]**

### QUESTION 3

```
// Question 3.1
public class GroupBooking✓ extends Booking✓
{
    // Question 3.2
    private String groupName;
    private int groupSize;
}
    } ✓Private
    } ✓Correct Types
    } ✓Appropriate names

// Question 3.3
public GroupBooking(String st, String ct, boolean pd, String gn, int gs) ✓
{
    super(st,ct,pd); ✓
    groupName = gn;
    groupSize = gs; ✓
}

// Question 3.4
public double getCost()✓
{
    double cost = super.getCost();✓
    int discountPoints = groupSize / 4; ✓

    return cost - (20.00 * discountPoints); ✓
}

// Question 3.5
public String getGroupName()
{
    return groupName;
}
    } ✓

// Question 3.6
public String toString()✓
{
    return super.toString()✓ + "\t" + groupName; ✓
}
}
```

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### QUESTIONS 4 AND 6.1

```
import java.io.*;

// Question 4.1
public class BookingManager ✓
{
    // Question 4.2
    private Booking[] bookings = new Booking[180];
    private int counter = 0;
}
    } ✓Private
    } Types (Booking array✓ and int✓)
    } ✓Initialised correctly
```

```
// Question 4.3
public BookingManager()
{
    try
    {
        BufferedReader fIn = new BufferedReader(new
            FileReader("bookings.txt")); ✓

        String line = fIn.readLine();

        while (line != null) ✓
        {
            String[] parts = line.split(","); ✓

            boolean paid = (parts[2].equals("Yes"));

            if (parts.length == 3) ✓
            {
                bookings[counter] = new Booking(parts[0], parts[1], paid); ✓
            }
            else
            {
                int groupSize = Integer.parseInt(parts[4]);

                bookings[counter] = new GroupBooking(parts[0], parts[1],
                    paid, parts[3], groupSize); ✓
            }

            counter++; ✓
            line = fIn.readLine(); ✓
        }

        fIn.close();
    }
    catch (IOException e)
    {
        System.out.println(e);
    }
}

// Question 4.4
public String listAllBookings() ✓
{
    String rString = "";

    for(int i = 0; i < counter; i++) ✓
    {
        rString += bookings[i] ✓ + "\n"; ✓
    }

    return rString; ✓
}
```

```
// Question 4.5
public String listGroupBookings()✓
{
    String rString = "";

    for(int i = 0; i < counter; i++)✓
    {
        if (bookings[i] instanceof GroupBooking) ✓
        {
            GroupBooking tempBooking = (GroupBooking) bookings[i]; ✓

            if (rString.indexOf(tempBooking.getGroupName()) < 0) ✓
            {
                rString += tempBooking.getGroupName() + "\n";✓
            }
        }
    }

    return rString; ✓
}
```

```
// Question 4.6
public double outstandingPayments()✓
{
    double totalOutstanding = 0.00; ✓

    for(int i = 0; i < counter; i++)✓
    {
        if (!bookings[i].isPaid())✓
        {
            totalOutstanding += bookings[i].getCost();✓
        }
    }

    return totalOutstanding;
}
```

**[30]**

```
// Question 6.1 (Marked with Rubric)
public String listEmptySeats()
{
    String emptySeats = "";

    for (char c = 'A'; c <= 'L' c++)
    {
        for (int j = 1; j <= 15; j++)
        {
            String currentSeat = "" + c + j;
            int seatCounter = 0;
            boolean foundSeat = false;

            while ((seatCounter < counter) && (foundSeat == false))
            {
                if (bookings[seatCounter].getSeat().equals(currentSeat))
                {
                    foundSeat = true;
                }
                seatCounter++;
            }

            if (!foundSeat)
```

```
        {
            emptySeats += currentSeat + " ";
        }
    }
}

return emptySeats;
}
}
```

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## QUESTIONS 5 AND 6.2

```
import java.io.BufferedReader;
import java.io.InputStreamReader;

// Question 5.1
public class TheatreManager ✓
{
    public static void main(String[] args) throws Exception
    {
        BookingManager bMan = new BookingManager(); ✓

        // Question 5.2
        System.out.println("All Bookings");
        System.out.println("-----");
        System.out.println(bMan.listAllBookings());
        System.out.println();

        System.out.println("Group Bookings");
        System.out.println("-----");
        System.out.println(bMan.listGroupBookings());
        System.out.println();

        System.out.println("Outstanding Payments");
        System.out.println("-----");
        System.out.println("Outstanding Payments : R " +
            bMan.outstandingPayments());
        System.out.println();

        // Question 6.2
        System.out.println("Empty Seats");
        System.out.println("-----");
        System.out.println(bMan.listEmptySeats()); ✓
    }
}
```

✓ Call Methods  
✓ Correct Order  
✓ Correct Output

[5]

[1]



**DELPHI SOLUTION:**

**QUESTION 2**

```

unit uBooking;

interface

uses SysUtils;

// Question 2.1
type TBooking = class✓
    private // Question 2.2
        seat : String;
        paid : boolean;
        contact : String;
    public
        constructor Create(st : String; ct : String; pd : boolean);
        function getCost : real; virtual;
        function getSeat : String;
        function isPaid : boolean;
        function toString : String; virtual;
end;

implementation

{ TBooking }

// Question 2.3
constructor TBooking.Create(st: String; ct: String ; pd: boolean); ✓
begin
    seat := st; ✓
    paid := pd;
    contact := ct;
end;

// Question 2.4
function TBooking.getCost: real; ✓
var
    cost : real;
begin
    cost := 200.00; ✓

    if (seat[1] >= 'E') AND (seat[1] <= 'H') then
        begin
            cost := cost * 0.8; ✓
        end
    else if (seat[1] >= 'I') AND (seat[1] <= 'L') then✓
        begin
            cost := cost * 0.6; ✓
        end;

    Result := cost;
end;

// Question 2.5
function TBooking.getSeat: String; ✓
begin
    Result := seat;
end;

// Question 2.6
function TBooking.isPaid: boolean; ✓

```

} ✓Private  
 } ✓Correct Types  
 } ✓Appropriate names

```
begin
    Result := paid;
end;

function TBooking.toString: String; ✓
begin
    Result := getSeat + #9✓ + 'R' + FloatToStrF(getCost, ffFixed, 10, 2) ✓ + #9 +
                #9;

    if isPaid then
        Result✓ := Result + 'Pd';
    end;
end.
```

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### QUESTION 3

```
unit uGroupBooking;

interface

uses uBooking;

// -- Question 3.1 --

type TGroupBooking✓ = class (TBooking) ✓

// -- Question 3.2 --

private
    groupName : String;
    groupSize : integer;
public
    constructor Create (st : String; ct : String; pd : boolean; gn : String; gs
                        : integer);
    function getCost : real; override;
    function toString : String; override;
    function getGroupName : String;
end;

implementation

{ TGroupBooking }

// -- Question 3.3 --

constructor TGroupBooking.Create(st: String; ct: String; pd: boolean; gn:
                                String;
                                gs: integer); ✓
begin
    Inherited Create(st,ct,pd); ✓
    groupName := gn;
    groupSize := gs; ✓
end;
```

```
// -- Question 3.4 --

function TGroupBooking.getCost: real; ✓
var
  cost : real;
  discountPoints : integer;
begin
  cost := Inherited getCost; ✓
  discountPoints := groupSize DIV 4; ✓

  Result := cost - (20.00 * discountPoints); ✓
end;

// -- Question 3.5 --

function TGroupBooking.getGroupName: String; } ✓
begin
  Result := groupName;
end;

// -- Question 3.6 --

function TGroupBooking.toString: String; ✓
begin
  Result := Inherited toString✓ + #9 + groupName; ✓
end;

end.
```

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## QUESTIONS 4 AND 6.1

```
unit uBookingManager;

interface

uses uBooking, uGroupBooking, SysUtils;

// -- Question 4.1 -

type TBookingManager = class✓

// -- Question 4.2 --

  private
    bookings : array[1..180] of TBooking; } ✓Private
    counter : integer; } ✓Types (Booking array✓ and int✓)
  public } ✓Initialised correctly
    constructor Create;
    function listAllBookings : String;
    function listGroupBookings : String;
    function outstandingPayments : real;
    function listEmptySeats : String;
end;

implementation

{ TBookingManager }
// -- Question 4.3 --

constructor TBookingManager.Create;
var
```

```
inFile : TextFile;
line : String;
seat, contact, gName, sPaid : String;
gSize : integer;
paid : boolean;
begin

AssignFile(inFile, 'bookings.txt'); ✓
Reset(inFile);

counter := 0;

while not EOF(infile) do ✓
begin
  ReadLn(inFile, line); ✓
  Inc(counter); ✓

  seat := Copy(line, 1, Pos(',', line) - 1);
  Delete(line, 1, Pos(',', line));

  contact := Copy(line, 1, Pos(',', line) - 1);
  Delete(line, 1, Pos(',', line)); ✓

  if Pos(',', line) > 0 then ✓
  begin
    // GroupBooking
    sPaid := Copy(line, 1, Pos(',', line) - 1);
    Delete(line, 1, Pos(',', line));

    paid := (sPaid = 'Yes');

    gName := Copy(line, 1, Pos(',', line) - 1);
    Delete(line, 1, Pos(',', line));

    gSize := StrToInt(line);

    bookings[counter] := TGroupBooking.Create(seat, contact, paid, gName,
                                              gSize); ✓
  end
else
begin
  // Booking
  sPaid := line;

  paid := (sPaid = 'Yes');

  bookings[counter] := TBooking.Create(seat, contact, paid); ✓
end;
end;

CloseFile(inFile);

end;
```

```
// -- Question 4.4 --
function TBookingManager.listAllBookings: String; ✓
var
    loop : integer;
begin
    for loop := 1 to counter do ✓
        Result ✓ := Result + bookings[loop].toString ✓ + #13 ✓;
    end;

// -- Question 4.5 --
function TBookingManager.listGroupBookings: String; ✓
var
    temp : String;
    loop : integer;
    tempBooking : TGroupBooking;
begin
    temp := '';

    for loop := 1 to counter do ✓
        begin
            if bookings[loop] is TGroupBooking then ✓
                begin
                    tempBooking := bookings[loop] as TGroupBooking; ✓
                    if (Pos(tempBooking.getGroupName, temp) <= 0) then ✓
                        begin
                            temp := temp + tempBooking.getGroupName + #13; ✓
                        end;
                    end;
                end;
            end;

        Result := temp; ✓

    end;

// -- Question 4.6 --
function TBookingManager.outstandingPayments: real; ✓
var
    totalOutstanding : real;
    loop : integer;
begin
    totalOutstanding := 0; ✓

    for loop := 1 to counter do ✓
        if bookings[loop].isPaid = false then ✓
            totalOutstanding := totalOutstanding + bookings[loop].getCost; ✓

    Result := totalOutstanding;
end;
```

[30]

```
// -- Question 6.1 -- (Marked with Rubric)
function TBookingManager.listEmptySeats: String;
var
  rowCounter : char;
  numCounter : integer;
  emptySeats : String;
  foundSeat : boolean;
  currentSeat : String;
  seatCounter : integer;
begin
  emptySeats := '';

  for rowCounter := 'A' to 'L' do
    begin
      for numCounter := 1 to 15 do
        begin
          currentSeat := rowCounter + IntToStr(numCounter);
          seatCounter := 1;
          foundSeat := false;
          while (seatCounter <= counter) AND (foundSeat = false) do
            begin
              if bookings[seatCounter].getSeat = currentSeat then
                foundSeat := true;
                Inc(seatCounter);
              end;

              if foundSeat = false then
                emptySeats := emptySeats + currentSeat + ' ';
              end;
            end;
          end;
        end;
      Result := emptySeats;
    end;
  end.
```

[11]

## QUESTIONS 5 AND 6.2

```
unit uFrmMain;
interface

uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
  Dialogs, uBookingManager, StdCtrls, ComCtrls;

// -- Question 5.1 --
type
  TTheatreManager = class(TForm) ✓
    rchOutput: TRichEdit;
    procedure FormCreate(Sender: TObject);
    procedure FormActivate(Sender: TObject);
  private
    { Private declarations }
  public
    { Public declarations }
  end;
var
  Form1: TTheatreManager;
  bMan : TBookingManager;

implementation
{$R *.dfm}

procedure TForm1.FormCreate(Sender: TObject);
begin
  bMan := TBookingManager.Create; ✓
end;

procedure TForm1.FormActivate(Sender: TObject);
begin
  // -- Question 5.2 --
  rchOutput.Lines.Add('All Bookings');
  rchOutput.Lines.Add('-----');
  rchOutput.Lines.Add(bMan.listAllBookings);
  rchOutput.Lines.Add(' ');

  rchOutput.Lines.Add('Group Bookings');
  rchOutput.Lines.Add('-----');
  rchOutput.Lines.Add(bMan.listGroupBookings);
  rchOutput.Lines.Add(' ');

  rchOutput.Lines.Add('Outstanding Payments');
  rchOutput.Lines.Add('-----');
  rchOutput.Lines.Add('Outstanding Payments : R' +
    FloatToStr(bMan.outstandingPayments));
  rchOutput.Lines.Add(' ');

  // -- Question 6.2 --
  rchOutput.Lines.Add('Empty Seats');
  rchOutput.Lines.Add('-----');
  rchOutput.Lines.Add(bMan.listEmptySeats); ✓
end;

end.
```

✓ Call Methods  
✓ Correct Order  
✓ Correct Output

[5]

[1]

**OUTPUT**

**SECTION A            STRUCTURED QUERY LANGUAGE**

**QUESTION 1.1**

| Question_1_1 |                         |            |          |              |              |          |
|--------------|-------------------------|------------|----------|--------------|--------------|----------|
| ShowID       | ShowName                | ShowDate   | ShowTime | ShowDuration | ShowCapacity | ShowCost |
| Ado          | Much Ado about Nothing  | 2013/11/03 | 15:00    | 109          | 415          | 200      |
| Lear         | King Lear               | 2013/11/04 | 17:30    | 179          | 350          | 250      |
| 12Night      | Twelfth Night           | 2013/11/08 | 15:00    | 160          | 325          | 200      |
| Macbeth      | Macbeth                 | 2013/11/09 | 17:30    | 174          | 280          | 250      |
| Henry5       | Henry V                 | 2013/11/12 | 17:30    | 270          | 300          | 250      |
| Othello      | Othello                 | 2013/11/20 | 20:00    | 190          | 300          | 350      |
| Merchant     | Merchant of Venice      | 2013/11/20 | 17:30    | 279          | 400          | 250      |
| 2Gents       | Two Gentlemen of Verona | 2013/11/20 | 15:00    | 215          | 350          | 200      |
| Romeo        | Romeo and Juliet        | 2013/11/22 | 17:30    | 160          | 360          | 250      |
| MND          | Midsummer Night's Dream | 2013/11/24 | 15:00    | 204          | 375          | 200      |
| Errors       | Comedy of Errors        | 2013/11/24 | 20:00    | 155          | 300          | 350      |

**QUESTION 1.2**

| Question_1_2            |          |              |
|-------------------------|----------|--------------|
| ShowName                | ShowTime | ShowCapacity |
| Twelfth Night           | 15:00    | 325          |
| Two Gentlemen of Verona | 15:00    | 350          |
| Much Ado about Nothing  | 15:00    | 415          |
| Midsummer Night's Dream | 15:00    | 375          |

**QUESTION 1.3**

| Question_1_3     |          |
|------------------|----------|
| ActorName        | ActorAge |
| Garth York       | 33       |
| Ebony Sweeney    | 32       |
| Mary Rocha       | 51       |
| Summer Dickson   | 43       |
| Clarke Stafford  | 44       |
| Veronica Decker  | 30       |
| Jason Hyde       | 50       |
| Odette Barker    | 31       |
| Oprah Buckner    | 31       |
| Amir Collier     | 48       |
| Cade Ewing       | 34       |
| Callie Moon      | 30       |
| Britanni Puckett | 32       |



| Question_1_3     |          |
|------------------|----------|
| ActorName        | ActorAge |
| Zelda Fry        | 50       |
| Maggy House      | 35       |
| Elliott Saunders | 49       |
| Noelle Dillard   | 38       |
| Donna Mullen     | 47       |
| Leonard Hickman  | 30       |
| Debra David      | 37       |
| Denton French    | 36       |
| Darius Becker    | 48       |
| Palmer Reyes     | 44       |
| Jared Larson     | 40       |
| Prescott McMahon | 45       |
| Chadwick Gardner | 47       |
| Galvin Merritt   | 32       |
| Dacey Mathis     | 40       |
| Hall Holt        | 50       |
| Willow Woods     | 32       |

**QUESTION 1.4**

| Question_1_4            |            |
|-------------------------|------------|
| ShowName                | TotalRoles |
| Comedy of Errors        | 16         |
| Henry V                 | 27         |
| King Lear               | 17         |
| Macbeth                 | 30         |
| Merchant of Venice      | 17         |
| Midsummer Night's Dream | 21         |
| Much Ado about Nothing  | 18         |
| Othello                 | 15         |
| Romeo and Juliet        | 23         |
| Twelfth Night           | 15         |
| Two Gentlemen of Verona | 15         |

**QUESTION 1.5**

*(No output)*

**QUESTION 1.6**

*(No output)*

### QUESTION 1.7

| Question_1_7 |             |
|--------------|-------------|
| ShowDate     | TotalIncome |
| 2013/11/03   | 83000       |
| 2013/11/04   | 87500       |
| 2013/11/08   | 65000       |
| 2013/11/09   | 70000       |
| 2013/11/12   | 75000       |
| 2013/11/20   | 275000      |
| 2013/11/22   | 90000       |
| 2013/11/24   | 180000      |

### QUESTION 1.8

| Question_1_8  |                      |
|---------------|----------------------|
| ShowName      | RoleName             |
| Twelfth Night | Sir Andrew Aguecheek |
| Henry V       | Sir Thomas Erpingham |
| Henry V       | Sir Thomas Grey      |
| Twelfth Night | Sir Toby Belch       |

### QUESTION 1.9

| Query1_9         |                         |          |
|------------------|-------------------------|----------|
| ActorName        | ShowName                | Expr1002 |
| Amir Collier     | Henry V                 | 3375     |
| Amir Collier     | King Lear               | 2237.5   |
| Amir Collier     | Macbeth                 | 2175     |
| Amir Collier     | Merchant of Venice      | 3487.5   |
| Amir Collier     | Midsummer Night's Dream | 2550     |
| Amir Collier     | Romeo and Juliet        | 2000     |
| Amir Collier     | Two Gentlemen of Verona | 2687.5   |
| Britanni Puckett | Comedy of Errors        | 1937.5   |
| Britanni Puckett | Henry V                 | 3375     |
| Britanni Puckett | King Lear               | 2237.5   |
| Britanni Puckett | Macbeth                 | 2175     |
| Britanni Puckett | Midsummer Night's Dream | 2550     |
| Britanni Puckett | Othello                 | 2375     |
| Britanni Puckett | Romeo and Juliet        | 2000     |
| Britanni Puckett | Twelfth Night           | 2000     |
| Britanni Puckett | Two Gentlemen of Verona | 2687.5   |
| Cade Ewing       | Henry V                 | 1237.5   |

| Query1_9         |                         |          |
|------------------|-------------------------|----------|
| ActorName        | ShowName                | Expr1002 |
| Cade Ewing       | King Lear               | 820.42   |
| Cade Ewing       | Macbeth                 | 797.5    |
| Cade Ewing       | Midsummer Night's Dream | 935      |
| Cade Ewing       | Othello                 | 870.83   |
| Cade Ewing       | Romeo and Juliet        | 733.33   |
| Cade Ewing       | Two Gentlemen of Verona | 985.42   |
| Callie Moon      | Comedy of Errors        | 968.75   |
| Callie Moon      | Henry V                 | 1687.5   |
| Callie Moon      | King Lear               | 1118.75  |
| Callie Moon      | Macbeth                 | 1087.5   |
| Callie Moon      | Midsummer Night's Dream | 1275     |
| Callie Moon      | Romeo and Juliet        | 1000     |
| Callie Moon      | Twelfth Night           | 1000     |
| Chadwick Gardner | Henry V                 | 1012.5   |
| Chadwick Gardner | King Lear               | 671.25   |
| Chadwick Gardner | Macbeth                 | 652.5    |
| Chadwick Gardner | Merchant of Venice      | 1046.25  |
| Chadwick Gardner | Romeo and Juliet        | 600      |
| Chadwick Gardner | Two Gentlemen of Verona | 806.25   |
| Clarke Stafford  | Comedy of Errors        | 968.75   |
| Clarke Stafford  | Macbeth                 | 1087.5   |
| Clarke Stafford  | Merchant of Venice      | 1743.75  |
| Clarke Stafford  | Midsummer Night's Dream | 1275     |
| Clarke Stafford  | Much Ado about Nothing  | 681.25   |
| Clarke Stafford  | Othello                 | 1187.5   |
| Clarke Stafford  | Two Gentlemen of Verona | 1343.75  |
| Dacey Mathis     | Comedy of Errors        | 968.75   |
| Dacey Mathis     | Henry V                 | 1687.5   |
| Dacey Mathis     | Macbeth                 | 1087.5   |
| Dacey Mathis     | Merchant of Venice      | 1743.75  |
| Dacey Mathis     | Much Ado about Nothing  | 681.25   |
| Dacey Mathis     | Othello                 | 1187.5   |
| Dacey Mathis     | Romeo and Juliet        | 1000     |
| Dacey Mathis     | Twelfth Night           | 1000     |
| Darius Becker    | Henry V                 | 1237.5   |
| Darius Becker    | King Lear               | 820.42   |
| Darius Becker    | Macbeth                 | 797.5    |
| Darius Becker    | Merchant of Venice      | 1278.75  |
| Darius Becker    | Midsummer Night's Dream | 935      |
| Darius Becker    | Romeo and Juliet        | 733.33   |
| Darius Becker    | Twelfth Night           | 733.33   |
| Darius Becker    | Two Gentlemen of Verona | 985.42   |

| Query1_9         |                         |          |
|------------------|-------------------------|----------|
| ActorName        | ShowName                | Expr1002 |
| Debra David      | Comedy of Errors        | 710.42   |
| Debra David      | Henry V                 | 1237.5   |
| Debra David      | King Lear               | 820.42   |
| Debra David      | Macbeth                 | 797.5    |
| Debra David      | Merchant of Venice      | 1278.75  |
| Debra David      | Midsummer Night's Dream | 935      |
| Debra David      | Romeo and Juliet        | 733.33   |
| Denton French    | Comedy of Errors        | 1937.5   |
| Denton French    | Henry V                 | 3375     |
| Denton French    | King Lear               | 2237.5   |
| Denton French    | Macbeth                 | 2175     |
| Denton French    | Merchant of Venice      | 3487.5   |
| Denton French    | Midsummer Night's Dream | 2550     |
| Denton French    | Much Ado about Nothing  | 1362.5   |
| Denton French    | Romeo and Juliet        | 2000     |
| Denton French    | Twelfth Night           | 2000     |
| Denton French    | Two Gentlemen of Verona | 2687.5   |
| Donna Mullen     | Comedy of Errors        | 1937.5   |
| Donna Mullen     | Henry V                 | 3375     |
| Donna Mullen     | King Lear               | 2237.5   |
| Donna Mullen     | Macbeth                 | 2175     |
| Donna Mullen     | Midsummer Night's Dream | 2550     |
| Donna Mullen     | Much Ado about Nothing  | 1362.5   |
| Donna Mullen     | Othello                 | 2375     |
| Donna Mullen     | Romeo and Juliet        | 2000     |
| Donna Mullen     | Two Gentlemen of Verona | 2687.5   |
| Ebony Sweeney    | Henry V                 | 1350     |
| Ebony Sweeney    | Macbeth                 | 870      |
| Ebony Sweeney    | Midsummer Night's Dream | 1020     |
| Ebony Sweeney    | Much Ado about Nothing  | 545      |
| Ebony Sweeney    | Romeo and Juliet        | 800      |
| Elliott Saunders | Henry V                 | 1687.5   |
| Elliott Saunders | King Lear               | 1118.75  |
| Elliott Saunders | Macbeth                 | 1087.5   |
| Elliott Saunders | Merchant of Venice      | 1743.75  |
| Elliott Saunders | Midsummer Night's Dream | 1275     |
| Elliott Saunders | Much Ado about Nothing  | 681.25   |
| Elliott Saunders | Othello                 | 1187.5   |
| Galvin Merritt   | Comedy of Errors        | 968.75   |
| Galvin Merritt   | Henry V                 | 1687.5   |
| Galvin Merritt   | King Lear               | 1118.75  |
| Galvin Merritt   | Macbeth                 | 1087.5   |

| Query1_9        |                         |          |
|-----------------|-------------------------|----------|
| ActorName       | ShowName                | Expr1002 |
| Galvin Merritt  | Merchant of Venice      | 1743.75  |
| Galvin Merritt  | Midsummer Night's Dream | 1275     |
| Galvin Merritt  | Othello                 | 1187.5   |
| Galvin Merritt  | Two Gentlemen of Verona | 1343.75  |
| Garth York      | Comedy of Errors        | 1162.5   |
| Garth York      | Henry V                 | 2025     |
| Garth York      | Macbeth                 | 1305     |
| Garth York      | Merchant of Venice      | 2092.5   |
| Garth York      | Midsummer Night's Dream | 1530     |
| Garth York      | Much Ado about Nothing  | 817.5    |
| Garth York      | Othello                 | 1425     |
| Garth York      | Twelfth Night           | 1200     |
| Garth York      | Two Gentlemen of Verona | 1612.5   |
| Hall Holt       | Comedy of Errors        | 1162.5   |
| Hall Holt       | Macbeth                 | 1305     |
| Hall Holt       | Midsummer Night's Dream | 1530     |
| Hall Holt       | Othello                 | 1425     |
| Hall Holt       | Romeo and Juliet        | 1200     |
| Hall Holt       | Twelfth Night           | 1200     |
| Jared Larson    | Henry V                 | 1350     |
| Jared Larson    | King Lear               | 895      |
| Jared Larson    | Macbeth                 | 870      |
| Jared Larson    | Merchant of Venice      | 1395     |
| Jared Larson    | Midsummer Night's Dream | 1020     |
| Jared Larson    | Romeo and Juliet        | 800      |
| Jared Larson    | Two Gentlemen of Verona | 1075     |
| Jason Hyde      | Comedy of Errors        | 581.25   |
| Jason Hyde      | Henry V                 | 1012.5   |
| Jason Hyde      | Macbeth                 | 652.5    |
| Jason Hyde      | Merchant of Venice      | 1046.25  |
| Jason Hyde      | Much Ado about Nothing  | 408.75   |
| Jason Hyde      | Twelfth Night           | 600      |
| Leonard Hickman | Comedy of Errors        | 968.75   |
| Leonard Hickman | Henry V                 | 1687.5   |
| Leonard Hickman | Macbeth                 | 1087.5   |
| Leonard Hickman | Much Ado about Nothing  | 681.25   |
| Leonard Hickman | Romeo and Juliet        | 1000     |
| Maggy House     | Henry V                 | 2475     |
| Maggy House     | King Lear               | 1640.83  |
| Maggy House     | Macbeth                 | 1595     |
| Maggy House     | Much Ado about Nothing  | 999.17   |
| Maggy House     | Othello                 | 1741.67  |

| <b>Query1_9</b>  |                         |                 |
|------------------|-------------------------|-----------------|
| <b>ActorName</b> | <b>ShowName</b>         | <b>Expr1002</b> |
| Maggy House      | Romeo and Juliet        | 1466.67         |
| Maggy House      | Twelfth Night           | 1466.67         |
| Mary Rocha       | Henry V                 | 3375            |
| Mary Rocha       | King Lear               | 2237.5          |
| Mary Rocha       | Macbeth                 | 2175            |
| Mary Rocha       | Merchant of Venice      | 3487.5          |
| Mary Rocha       | Midsummer Night's Dream | 2550            |
| Mary Rocha       | Much Ado about Nothing  | 1362.5          |
| Mary Rocha       | Othello                 | 2375            |
| Mary Rocha       | Romeo and Juliet        | 2000            |
| Noelle Dillard   | Henry V                 | 2475            |
| Noelle Dillard   | King Lear               | 1640.83         |
| Noelle Dillard   | Macbeth                 | 1595            |
| Noelle Dillard   | Midsummer Night's Dream | 1870            |
| Noelle Dillard   | Much Ado about Nothing  | 999.17          |
| Noelle Dillard   | Othello                 | 1741.67         |
| Noelle Dillard   | Romeo and Juliet        | 1466.67         |
| Noelle Dillard   | Two Gentlemen of Verona | 1970.83         |
| Odette Barker    | Comedy of Errors        | 581.25          |
| Odette Barker    | Henry V                 | 1012.5          |
| Odette Barker    | Macbeth                 | 652.5           |
| Odette Barker    | Midsummer Night's Dream | 765             |
| Odette Barker    | Much Ado about Nothing  | 408.75          |
| Odette Barker    | Romeo and Juliet        | 600             |
| Odette Barker    | Twelfth Night           | 600             |
| Oprah Buckner    | Henry V                 | 2475            |
| Oprah Buckner    | King Lear               | 1640.83         |
| Oprah Buckner    | Macbeth                 | 1595            |
| Oprah Buckner    | Midsummer Night's Dream | 1870            |
| Oprah Buckner    | Much Ado about Nothing  | 999.17          |
| Oprah Buckner    | Romeo and Juliet        | 1466.67         |
| Oprah Buckner    | Twelfth Night           | 1466.67         |
| Palmer Reyes     | Henry V                 | 1237.5          |
| Palmer Reyes     | Macbeth                 | 797.5           |
| Palmer Reyes     | Merchant of Venice      | 1278.75         |
| Palmer Reyes     | Midsummer Night's Dream | 935             |
| Palmer Reyes     | Much Ado about Nothing  | 499.58          |
| Palmer Reyes     | Twelfth Night           | 733.33          |
| Palmer Reyes     | Two Gentlemen of Verona | 985.42          |
| Prescott McMahon | Henry V                 | 2025            |
| Prescott McMahon | Macbeth                 | 1305            |
| Prescott McMahon | Merchant of Venice      | 2092.5          |

| Query1_9         |                         |          |
|------------------|-------------------------|----------|
| ActorName        | ShowName                | Expr1002 |
| Prescott McMahan | Much Ado about Nothing  | 817.5    |
| Prescott McMahan | Romeo and Juliet        | 1200     |
| Prescott McMahan | Twelfth Night           | 1200     |
| Prescott McMahan | Two Gentlemen of Verona | 1612.5   |
| Summer Dickson   | Comedy of Errors        | 710.42   |
| Summer Dickson   | Macbeth                 | 797.5    |
| Summer Dickson   | Merchant of Venice      | 1278.75  |
| Summer Dickson   | Much Ado about Nothing  | 499.58   |
| Summer Dickson   | Othello                 | 870.83   |
| Summer Dickson   | Romeo and Juliet        | 733.33   |
| Veronica Decker  | Comedy of Errors        | 387.5    |
| Veronica Decker  | Henry V                 | 675      |
| Veronica Decker  | Macbeth                 | 435      |
| Veronica Decker  | Much Ado about Nothing  | 272.5    |
| Veronica Decker  | Othello                 | 475      |
| Veronica Decker  | Twelfth Night           | 400      |
| Willow Woods     | Comedy of Errors        | 968.75   |
| Willow Woods     | Henry V                 | 1687.5   |
| Willow Woods     | Macbeth                 | 1087.5   |
| Willow Woods     | Othello                 | 1187.5   |
| Willow Woods     | Romeo and Juliet        | 1000     |
| Zelda Fry        | Henry V                 | 1012.5   |
| Zelda Fry        | King Lear               | 671.25   |
| Zelda Fry        | Macbeth                 | 652.5    |
| Zelda Fry        | Merchant of Venice      | 1046.25  |
| Zelda Fry        | Midsummer Night's Dream | 765      |
| Zelda Fry        | Romeo and Juliet        | 600      |
| Zelda Fry        | Twelfth Night           | 600      |
| Zelda Fry        | Two Gentlemen of Verona | 806.25   |

**SECTION B OBJECT ORIENTED PROGRAMMING**

**FINAL OUTPUT:**

All Bookings

|     |        |    |                         |
|-----|--------|----|-------------------------|
| A1  | R200.0 | Pd |                         |
| A2  | R200.0 | Pd |                         |
| A3  | R200.0 | Pd |                         |
| A5  | R200.0 | Pd |                         |
| A6  | R200.0 | Pd |                         |
| A7  | R200.0 |    |                         |
| A8  | R200.0 | Pd |                         |
| A9  | R200.0 | Pd |                         |
| A10 | R200.0 |    |                         |
| A11 | R200.0 | Pd |                         |
| A12 | R200.0 | Pd |                         |
| A13 | R200.0 | Pd |                         |
| A14 | R200.0 | Pd |                         |
| A15 | R200.0 |    |                         |
| B1  | R140.0 | Pd | Kolby Girls High School |
| B2  | R140.0 | Pd | Kolby Girls High School |
| B3  | R140.0 | Pd | Kolby Girls High School |
| B4  | R140.0 | Pd | Kolby Girls High School |
| B5  | R140.0 | Pd | Kolby Girls High School |
| B6  | R140.0 | Pd | Kolby Girls High School |
| B7  | R140.0 | Pd | Kolby Girls High School |
| B8  | R140.0 | Pd | Kolby Girls High School |
| B9  | R140.0 | Pd | Kolby Girls High School |
| B10 | R140.0 | Pd | Kolby Girls High School |
| B11 | R140.0 | Pd | Kolby Girls High School |
| B12 | R140.0 | Pd | Kolby Girls High School |
| C2  | R200.0 |    |                         |
| C3  | R200.0 |    |                         |
| C4  | R200.0 | Pd |                         |
| C5  | R200.0 |    |                         |
| C6  | R200.0 | Pd |                         |
| C7  | R200.0 | Pd |                         |
| C8  | R200.0 | Pd |                         |
| C10 | R200.0 |    |                         |
| C11 | R200.0 | Pd |                         |
| C14 | R200.0 |    |                         |
| D2  | R140.0 |    | Knysna Retirement Home  |
| D3  | R140.0 |    | Knysna Retirement Home  |
| D4  | R140.0 |    | Knysna Retirement Home  |
| D5  | R140.0 |    | Knysna Retirement Home  |
| D6  | R140.0 |    | Knysna Retirement Home  |
| D7  | R140.0 |    | Knysna Retirement Home  |
| D8  | R140.0 |    | Knysna Retirement Home  |
| D9  | R140.0 |    | Knysna Retirement Home  |
| D10 | R140.0 |    | Knysna Retirement Home  |
| D11 | R140.0 |    | Knysna Retirement Home  |
| D12 | R140.0 |    | Knysna Retirement Home  |
| D13 | R140.0 |    | Knysna Retirement Home  |
| D14 | R140.0 |    | Knysna Retirement Home  |
| D15 | R140.0 |    | Knysna Retirement Home  |
| E1  | R160.0 | Pd |                         |
| E3  | R160.0 | Pd |                         |
| E5  | R160.0 | Pd |                         |
| E6  | R160.0 | Pd |                         |
| E7  | R160.0 |    |                         |
| E8  | R160.0 |    |                         |
| E9  | R160.0 | Pd |                         |
| E10 | R160.0 |    |                         |
| E11 | R160.0 |    |                         |
| E12 | R160.0 | Pd |                         |
| E13 | R160.0 |    |                         |
| E14 | R160.0 |    |                         |
| F1  | R160.0 |    |                         |
| F2  | R120.0 | Pd | Witbank Hockey Club     |
| F3  | R120.0 | Pd | Witbank Hockey Club     |
| F4  | R120.0 | Pd | Witbank Hockey Club     |
| F5  | R120.0 | Pd | Witbank Hockey Club     |
| F6  | R120.0 | Pd | Witbank Hockey Club     |
| F7  | R120.0 | Pd | Witbank Hockey Club     |
| F8  | R120.0 | Pd | Witbank Hockey Club     |
| F9  | R120.0 | Pd | Witbank Hockey Club     |
| F10 | R120.0 | Pd | Witbank Hockey Club     |
| F11 | R160.0 |    |                         |
| F12 | R160.0 | Pd |                         |
| F14 | R160.0 |    |                         |
| F15 | R160.0 | Pd |                         |
| G3  | R100.0 | Pd | Mellville Boy Scouts    |
| G4  | R100.0 | Pd | Mellville Boy Scouts    |
| G5  | R100.0 | Pd | Mellville Boy Scouts    |
| G6  | R100.0 | Pd | Mellville Boy Scouts    |
| G7  | R100.0 | Pd | Mellville Boy Scouts    |
| G8  | R100.0 | Pd | Mellville Boy Scouts    |



|     |        |    |                         |
|-----|--------|----|-------------------------|
| G9  | R100.0 | Pd | Mellville Boy Scouts    |
| G10 | R100.0 | Pd | Mellville Boy Scouts    |
| G11 | R100.0 | Pd | Mellville Boy Scouts    |
| G12 | R100.0 | Pd | Mellville Boy Scouts    |
| G13 | R100.0 | Pd | Mellville Boy Scouts    |
| G14 | R100.0 | Pd | Mellville Boy Scouts    |
| G15 | R100.0 | Pd | Mellville Boy Scouts    |
| H1  | R160.0 |    |                         |
| H2  | R160.0 |    |                         |
| H3  | R160.0 |    |                         |
| H5  | R160.0 |    |                         |
| H6  | R160.0 |    |                         |
| H7  | R160.0 |    |                         |
| H8  | R160.0 |    |                         |
| H9  | R160.0 |    |                         |
| H10 | R160.0 |    |                         |
| H11 | R160.0 |    |                         |
| H12 | R160.0 |    |                         |
| H13 | R160.0 |    |                         |
| H14 | R160.0 |    |                         |
| I1  | R120.0 |    |                         |
| I3  | R120.0 | Pd |                         |
| I4  | R120.0 |    |                         |
| I5  | R120.0 |    |                         |
| I6  | R120.0 | Pd |                         |
| I7  | R120.0 |    |                         |
| I9  | R120.0 | Pd |                         |
| I10 | R120.0 | Pd |                         |
| I11 | R120.0 | Pd |                         |
| I12 | R120.0 | Pd |                         |
| I13 | R120.0 | Pd |                         |
| J1  | R60.0  |    | Cape Town Drama Society |
| J2  | R60.0  |    | Cape Town Drama Society |
| J3  | R60.0  |    | Cape Town Drama Society |
| J4  | R60.0  |    | Cape Town Drama Society |
| J5  | R60.0  |    | Cape Town Drama Society |
| J6  | R60.0  |    | Cape Town Drama Society |
| J7  | R60.0  |    | Cape Town Drama Society |
| J8  | R60.0  |    | Cape Town Drama Society |
| J9  | R60.0  |    | Cape Town Drama Society |
| J10 | R60.0  |    | Cape Town Drama Society |
| J11 | R60.0  |    | Cape Town Drama Society |
| J12 | R60.0  |    | Cape Town Drama Society |
| J13 | R60.0  |    | Cape Town Drama Society |
| J14 | R60.0  |    | Cape Town Drama Society |
| K1  | R60.0  | Pd | Durban Gentleman's Club |
| K2  | R60.0  | Pd | Durban Gentleman's Club |
| K3  | R60.0  | Pd | Durban Gentleman's Club |
| K4  | R60.0  | Pd | Durban Gentleman's Club |
| K5  | R60.0  | Pd | Durban Gentleman's Club |
| K6  | R60.0  | Pd | Durban Gentleman's Club |
| K7  | R60.0  | Pd | Durban Gentleman's Club |
| K8  | R60.0  | Pd | Durban Gentleman's Club |
| K9  | R60.0  | Pd | Durban Gentleman's Club |
| K10 | R60.0  | Pd | Durban Gentleman's Club |
| K11 | R60.0  | Pd | Durban Gentleman's Club |
| K12 | R60.0  | Pd | Durban Gentleman's Club |
| K13 | R60.0  | Pd | Durban Gentleman's Club |
| K14 | R60.0  | Pd | Durban Gentleman's Club |
| K15 | R60.0  | Pd | Durban Gentleman's Club |
| L4  | R120.0 | Pd |                         |
| L6  | R120.0 | Pd |                         |
| L7  | R120.0 |    |                         |
| L8  | R120.0 |    |                         |
| L9  | R120.0 |    |                         |

Group Bookings

-----  
 Kolby Girls High School  
 Knysna Retirement Home  
 Witbank Hockey Club  
 Mellville Boy Scouts  
 Cape Town Drama Society  
 Durban Gentleman's Club

Outstanding Payments

-----  
Outstanding Payments : R 8760.0

Empty Seats

-----  
A4 B13 B14 B15 C1 C9 C12 C13 C15 D1 E2 E4 E15 F13 G1 G2 H4 H15 I2 I8 I14 I15 J15 L1 L2 L3 L5 L10  
L11 L12 L13 L14 L15