PROGRAMME :
DIPLOMA IN INFORMATION TECHNOLOGY
(DIGITAL TECHNOLOGY)(DDT)

COURSE:
DFP30243 - OBJECT ORIENTED PROGRAMMING

ASSESMENT	PROBLEM BASED TASK (PBT)	
NO	REGISTRATION NO	NAME
1.	32DDT20F2003	KHAIRUNNISA ISMA BINTI AB MAJIT
2.	32DDT20F2005	BUNGA SYAZWANIE BINTI MD TARMIZIE
3.	32DDT20F2029	MUHAMMAD AFIQ MUHAIMIN BIN MOHD ZAINI
PROGRAMME	DDT3 (DDT3A)	

INSTRUCTIONS :

- Answer **ALL** the questions.
- Submission Date : ……………………………………………………

CODE / COURSE	DFP30243 – OBJECT ORIENTED PROGRAMMING	PROBLEM BASED TASK	1	
PROGRAM / CLASS	DDT3A	DURATION	10 HOURS	
STUDENT'S NAME	KHAIRUNNISA ISMA BINTI AB MAJIT BUNGA SYAZWANIE BINTI MD TARMIZIE MUHAMMAD AFIQ MUHAIMIN BIN MOHD ZAINI	CLO	1P	
REG. NO.	32DDT20F2003 32DDT20F2005 32DDT20F2029	TOTAL MARKS		
LECTURER'S NAME	PN. HAZLEENA BINTI OSMAN / PN. RODZIAH BINTI IBRAHIM / PN SHARIZAN BINTI ABDUL JAMIL / CIK NURAINI BINTI SHAMSAIMON			/36

CLO1P: Construct Object Oriented Programming concept and exception handling in Java programming.

Learning outcomes:
Upon completion of this problem-based task, students should be able to:
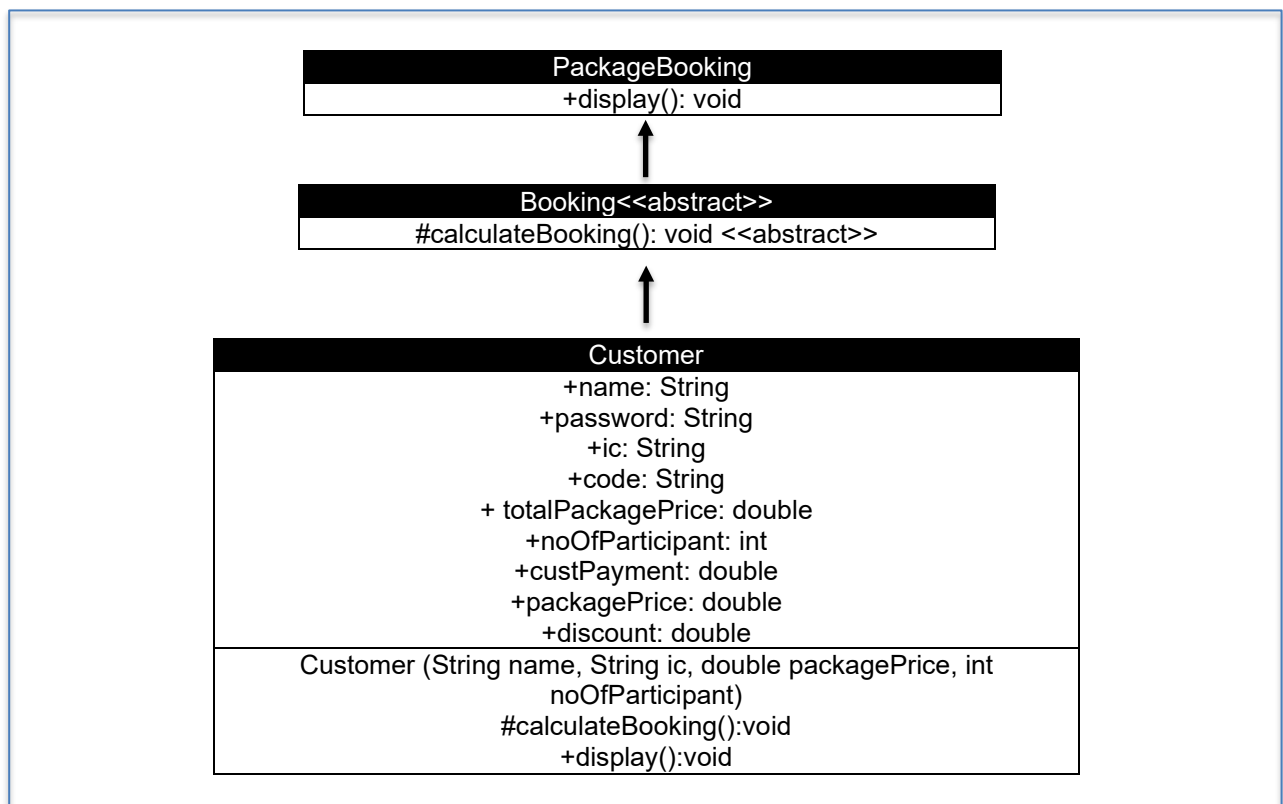1. Describe general UML elements.
2. Construct input and output statement in Java programs
3. Build java programs using variables, operators, and Input/ Output Streams.
4. Build program using branching statements
5. Build an object in Java programs
6. Manipulate inheritance using 'extends' keyword.
7. Identify base and derived class.
8. Build the protected access specifier.
9. Construct overriding method
10. Construct abstract classes.
11. Build Java programs using exception handling.

INSTRUCTION: Answer the question below.

*In a group of 2-3 students, develop a Java system to **calculate payment for Paradise Resort And Training Centre Booking System** based on **Figure 1: Class Diagram** and **Figure 2: Package Rate Details.***

System Requirements:

1. Log in into the system-using password: P@Qwerty$123. (Show payment receipt header after successful authentication or the application will exit if user key in the wrong password)
2. Input customer name and IC using BufferedReader.
3. Input **code of package type** (if user enter wrong code, prompt user to key-in the code again)
4. Input number of teambuilding participants (if user enter an invalid input, the system will handle the error by using exception handling)
5. Calculate totalPackagePrice by multiply package price and number of teambuilding participants
6. Calculate **30% discount** if number of teambuilding participants is **more than 80 persons**.
7. Calculate totalPackagePrice after discount by substracting totalPackagePrice and discount.
8. Input payment from customer (if user enter an invalid input, the system will handle the error by using exception handling)
9. Calculate balance for customer.
10. Construct exception handling to handle the exception.

PackageBooking
+display(): void

↑

Booking<>
#calculateBooking(): void <>

↑

Customer
+name: String
+password: String
+ic: String
+code: String
+ totalPackagePrice: double
+noOfParticipant: int
+custPayment: double
+packagePrice: double
+discount: double
Customer (String name, String ic, double packagePrice, int noOfParticipant) #calculateBooking():void +display():void

Figure 1

Code.	Teambuilding Package	Price (RM) /Per Pax	
001	Government	150.00	Discount 30% Booking more than 80 person
002	Corporate	230.00	
003	VIP	330.00	

Figure 2

Hint:

1) Apply an **overriding** concept in the program. Display () method on super class will be printed the payment receipt header. Display () method on child class will be printed receipt details.
2) Locate the main method in the Customer class to access the properties in their parent class using access specifier protected.

Sample Output:

1. If user enter correct password

```
General Output
--------------------Configuration: <Default>--------------------
**********WELCOME TO PARADISE RESORT & TRAINING CENTRE****************
Enter your password :P@Qwerty$123

*************************************************
      Paradise Resort & Training Centre
         Batu Feringgi, Pulau Pinang
        TEL: 04-77777777 FAX: 04-77777711
*************************************************
*************************************************
CODE            PACKAGE            PRICE
*************************************************
001             GOVERNMENT         RM150/Pax
002             CORPORATE          RM230/Pax
003             VIP                RM330/Pax
*************************************************
            PROMOTION
   BOOKING MORE THAN 80 PAX GET 30% DISCOUNT
*************************************************

**********ENTER YOUR DETAILS****************
Customer name :|
```

2. If user enter incorrect password

```
General Output
--------------------Configuration: <Default>--------------------
**********WELCOME TO PARADISE RESORT & TRAINING CENTRE****************
Enter your password :dd
You have entered wrong password!! try again

Process completed.
```

3. If user enter wrong input format for "No. Of Pax", system will handle the error by using exception handling

```
General Output
---------------------Configuration: <Default>---------------------
**********WELCOME TO PARADISE RESORT & TRAINING CENTRE****************
Enter your password :P@Qwerty$123

*********************************************
      Paradise Resort & Training Centre
           Batu Feringgi, Pulau Pinang
        TEL: 04-77777777 FAX: 04-77777711
*********************************************
*********************************************
CODE            PACKAGE             PRICE
*********************************************
001             GOVERNMENT          RM150/Pax
002             CORPORATE           RM230/Pax
003             VIP                 RM330/Pax
*********************************************
                PROMOTION
  BOOKING MORE THAN 80 PAX GET 30% DISCOUNT
*********************************************

***********ENTER YOUR DETAILS****************
Customer name :HAZLEENA
Customer IC:900121028888
001 - Government
002 - Corporate
003 - VIP
Enter Your Package Code:
002
Enter No. Of Pax :
EIGHTY
You had key-in is non-numeric format

Process completed.
```

4. **If user enter wrong input format for payment the system will handle the error by using exception handling**

```
General Output
--------------------Configuration: <Default>--------------------
**********WELCOME TO PARADISE RESORT & TRAINING CENTRE****************
Enter your password :P@Qwerty$123

*********************************************
      Paradise Resort & Training Centre
           Batu Feringgi, Pulau Pinang
        TEL: 04-77777777 FAX: 04-77777711
*********************************************
*********************************************
CODE            PACKAGE             PRICE
*********************************************
001             GOVERNMENT          RM150/Pax
002             CORPORATE           RM230/Pax
003             VIP                 RM330/Pax
*********************************************
                PROMOTION
  BOOKING MORE THAN 80 PAX GET 30% DISCOUNT
*********************************************

***********ENTER YOUR DETAILS****************
Customer name :HAZLEENA
Customer IC:900121-02-8888
001 - Government
002 - Corporate
003 - VIP
Enter Your Package Code:
003
Enter No. Of Pax :
80
Your booking price is  RM 26400.0
Make Payment:THIRTY THOUSAND
You had key-in is non-numeric format

Process completed.
```

5. **If user enter all input correctly**

```
ieneral Output
-------------------Configuration: <Default>-------------------
************WELCOME TO PARADISE RESORT & TRAINING CENTRE***************
Enter your password :P@Qwerty$123

************************************************
       Paradise Resort & Training Centre
          Batu Feringgi, Pulau Pinang
       TEL: 04-77777777 FAX: 04-77777711
************************************************
CODE         PACKAGE            PRICE
************************************************
001          GOVERNMENT         RM150/Pax
002          CORPORATE          RM230/Pax
003          VIP                RM330/Pax
************************************************
              PROMOTION
   BOOKING MORE THAN 80 PAX GET 30% DISCOUNT
************************************************

************ENTER YOUR DETAILS***************
Customer name :HAZLEENA
Customer IC:900121-02-8888
001 - Government
002 - Corporate
003 - VIP
Enter Your Package Code:
001
Enter No. Of Pax :
90
You're eligible for 30% discount
Your booking price after discount is :RM 9450.0
Make Payment:10000.00

************RECEIPT***************
NAME          :HAZLEENA
IC            :900121-02-8888
NO. OF PAX    :90 person
TOTAL PRICE :RM 9450.0
PAYMENT       :RM 10000.0
BALANCE       :RM 550.0
************THANK YOU**************

Process completed.
```

Submission:

1. Your PBT Report **softcopy (Word Document)** must consists of:
   a. Front page
   b. Source code
   c. Receipt Snapshot for **each Type of Room**
   d. YouTube link/Video (PBT Presentation)

2. Upload **softcopy PBT Report and source code(.java files)** to CIDOS

(36 Marks-Report, 20 Marks-PBT Presentation)

CLO	Criteria (PBT)	Marks	Total Marks
CLO1P	(A) Analyzing Information (Class Diagram)	/4	/36
	(B) Problem Solving	/4	
	(C) Build program using branching statements (Login & Package Choice)	/4	
	(D) Polymorphism Concept (Overriding)	/4	
	(E) Inheritance Concept (Multilevel Inheritance)	/4	
	(F) Abstract Class and Method	/4	
	(G) Exception Handling	/4	
	(H) Efficiency and Output	/4	
	(I) Documentation	/4	
CLO	Criteria (PBT Presentation)	Marks	Total Marks

CLO3A	Visual Appeal (Presentation Slide) (Presentation Slide)	/4	/20
	Comprehension	/4	
	Presentation Skills	/4	
	Content	/4	
	Preparedness/Participation/Group Dynamics	/4	

Evaluation:

```java
PackageBooking.java > Customer > main(String[])
1    import java.io.*;
2
3    class PackageBooking {
4        void display() {
5            System.out.println(x: "---------------------------------------------");
6            System.out.println(x: "Paradise Resort & Training Centre");
7            System.out.println(x: "Kuala Terengganu, Terengganu");
8            System.out.println(x: "---------------------------------------------");
9            System.out.println(x: "+------+-------------+----------+");
10           System.out.println(x: "| Code |   Package   |  Price   |");
11           System.out.println(x: "+------+-------------+----------+");
12           System.out.println(x: "|  001 | Government  | RM150/Pax |");
13           System.out.println(x: "|  002 | Corporate   | RM230/Pax |");
14           System.out.println(x: "|  003 | VIP         | RM330/Pax |");
15           System.out.println(x: "+------+-------------+----------+");
16           System.out.println(x: "---------------------------------------------------");
17           System.out.println(x: "\t\tPromotion");
18           System.out.println(x: "Booking more than 80 person will get 30% discount");
19           System.out.println(x: "---------------------------------------------------");
20           System.out.println(x: "------------------Enter Your Details-------------");
21       }
22   }
23
24   abstract class Booking extends PackageBooking {
25       abstract void calculateBooking();
26   }
27
28   class Customer extends Booking {
29       public static String name, password, ic, code;
30       public static int noOfParticipants;
31       public static double totalPackagePrice, custPayment, packagePrice, discount;
32
33       Customer(String name, String ic, double packagePrice, int noOfParticipant) {
34           this.name = name;
35           this.ic = ic;
36           this.packagePrice = packagePrice;
37           this.noOfParticipants = noOfParticipants;
38       }
39
```

```java
39
40    protected void calculateBooking() {
41        totalPackagePrice = packagePrice * noOfParticipants;
42        if (noOfParticipants >= 80) {
43            System.out
44                    .println(x: "Because you're checking for more then 80 participants, you're eligible for 30% discount");
45            discount = totalPackagePrice * (30 / 100);
46            System.out.println("Your total price after discount is RM " + (totalPackagePrice - discount));
47        } else {
48            System.out.println(x: "You're not eligible for 30% discount");
49            System.out.println("Your total price is RM " + totalPackagePrice);
50        }
51    }
52
53    public void display() {
54        System.out.println(x: "-------------RECIEPT----------------");
55        System.out.println("Name: " + name);
56        System.out.println("IC: " + ic);
57        System.out.println("No of participants: " + noOfParticipants);
58        System.out.println("Total package price: RM" + totalPackagePrice);
59        System.out.println("Customer payment: RM" + custPayment);
60        System.out.println("Balance that customer need to pay: RM" + (totalPackagePrice - custPayment));
61        System.out.println(x: "-------------THANK YOU----------------");
62    }
63
      Run | Debug
64    public static void main(String finalassignment[]) throws IOException {
65        BufferedReader input = new BufferedReader(new InputStreamReader(System.in));
66        Customer cus = new Customer(name, ic, packagePrice, noOfParticipants);
67        System.out.println(x: "Welcome to Paradise Resort and Training Centre");
68        System.out.println(x: "Please enter your password to continue: ");
69        password = input.readLine();
70        if (password.equals(anObject: "P@Qwerty$123")) {
71            PackageBooking pb = new PackageBooking();
72            pb.display();
73            System.out.println(x: "Customer Name: ");
74            name = input.readLine();
75            System.out.println(x: "Customer's IC Number: ");
76            ic = input.readLine();
77            System.out.println(x: "001 - Government");
78            System.out.println(x: "002 - Corporate");
79            System.out.println(x: "003 - VIP");
80            System.out.println(x: "Please enter your package code:");
81            code = input.readLine();
```

```java
        } else {
            System.out.println(x: "Sorry, you entered the wrong password");
        }
        try {
            if (code.equals(anObject: "001")) {
                packagePrice = 150;
                System.out.println(x: "Enter pax of participants: ");
                noOfParticipants = Integer.parseInt(input.readLine());
                cus.calculateBooking();
                System.out.println(x: "Payment Amount: RM");
                custPayment = Double.parseDouble(input.readLine());
                cus.display();
            } else if (code.equals(anObject: "002")) {
                packagePrice = 230;
                System.out.println(x: "Enter pax of participants: ");
                noOfParticipants = Integer.parseInt(input.readLine());
                cus.calculateBooking();
                System.out.println(x: "Payment Amount: RM");
                custPayment = Double.parseDouble(input.readLine());
                cus.display();
            } else if (code.equals(anObject: "003")) {
                packagePrice = 330;
                System.out.println(x: "Enter pax of participants: ");
                noOfParticipants = Integer.parseInt(input.readLine());
                cus.calculateBooking();
                System.out.println(x: "Payment Amount: RM");
                custPayment = Double.parseDouble(input.readLine());
                cus.display();
            } else {
                System.out.println(x: "Sorry, you have entered the wrong code. Please check again");
            }

        } catch (NumberFormatException wrongcode) {
            System.out.println(x: "You have entered a non numeric format word. Please check again");
        }
    }
}
```

OUTPUT:

- **If user enter correct password**

```
Welcome to Paradise Resort and Training Centre
Please enter your password to continue:
P@Qwerty$123
------------------------------------------------
Paradise Resort & Training Centre
Kuala Terengganu, Terengganu
------------------------------------------------

+------+-------------+-----------+
| Code |   Package   |   Price   |
+------+-------------+-----------+
|  001 | Government  | RM150/Pax |
|  002 | Corporate   | RM230/Pax |
|  003 | VIP         | RM330/Pax |
+------+-------------+-----------+
------------------------------------------------
                 Promotion
Booking more than 80 person will get 30% discount
------------------------------------------------
------------------Enter Your Details-------------
Customer Name:
```

- **If user enter password incorrectly**

```
∨ TERMINAL

  Welcome to Paradise Resort and Training Centre
  Please enter your password to continue:
  danielhensem
  Sorry, you entered the wrong password
```

- **If user enter wrong input format for "No. Of Pax", system will handle the error by using exception handling**

```
Welcome to Paradise Resort and Training Centre
Please enter your password to continue:
P@Qwerty$123
----------------------------------------------
Paradise Resort & Training Centre
Kuala Terengganu, Terengganu
----------------------------------------------

+------+-------------+-----------+
| Code |   Package   |   Price   |
+------+-------------+-----------+
|  001 | Government  | RM150/Pax |
|  002 | Corporate   | RM230/Pax |
|  003 | VIP         | RM330/Pax |
+------+-------------+-----------+
----------------------------------------------------
                  Promotion
Booking more than 80 person will get 30% discount
----------------------------------------------------
--------------------Enter Your Details-------------
Customer Name:
Borobob
Customer's IC Number:
227766001212
```

```
001 - Government
002 - Corporate
003 - VIP
Please enter your package code:
002
Enter pax of participants:
EIGHTY
You have entered a non numeric format word. Please check again
```

- **If user enter wrong input format for payment the system will handle the error by using exception handling**

```
Welcome to Paradise Resort and Training Centre
Please enter your password to continue:
P@Qwerty$123
---------------------------------------------
Paradise Resort & Training Centre
Kuala Terengganu, Terengganu
---------------------------------------------
+------+-------------+-----------+
| Code |   Package   |   Price   |
+------+-------------+-----------+
|  001 | Government  | RM150/Pax |
|  002 | Corporate   | RM230/Pax |
|  003 | VIP         | RM330/Pax |
+------+-------------+-----------+
---------------------------------------------------
                 Promotion
Booking more than 80 person will get 30% discount
---------------------------------------------------
------------------Enter Your Details-------------
Customer Name:
Ema Cute
Customer's IC Number:
332244007788
```

```
001 - Government
002 - Corporate
003 - VIP
Please enter your package code:
002
Enter pax of participants:
80
Because you're checking for more then 80 participants, you're eligible for 30% discount
Your total price after discount is RM 18400.0
Payment Amount: RM
TWENTY THOUSAND
You have entered a non numeric format word. Please check again
```

- **If user enter all input correctly (Government)**

```
Welcome to Paradise Resort and Training Centre
Please enter your password to continue:
P@Qwerty$123
---------------------------------------------
Paradise Resort & Training Centre
Kuala Terengganu, Terengganu
---------------------------------------------
+------+------------+----------+
| Code |   Package  |   Price  |
+------+------------+----------+
|  001 | Government | RM150/Pax |
|  002 | Corporate  | RM230/Pax |
|  003 | VIP        | RM330/Pax |
+------+------------+----------+
--------------------------------------------------
               Promotion
Booking more than 80 person will get 30% discount
--------------------------------------------------
-------------------Enter Your Details-------------
Customer Name:
Daniel ema
Customer's IC Number:
221133660099
```

```
001 - Government
002 - Corporate
003 - VIP
Please enter your package code:
001
Enter pax of participants:
90
Because you're checking for more then 80 participants, you're eligible for 30% discount
Your total price after discount is RM 13500.0
Payment Amount: RM
14000.0
--------------RECIEPT-----------------
Name: Daniel ema
IC: 221133660099
No of participants: 90
Total package price: RM13500.0
Customer payment: RM14000.0
Balance that customer need to pay: RM-500.0
--------------THANK YOU-----------------
```

(Corporate)

```
Welcome to Paradise Resort and Training Centre
Please enter your password to continue:
P@Qwerty$123
----------------------------------------------
Paradise Resort & Training Centre
Kuala Terengganu, Terengganu
----------------------------------------------
+------+------------+-----------+
| Code |   Package  |   Price   |
+------+------------+-----------+
|  001 | Government | RM150/Pax |
|  002 | Corporate  | RM230/Pax |
|  003 | VIP        | RM330/Pax |
+------+------------+-----------+
--------------------------------------------------
              Promotion
Booking more than 80 person will get 30% discount
--------------------------------------------------
-------------------Enter Your Details-------------
Customer Name:
Flower masyam
Customer's IC Number:
223344008899
```

```
001 - Government
002 - Corporate
003 - VIP
Please enter your package code:
002
Enter pax of participants:
90
Because you're checking for more then 80 participants, you're eligible for 30% discount
Your total price after discount is RM 20700.0
Payment Amount: RM
20700.0
--------------RECIEPT-----------------
Name: Flower masyam
IC: 223344008899
No of participants: 90
Total package price: RM20700.0
Customer payment: RM20700.0
Balance that customer need to pay: RM0.0
--------------THANK YOU-----------------
```

(VIP)

```
Welcome to Paradise Resort and Training Centre
Please enter your password to continue:
P@Qwerty$123
---------------------------------------------
Paradise Resort & Training Centre
Kuala Terengganu, Terengganu
---------------------------------------------
+------+-------------+-----------+
| Code |   Package   |   Price   |
+------+-------------+-----------+
|  001 | Government  | RM150/Pax |
|  002 | Corporate   | RM230/Pax |
|  003 | VIP         | RM330/Pax |
+------+-------------+-----------+
--------------------------------------------------
                Promotion
Booking more than 80 person will get 30% discount
--------------------------------------------------
------------------Enter Your Details-------------
Customer Name:
hafiz
Customer's IC Number:
232345073345
001 - Government
002 - Corporate
003 - VIP
Please enter your package code:
003
```

```
Enter pax of participants:
90
Because you're checking for more then 80 participants, you're eligible for 30% discount
Your total price after discount is RM 29700.0
Payment Amount: RM
30000.0
--------------RECIEPT-----------------
Name: hafiz
IC: 232345073345
No of participants: 90
Total package price: RM29700.0
Customer payment: RM30000.0
Balance that customer need to pay: RM-300.0
--------------THANK YOU-----------------
```