

BINUS University

Academic Career: <i>Undergraduate / Master / Doctoral *)</i>		Class Program: <i>International/Regular/Smart Program/Global Class*)</i>	
<input type="checkbox"/> Mid Exam <input checked="" type="checkbox"/> Final Exam <input type="checkbox"/> Short Term Exam <input type="checkbox"/> Others Exam : _____		Term : Odd/Even/Short *)	
<input checked="" type="checkbox"/> Kemanggisan <input checked="" type="checkbox"/> Alam Sutera <input checked="" type="checkbox"/> Bekasi <input type="checkbox"/> Senayan <input type="checkbox"/> Bandung <input type="checkbox"/> Malang		Academic Year : 2020 / 2021	
Faculty / Dept. : School of Computer Science		Deadline	Day / Date : Saturday / Jul 17 th , 2021 Time : 13:00 - 16:20 (200 Minutes)
Code - Course : COMP6175 – Object Oriented Programming		Class : All Classes	
Lecturer : Team		Exam Type : Online	
<i>Y) Strikethrough the unnecessary items</i>			
The penalty for CHEATING is DROP OUT!!!			

Learning Outcomes:

LO 2 : Describe the main features of OOP

LO 3 : Describe the additional features of OOP

LO 4 : Construct a program using additional features of OOP

I. Essay (30 Points)

Please submit the answer in PDF format

1. Explain at least 3 benefits using generic (class/interface/method) in polymorphism! (Don't forget to add reference if you get sources from website) **(LO 3, 15 Point)**
2. Java language supports multithreading. Threads exist in several states. Explain the differences between **Suspended, Blocked and Terminated (LO 3, 15 Point)**

II. Case (LO 2, LO 3 & LO 4, 70 Points)

Please submit the answer in 1 folder Java Project

Aloha Food is an online food restaurant that sells various Indonesian food. There are two order types, **Pickup** and **Delivery**. As a programmer, you are asked to create an application for ordering food at Aloha Food. You must create an application using Object Oriented Programming especially **Abstract Class**. Hereby the following conditions:

- When the program is opened, the program will ask user to input data:
 - **Name**, validate that the length must be between 5 - 30 characters
 - **Phone number**, validate that it must be in the form of number.
- If user input name "ADMIN" (case insensitive), the application will show the **admin menu**. Otherwise, the application will show the **customer menu**.

Verified by,

Muhammad Fikri Hasani, S.Kom., M.T. (D642) and sent to Program on Jun 23, 2021

- **Admin Menu**

1. **Add Menu**

Admin can add menu by input:

- **Name**, validate that the length must be between 5-20 characters
- **Price**, validate that it must be in the form of number

After admin finished entering all the inputs, the program will show the **Menu Id** which consists of 10 random numbers.

2. **Show Order List**

Program will show all order list with format below

- Order Id
- Customer Name
- Order Type
 - Takeaway format: T - Picker Name
 - Delivery format: D - Address
- Menu Name
- Quantity
- Total price

3. **Exit**

It is used to exit from the program.

- **Customer Menu**

If there is no menu data, program will show message “No Data” and program will exit. Otherwise, program will show all the menu list (Menu id, Name, Price) and user can order food with the following conditions:

- User input **menu id**, validate that the menu id inputted by the user must be valid.
- User input **quantity**, validate that quantity must be in number.
- User input **order type**, validate that order type must be either Delivery or Takeaway (case insensitive)
- If the **order type** = “**Delivery**”, user must input the **address**. If order type = “**Take away**”, user must input the **picker name**. Picker name length must be in between 5 - 20 characters.
- After all data is inputted, the program will show the **Order Id and order total price**. Order id will be generated sequentially from OR001.

-- Good Luck --

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