



AIN SHAMS UNIVERSITY FACULTY OF COMPUTER AND INFORMATION SCIENCES



Software Engineering Program – Credit Hours Programs (CHP)

STUDENT PORTFOLIO – Academic Year 2023/2024

<i>UEL Module Code</i> CN5125	<i>UEL Module Name</i> Algorithms and Design Patterns	
<i>ASU Course Code</i> SWE322	<i>ASU Course Name</i> Software Design Patterns	
	Semester Fall 2024	Date of Submission 12/5/2024

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1- Quizzes

Saif Eddin Hatem Ahmed
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2021170814

70
100

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Module Code: CN5125 Module Name: Algorithms and Design Patterns
Course Code: SWE322 Maximum Marks: 100 Marks

Software Design Patterns – Quiz

Consider the following scenario.

Becky and Sam decide to go for a long drive. On their way, they see a burger outlet and decide to stop for a snack. Becky orders for a classic cheeseburger but Sam is on a diet and hence goes for a veggie variation of the burger. Also, there are many different people present in the outlet who are ordering different types of burgers. There they notice that burger making involves different processes, like toasting the bread, creating patty for burger, making sauces and then everything is put together.

Every burger consists of bread, patty, veggies, sauces.

The burger can have extra cheese or not.

As a developer you do not want to make a constructor that takes all these parameters.

Choose the suitable patterns that allows you to produce burger objects efficiently.

```

public abstract class burgerBuilder {
    public burger;
    public void createBurger() {
        burger = new Burger();
    }
    public abstract void buildBread();
    public abstract void buildPatty();
    public abstract void buildVeggies();
    public abstract void buildSauce(boolean extraCheese);
}

```



```
public class Burger {  
    private String bread, patty, veggies, sauces;  
    private boolean extraCheese;  
    public Burger() {}  
    public void setBread(String bread) {  
        this.bread = bread;  
    }  
    public void setPatty(String patty) {  
        this.patty = patty; 20 ✓  
    }  
    public void setSauces(String sauces veggies) { this this.sauces = sauces; }  
    public void setExtraCheese(boolean extraCheese) {  
        this.extraCheese = extraCheese;  
    }  
}  
  
public class FinalBurger extends burgerBuilder {  
    @Override buildBread buildBurger ("toasted bread") {  
        burger.setBread("toasted bread"); 10 ✓  
    }  
    @Override buildPatty exten
```



2- Midterm Exam

Saif Eldin Hatem Ahmed
2021170814

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Fall 2023 **Module Code: CN5125** **Module Name: Algorithms and Design Patterns**
Course Code: SWE322 **Maximum Marks: 100 Marks**

Software Design Patterns – Midterm

Question1: choose the correct answer (50 marks)

a. Explain the benefits of design patterns in Java. [20 marks]

b. What is the meaning of SOLID principles? [30 marks]

50
100

Question2: Consider the following story and its UML diagram (50 marks)

Consider a pizza restaurant that is known for its delicious and customizable pizzas. Customers have the freedom to choose their preferred crust type, sauce, and toppings to create their perfect pizza. You need to implement the Builder design pattern to streamline the pizza customization process.

public

Q1) [a] It solves common problems in real world ~~by~~ in the form of a template. ✓

[b] SOLID is an abbreviation for the following:

S: Single purpose classes. ✓

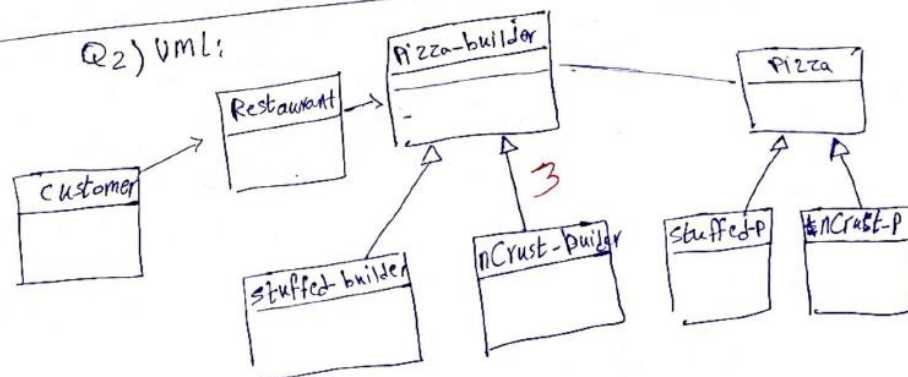
O: Open/closed system ✓
[closed for maintenance and open for extending]

L: Liskov substitution ✓

I: Interface Specific - 3

D: Dependence inversion ✓

Q2) UML:





3- Project



University of East London

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Project marking criteria

Course Code:	CN 5125				Course Name:	Algorithms and Design Pattern				Assignment No.	Project				Date:	23 Dec 2023			
Student Name:	Saif Al-Din Hatem Ahmed Mohammed Khalil												Student ID:	2021170814					

	A (89-100)				B (76-88)				C (67-75)				D (60-66)				F (0-59)				
	100	96	92	89	88	84	80	76	75	72	69	67	66	64	62	60	59	40	20	0	
Relevance & implementation of Functions (40%)	• All functions in program are relevant and correctly structured and implemented.				• Functions in program are correctly structured and implemented but there are few missing issues functions or minor deviations.				• Some Functions in program are not correctly structured and implemented. • There are some missing issues or major deviations.				• Many functions are not correctly structured and implemented. • There are many missing issues or major deviations.				• Most of functions are incorrect. • There are major deviations in most of the implemented functions.				
	✓																				
Passing Test cases (40%)	• The program can pass all test cases correctly.				• The program can pass most of test cases correctly				• The program can pass only some of test cases correctly				• The program can pass only few of test cases correctly.				• The program cannot run most of the test cases or there are syntax errors such that the program doesn't run at all.				
	✓																				
Clean Code (20%)	• The written code follows the guidelines of clean code.				• The written code almost follows the guidelines of clean code.				• The written code partially follows the guidelines of clean code.				• Low ability to follow guidelines of clean code.				• The program doesn't follow any guidelines of clean code.				
	✓																				
1st marker Total					100 / 100				1st marker Signature				Ahmed Hatem				ASU Agreed Mark	20 / 20			
2nd marker Total					100 / 100				2nd marker Signature				Prof. Walaa Khaled				UEL Agreed Mark	100 / 100			