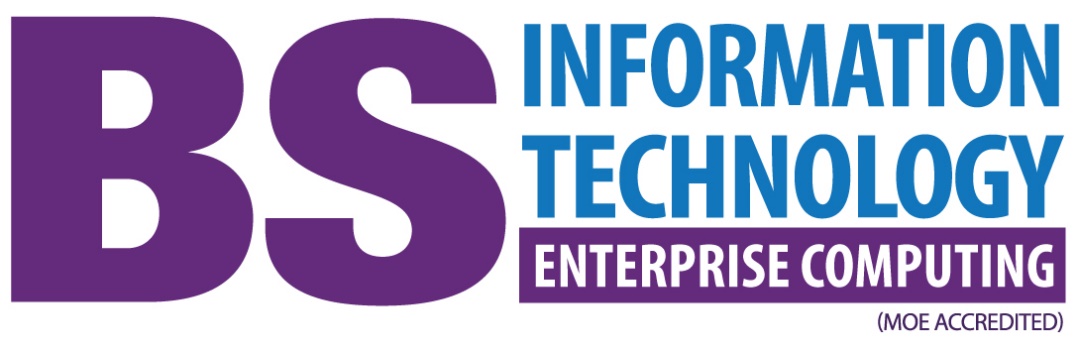
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**Principles of Programming Language (BIT2102)**

**Assignment - 1**

**CLO1. Demonstrate an understanding of programming and object-oriented concepts.**

|  |  |  |  |
| --- | --- | --- | --- |
| **COURSE CODE** | **BIT2102** | | |
| **COURSE NAME** | **Principles of Programming Language** | | |
| **STUDENT NAME** |  | **STUDENT ID** |  |
| **STUDENT NAME** |  | **STUDENT ID** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Question** | **CLO** | **Max Score** | **Student Score** |
| Exercises | 1 | 15 |  |
|  | **Total** | **15** |  |

**Learning Outcomes:**

**Demonstrate an understanding of programming and object-oriented concepts.**

**Directions**

**Instructions to Students:**

* Submission is no later than 15 June 2020 @ 23:59
* This assignment could be done as individual or no more than two students
* You are required to add comments to your code showing the different stages
* You are required to submit your soft copy of your java code file via LMS
* Submit document showing screenshot of the output
* Email submission will not be considered.
* You must not cheat and do not copy from another submission.
* Any late submission will be penalized (-1/ day).
* Any code copying from other will both parties be penalized

**Exercise 1: [5 Marks]**

Write a java program that simulate the payment of workers in a company based in the following criteria:

Working hours payment

|  |  |
| --- | --- |
| **Working hours** | **payment** |
| < 40 | Normal rate – No Bonus |
| ≤50 | 12% Bonus on the Payment |
| >50 | 15% Bonus on the Payment |

The program should prompt the user of the followings:

1. Full name of the worker

2. Gender

3. Hourly rate, and

4. Number of hours the worker done over a week.

The program then shows the payment slip including the normal hours and the overtime done plus the total pay for that week. Below is a sample of an output of the program:

|  |  |
| --- | --- |
| Please enter worker full name : Mohamed Ahmed  Enter gender : M  Enter hourly rate (AED) : 50  Enter number of weekly worked hours : 56  =============================  Worker name : Mohamed Ahmed  Gender M  Number of hours worked : 56 hours  Rate : 50.0 AED  Payment : 2800 AED  Overtime payment : 336 AED  Total payment : 3136.0 AED | Please enter worker full name : Safia Mohamed  Enter gender : F  Enter hourly rate ( AED) : 50  Enter number of weekly worked hours : 39  =============================  Worker name : Safia Mohamed  Gender F  Number of hours worked : 39 hours  Rate : 50.0 AED  Payment : 1950.0 AED  Overtime payment : - AED  Total payment : 1950.0 AED |

**Exercice 1 Source Code**

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**Exercice 1 Output**

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**Exercice 2: [5 Marks]**

Write a program that accepts a character and a number from the user, adds the number to the character and it should result in a new letter.

**Example:**

**Sample inputs:**

**Enter a character : C**

**Enter a number : 5**

**Output : H**

**Enter a character : M**

**Enter a number : 13**

**Output : Z**

**Enter a character : N**

**Enter a number : 13**

**Output : A**

**Enter a character : O**

**Enter a number : 13**

**Output : B**

**Enter a character : X**

**Enter a number : 5**

**Output : C**

The program should check if the user has entered a letter and the number that is input should be between 1 and 13 (both inclusive). Print appropriate error messages if the user has not entered a letter or if the number is less than 1 or above 13. If the user inputs a lowercase letter convert it to uppercase.

**Hint: After adding the number to the character, if the character goes beyond Z, then subtract 26 from it.**

**Exercice 2 Source Code**

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|  |

**Exercice 2 Output**

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| --- |
|  |

**Exercice 3: [5 Marks]**

Write a program which displays the following list on the screen and asks the user to enter either 1 or 2 and perform one of the operations based on the user’s input. If the user enters any other character other than 1 or 2 then display “wrong choice”.

**LIST OF OPERATIONS**

1. Buzz Number

2. Consecutive Odd numbers

**Note:**

A BUZZ number is a number which either ends with 7 or is divisible by 7.

Sample input

27

Output

27 is a Buzz number

Sample input:

46

Output:

46 is not a Buzz number

Two numbers are said to be consecutive odd numbers if both the numbers are odd and the difference between them is 2.

Sample input

11

15

Output:

11 and 15 are not consecutive odd numbers

Sample input

21

23

Output:

21 and 23 are consecutive odd numbers

**Exercice 3 Source Code**

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| --- |
|  |

**Exercice 3 Output**

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