University of Bahrain

College of Information Technology

Department of Computer Engineering

**Assignment 2**

**Systematically Calculate the Multiplicative Inverse**

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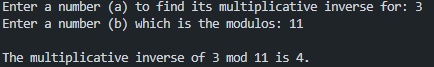
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Required points: -

The language program you implemented. **Python**

1. **Overview of the program**  
   Asking the user to enter 2 positive integer and find the Multiplicative inverse of it, and if there is no multiplicative inverse it will show you the output.
2. **Prerequisite.**python 3.x (no matter the verion)
3. **Provide the procedures (steps) for the compiling and executing**The user must enter 2 positive number (a) to find the multiplicative invers for and the modules (b), after the user enter these data, the program will module (a) % (b) and the output will be in terminal
4. **Show the type of the input data and provide a snapshot**Enter a number (a) to find its multiplicative inverse for: 3  
   Enter a number (b) which is the modulos: 11  
   The multiplicative inverse of 3 mod 11 is 4.
5. **Sample of the output**
6. **Test your program with the following inputs:**
   1. Input: 3 and 11
   2. Input: 10 and 17
   3. Input: 2 and 4
7. **Output (11 mod 3)**

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1. **Output (17 mod 10)**

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1. **Output (4 mod 2)**

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**Proving :**

**Se substitute (2) by (11-3x3)**

**So, MI of 11 is 🡪**

**We substitute (3) by (10-7) We Substitute (7) by (17-10)**

**So, MI of 17 is 🡪**

**gcd(2,4) = (0,2) = 2**

**So, we don’t have Multiplicative inverse for 4-1 and the output for python program is correct. It shows there is no MI.**