**EXPERIMENT NO-12**

**OBJECTIVE-** a program to find out the Multiplicative inverse of a given number by

using Extended Euclidean algorithm.

**SOURCE CODE-**

**def modInverse(a, m):**

**m0 = m**

**y = 0**

**x = 1**

**if (m == 1):**

**return 0**

**while (a > 1):**

**# q is quotient**

**q = a // m**

**t = m**

**# m is remainder now, process**

**# same as Euclid's algo**

**m = a % m**

**a = t**

**t = y**

**# Update x and y**

**y = x - q \* y**

**x = t**

**# Make x positive**

**if (x < 0):**

**x = x + m0**

**return x**

**# Driver code**

**a = 3**

**m = 11**

**# Function call**

**print("Modular multiplicative inverse is",**

**modInverse(a, m))**

**OUTPUT-**

multiplicative inverse is 4

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