

**CS 222**

**ASSIGNMENT 5: Modular arithmetic**

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# OUTPUT -

```
noModN_2103114_1903122.cpp - Assignment 5 - Visual Studio Code
noModN_2103114_1903122.cpp
main()
{
    int x, y, z;
    int a;
    a = (x + y) * z;
    x++;
    y++;
    z++;
    a = (x + y) * z;
    cout << "a = " << a << endl;
    return 0;
}
```

Windows PowerShell  
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```
PS C:\Users\glmsa\OneDrive\Desktop\CS222 - Algorithm Design\Assignment 5> cd "c:\Users\glmsa\OneDrive\Desktop\CS222 - Algorithm Design\Assignment 5\"; if ($?) { g++ noModN_2103114_1903122.cpp -o noModN_2103114_1903122.exe; if ($?) { .\noModN_2103114_1903122.exe }
Enter the value x:5
Enter the value y:6
Enter the value z:7
(a + b) * c = 7
-a = 65
a - b = 69
a++ = 5
++a = 7
PS C:\Users\glmsa\OneDrive\Desktop\CS222 - Algorithm Design\Assignment 5>
```

```
noModN_2103114_1903122.cpp - Assignment 5 - Visual Studio Code
noModN_2103114_1903122.cpp
main()
{
    int x, y, z;
    int a;
    a = (x + y) * z;
    x++;
    y++;
    z++;
    a = (x + y) * z;
    cout << "a = " << a << endl;
    return 0;
}
```

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```
PS C:\Users\glmsa\OneDrive\Desktop\CS222 - Algorithm Design\Assignment 5> cd "c:\Users\glmsa\OneDrive\Desktop\CS222 - Algorithm Design\Assignment 5\"; if ($?) { g++ noModN_2103114_1903122.cpp -o noModN_2103114_1903122.exe; if ($?) { .\noModN_2103114_1903122.exe }
Enter the value x:5
Enter the value y:6
Enter the value z:7
(a + b) * c = 7
-a = 65
a - b = 69
a++ = 5
++a = 7
PS C:\Users\glmsa\OneDrive\Desktop\CS222 - Algorithm Design\Assignment 5> cd "c:\Users\glmsa\OneDrive\Desktop\CS222 - Algorithm Design\Assignment 5\"; if ($?) { g++ noModN_2103114_1903122.cpp -o noModN_2103114_1903122.exe; if ($?) { .\noModN_2103114_1903122.exe }
Enter the value x:1
Enter the value y:2
Enter the value z:3
(a + b) * c = 9
-a = 69
a - b = 69
a++ = 1
++a = 3
PS C:\Users\glmsa\OneDrive\Desktop\CS222 - Algorithm Design\Assignment 5>
```

The time complexity of each function is  $O(1)$  since we exclusively use constant time complexity arithmetic operators ( $O(1)$ ).

The default function `Object()` { [native code] }, `noModN`, takes no arguments:  $O(1)$ . A function `Object()` { [native code] } for `noModN` with the input `x`:  $O(1)$ . division operation:  $O(1)$ , Operator plus overloaded:  $O(1)$ , Operator overloaded:  $O(1)$ , Operator for an overloaded unary:  $O(1)$  , Operator that is overloaded:  $O(1)$ , The pre-increment `++` operator is overloaded:  $O(1)$ , The post-increment `++` operator is overloaded:  $O(1)$ , Overloaded (friend function) operator:  $O(1)$ .

**- THANK YOU -**