Assignment – A3

Code

A3.c

```c
#include <jni.h>
#include <stdio.h>
#include "A3.h"

JNIEXPORT jint JNICALL Java_A3_add(JNIEnv *env, jobject obj, jint a, jint b) {
    jint result = a + b;
    printf("\n%d + %d = %d\n", a, b, result);
    return result; // Return the result
}


JNIEXPORT jint JNICALL Java_A3_sub(JNIEnv *env, jobject obj, jint a, jint b) {
    jint result = a - b;
    printf("\n%d - %d = %d\n", a, b, result);
    return result; // Return the result
}


JNIEXPORT jint JNICALL Java_A3_mult(JNIEnv *env, jobject obj, jint a, jint b) {
    jint result = a * b;
    printf("\n%d * %d = %d\n", a, b, result);
    return result; // Return the result
}

JNIEXPORT jint JNICALL Java_A3_div(JNIEnv *env, jobject obj, jint a, jint b) {
    if (b == 0) {
        printf("Error: Division by zero.\n");
        return 0; // Return 0 or handle error appropriately
    }
    jint result = a / b;
    printf("\n%d / %d = %d\n", a, b, result);
    return result; // Return the result
}
```

A3.java

```java
import java.io.*;
import java.util.*;

class A3 {
    static {
        System.loadLibrary("A3");
    }

    private native int add(int a, int b);
    private native int sub(int a, int b);
    private native int mult(int a, int b);
    private native int div(int a, int b);

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int a, b, ch;

        System.out.println("\nEnter value of a : ");
        a = sc.nextInt();
        System.out.println("\nEnter value of b : ");
        b = sc.nextInt();

        do {
            System.out.println("\nENTER YOUR CHOICE : ");
            ch = sc.nextInt();
            switch (ch) {
                case 1:
                    new A3().add(a, b);
                    break;
                case 2:
                    new A3().sub(a, b);
                    break;
                case 3:
                    new A3().mult(a, b);
                    break;
                case 4:
                    new A3().div(a, b);
                    break;
                default:
                    System.out.println("Your choice is wrong.");
            }
        } while (ch < 5);
    }
}
```

Output

```
[notsoadmin - Code-A3 (~/Code-A3) > 06:42:33]
$ javac A3.java
[notsoadmin - Code-A3 (~/Code-A3) > 06:42:36]
$ javac -h . A3.java
[notsoadmin - Code-A3 (~/Code-A3) > 06:42:40]
$ gcc -shared -o libA3.so -fPIC -I"$JAVA_HOME/include" -I"$JAVA_HOME/include/linux" A3.c
[notsoadmin - Code-A3 (~/Code-A3) > 06:42:43]
$ java -Djava.library.path=. A3

Enter value of a :
5

Enter value of b :
4

ENTER YOUR CHOICE :
1

5 + 4 = 9

ENTER YOUR CHOICE :
2

5 - 4 = 1

ENTER YOUR CHOICE :
3

5 * 4 = 20

ENTER YOUR CHOICE :
4

5 / 4 = 1

ENTER YOUR CHOICE :
5
Your choice is wrong.
```