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Batch: TE-B3

ASSIGNMENT NO.

PROBLEM STATEMENT : Write a program to create a Dynamic Link Library for any mathematical operation and write an application program to test it. (Java Native Interface / Use VB or VC++)

Java Program
```java
import java.util.Scanner;

public class SampleDLL
{
   static
   {
      System.loadLibrary("SampleDLL");
   }
   public static void main(String args[])
   {
      Scanner sc = new Scanner(System.in);
      int num1,num2;
      System.out.print("Enter first number: ");
      num1 = sc.nextInt();
      System.out.print("Enter second number: ");
      num2 = sc.nextInt();
      System.out.println("Addition Result:"+new SampleDLL().add(num1,num2));
      System.out.println("Subtraction Result:"+new SampleDLL().sub(num1,num2));
      System.out.println("Multiplication Result:"+new SampleDLL().mul(num1,num2));
   }
   private native int add(int num1,int num2);
   private native int sub(int num1,int num2);
   private native int mul(int num1,int num2);
}
```

C Program
```c
#include<stdio.h>
#include "SampleDLL.h"
JNIEXPORT jint JNICALL Java_SampleDLL_add(JNIEnv *env, jobject obj1, jint num1, jint num2)
{
   jint res;
   res=num1+num2;
   return res;
}
JNIEXPORT jint JNICALL Java_SampleDLL_sub(JNIEnv *env, jobject obj1, jint num1, jint num2)
{
   jint res;
   res=num1-num2;
   return res;
}
JNIEXPORT jint JNICALL Java_SampleDLL_mul(JNIEnv *env, jobject obj1, jint num1, jint num2)
{
   jint res;
   res=num1*num2;
   return res;
}
```

```
/***Output
gescoe@gescoe-OptiPlex-3010:~/TEB47$ javac -h . SampleDLL.java
gescoe@gescoe-OptiPlex-3010:~/TEB47$ gcc -c -fPIC -I/usr/lib/jvm/java-1.11.0-openjdk-amd64/include -
I/usr/lib/jvm/java-1.11.0-openjdk-amd64/include/linux SampleDLL.c -o SampleDLL.o
gescoe@gescoe-OptiPlex-3010:~/TEB47$ gcc -shared -fPIC -o libSampleDLL.so SampleDLL.o -lc
gescoe@gescoe-OptiPlex-3010:~/TEB47$ java -Djava.library.path=. SampleDLL
Enter first number: 23
Enter second number: 34
Addition Result:57
Subtraction Result:-11
Multiplication Result:782
gescoe@gescoe-OptiPlex-3010:~/TEB47$
***/
```