

GDB Assignment

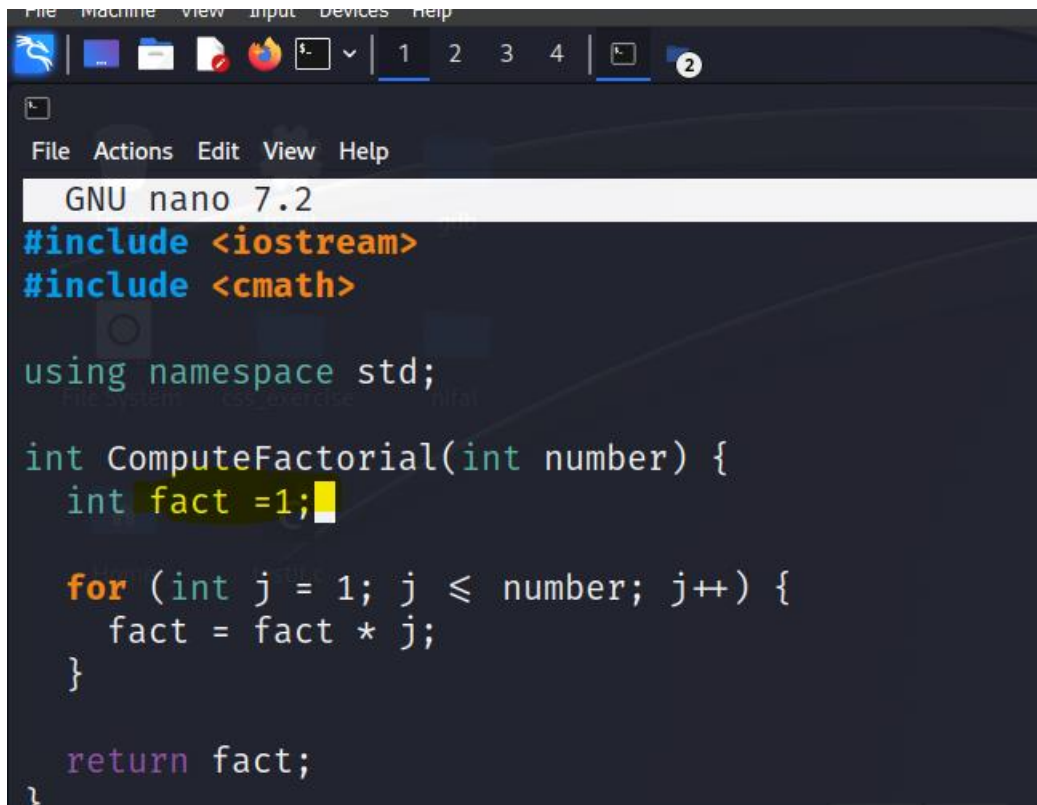
Muhammed Nifal V

1. Broken

```
kali-linux-2023.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
(kali@kali)-[~/Desktop]
$ cd gdb
(kali@kali)-[~/Desktop/gdb]
$ nano broken.cpp
(kali@kali)-[~/Desktop/gdb]
$ g++ -g broken.cpp -o broken
(kali@kali)-[~/Desktop/gdb]
$ gdb broken
GNU gdb (Debian 13.2-1) 13.2
Copyright (C) 2023 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
Type "show copying" and "show warranty" for details.
This GDB was configured as "x86_64-linux-gnu".
Type "show configuration" for configuration details.
For bug reporting instructions, please see:
<https://www.gnu.org/software/gdb/bugs/>.
Find the GDB manual and other documentation resources online at:
<http://www.gnu.org/software/gdb/documentation/>.

For help, type "help".
Type "apropos word" to search for commands related to "word" ...
Reading symbols from broken...
(gdb) break main
Breakpoint 1 at 0x1257: file broken.cpp, line 29.
(gdb) r
Starting program: /home/kali/Desktop/gdb/broken
```

```
(gdb) n
(x^0)/0! + (x^1)/1! + (x^2)/2! + (x^3)/3! + (x^4)/4! + ..... + (x^n)/n!
33 cout << "Please enter the value of x : " ;
(gdb) n
36 cin >> x;
(gdb) n
Please enter the value of x : 89
39 cout << endl << "Please enter an integer value for n : " ;
(gdb) n
40 cin >> n;
(gdb) n
Please enter an integer value for n : 65
41 cout << endl;
(gdb) n
43 double seriesValue = ComputeSeriesValue(x, n);
(gdb) n
44 cout << "The value of the series for the values entered is "
(gdb) n
45 << seriesValue << endl;
The value of the series for the values entered is inf
47 return 0;
(gdb) n
48 }
(gdb) n
__libc_start_call_main(main=main@entry=0x55555555524f <main()>, argc=argc@entry=1, argv=argv@entry=0x7fffffd58)
at ../sysdeps/nptl/libc_start_call_main.h:74
74 ../sysdeps/nptl/libc_start_call_main.h: No such file or directory.
(gdb)
```



```
File Machine View Input Devices Help
GNU nano 7.2
#include <iostream>
#include <cmath>

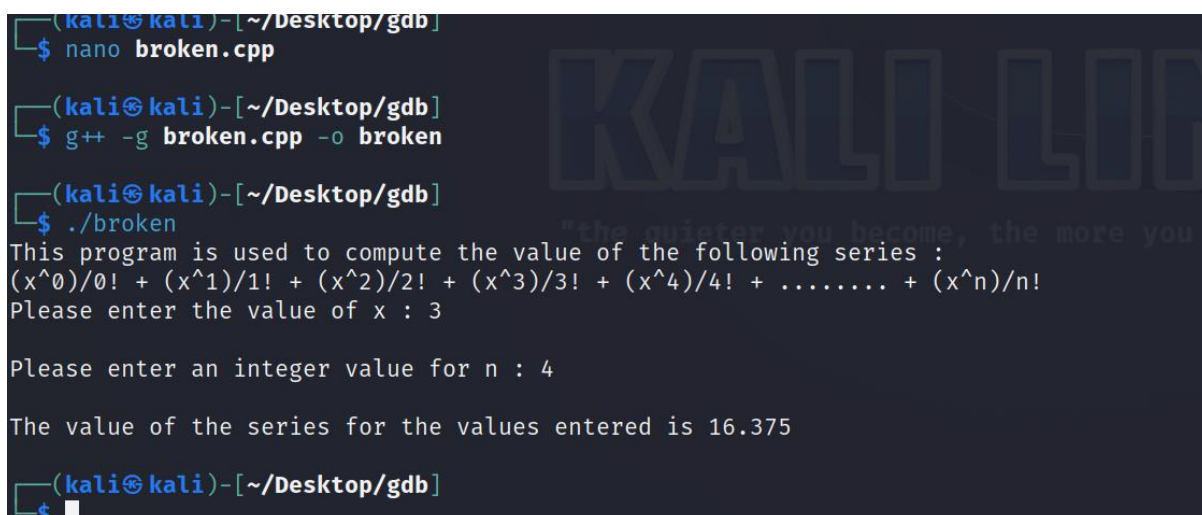
using namespace std;

int ComputeFactorial(int number) {
    int fact = 1;

    for (int j = 1; j ≤ number; j++) {
        fact = fact * j;
    }

    return fact;
}
```

Output



```
(kali㉿kali)-[~/Desktop/gdb]
$ nano broken.cpp

(kali㉿kali)-[~/Desktop/gdb]
$ g++ -g broken.cpp -o broken

(kali㉿kali)-[~/Desktop/gdb]
$ ./broken
This program is used to compute the value of the following series :
(x^0)/0! + (x^1)/1! + (x^2)/2! + (x^3)/3! + (x^4)/4! + ..... + (x^n)/n!
Please enter the value of x : 3

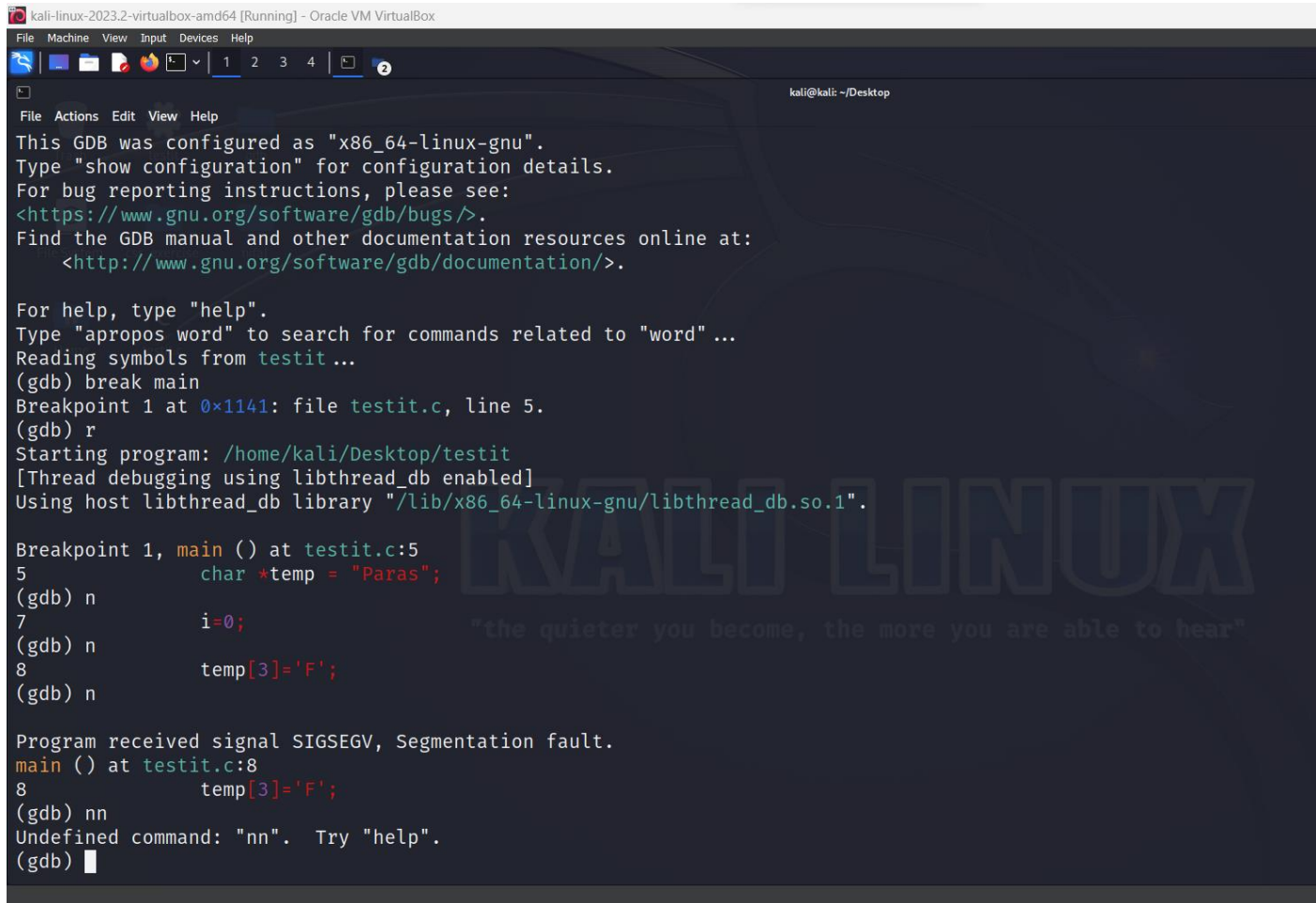
Please enter an integer value for n : 4

The value of the series for the values entered is 16.375

(kali㉿kali)-[~/Desktop/gdb]
$
```

2. TESTIT

BEFORE DEBUGGING



```
kali-linux-2023.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
1 2 3 4 5
kali@kali: ~/Desktop
File Actions Edit View Help
This GDB was configured as "x86_64-linux-gnu".
Type "show configuration" for configuration details.
For bug reporting instructions, please see:
<https://www.gnu.org/software/gdb/bugs/>.
Find the GDB manual and other documentation resources online at:
<http://www.gnu.org/software/gdb/documentation/>.

For help, type "help".
Type "apropos word" to search for commands related to "word"...
Reading symbols from testit...
(gdb) break main
Breakpoint 1 at 0x1141: file testit.c, line 5.
(gdb) r
Starting program: /home/kali/Desktop/testit
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".

Breakpoint 1, main () at testit.c:5
5      char *temp = "Paras";
(gdb) n
7      i=0;
(gdb) n
8      temp[3]='F';
(gdb) n

Program received signal SIGSEGV, Segmentation fault.
main () at testit.c:8
8      temp[3]='F';
(gdb) nn
Undefined command: "nn". Try "help".
(gdb) 
```

AFTER DEBUGGING

```
kali-linux-2023.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
10 printf("%c\n", temp[i]);    }
(gdb) n
P
9 for (i = 0 ; i < 5 ; i++ )
(gdb) n
10 printf("%c\n", temp[i]);    }
(gdb) n
a
9 for (i = 0 ; i < 5 ; i++ )
(gdb) n
10 printf("%c\n", temp[i]);    }
(gdb) n
r
9 for (i = 0 ; i < 5 ; i++ )
(gdb) n
10 printf("%c\n", temp[i]);    }
(gdb) n
F
9 for (i = 0 ; i < 5 ; i++ )
(gdb) n
10 printf("%c\n", temp[i]);    }
(gdb) n
s
9 for (i = 0 ; i < 5 ; i++ )
(gdb) n
10 printf("%c\n", temp[i]);    }
(gdb) n
__libc_start_call_main (main=main@entry=0x55555555139 <main>, argc=argc@entry=1, argv=argv@entry=0x7ffffffdf68)
  at ../sysdeps/nptl/libc_start_call_main.h:74
74 ../sysdeps/nptl/libc_start_call_main.h: No such file or directory.
(gdb) █
```

OUTPUT

```
kali-linux-2023.2-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
(gdb) n
F
9 for (i = 0 ; i < 5 ; i++ )
(gdb) n
10 printf("%c\n", temp[i]);    }
(gdb) n
s
9 for (i = 0 ; i < 5 ; i++ )
(gdb) n
10 printf("%c\n", temp[i]);    }
(gdb) n
__libc_start_call_main (main=main@entry=0x55555555139 <main>, argc=argc@entry=1, argv=argv@entry=0x7ffffffdf68)
  at ../sysdeps/nptl/libc_start_call_main.h:74
74 ../sysdeps/nptl/libc_start_call_main.h: No such file or directory.
(gdb) q
A debugging session is active.

    Inferior 1 [process 9742] will be killed.

Quit anyway? (y or n) y
(kali@kali)-[~/Desktop]
└─$ ./testit
P
a
r
F
S
(kali@kali)-[~/Desktop]
└─$ █
```