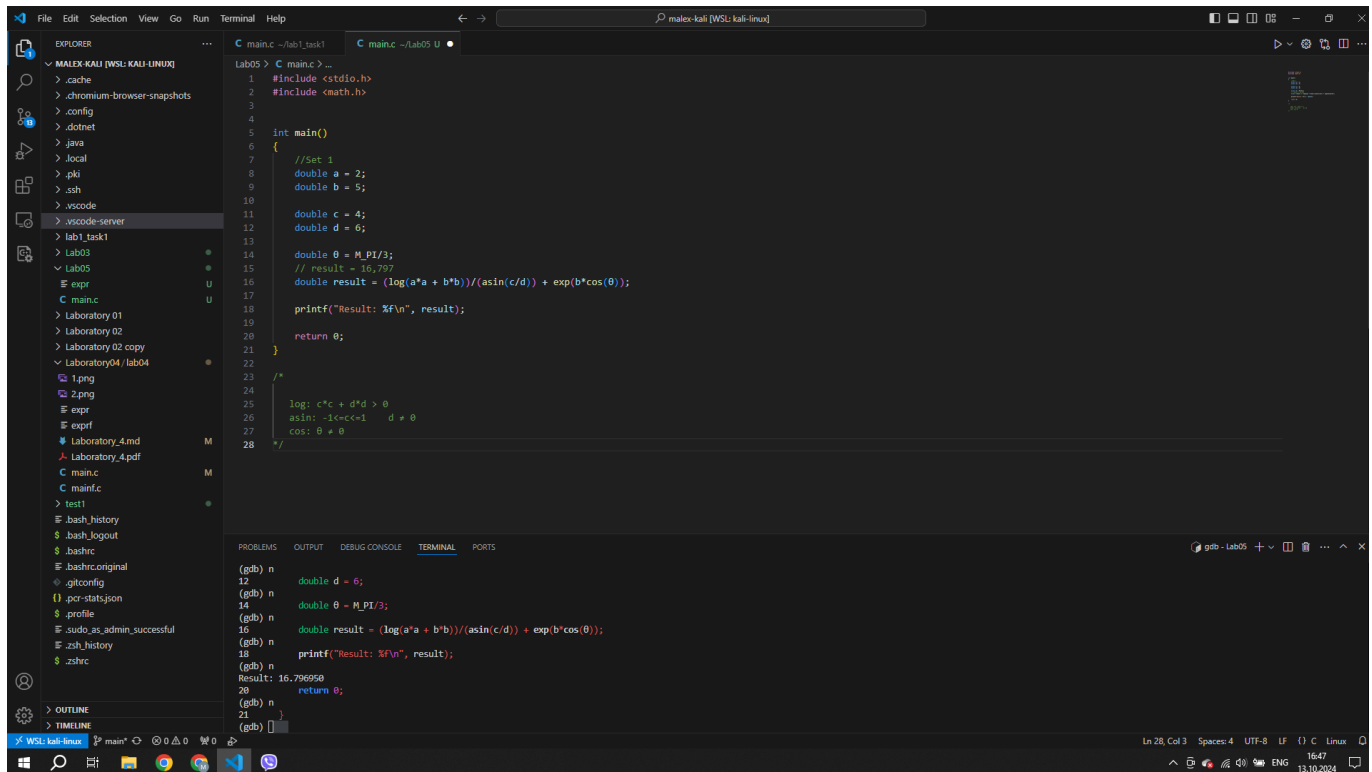


Report 5

First set

Programm with first set of data



The screenshot shows the Visual Studio Code interface with a C program open in the editor. The program is a simple C file named `main.c` located in the `~/Lab05` directory. The code includes `<stdio.h>` and `<math.h>`, and defines a `main` function. Inside `main`, it sets variables `a=2`, `b=5`, `c=4`, and `d=6`. It then calculates `result = (log(a*a + b*b))/(asin(c/d)) + exp(b*cos(0))` and prints it. The program is compiled with `gcc -g -O0 main.c -o expr -lm`. The GDB output in the terminal shows the execution of the program, with the result `16.796958` printed.

```
1 #include <stdio.h>
2 #include <math.h>
3
4
5 int main()
6 {
7     //Set 1
8     double a = 2;
9     double b = 5;
10
11     double c = 4;
12     double d = 6;
13
14     double theta = M_PI/3;
15     // result = 16.797
16     double result = (log(a*a + b*b))/(asin(c/d)) + exp(b*cos(theta));
17
18     printf("Result: %f\n", result);
19
20     return 0;
21 }
22
23 /*
24 log: c*c + d*d > 0
25 asin: -1<=c<=1  d > 0
26 cos: 0 <= 0
27 */
28 */
```

```
(gdb) n
12      double d = 6;
(gdb) n
14      double theta = M_PI/3;
(gdb) n
16      double result = (log(a*a + b*b))/(asin(c/d)) + exp(b*cos(theta));
(gdb) n
18      printf("Result: %f\n", result);
(gdb) n
Result: 16.796958
20      return 0;
(gdb) n
21 }
```

GDB output

```
(malex-kali@MA)-[~/Lab05]
```

```
└─$ gcc -g -O0 main.c -o expr -lm
```

```
(malex-kali@MA)-[~/Lab05]
```

```
└─$ gdb ./expr
```

GNU gdb (Debian 13.2-1+b2) 13.2

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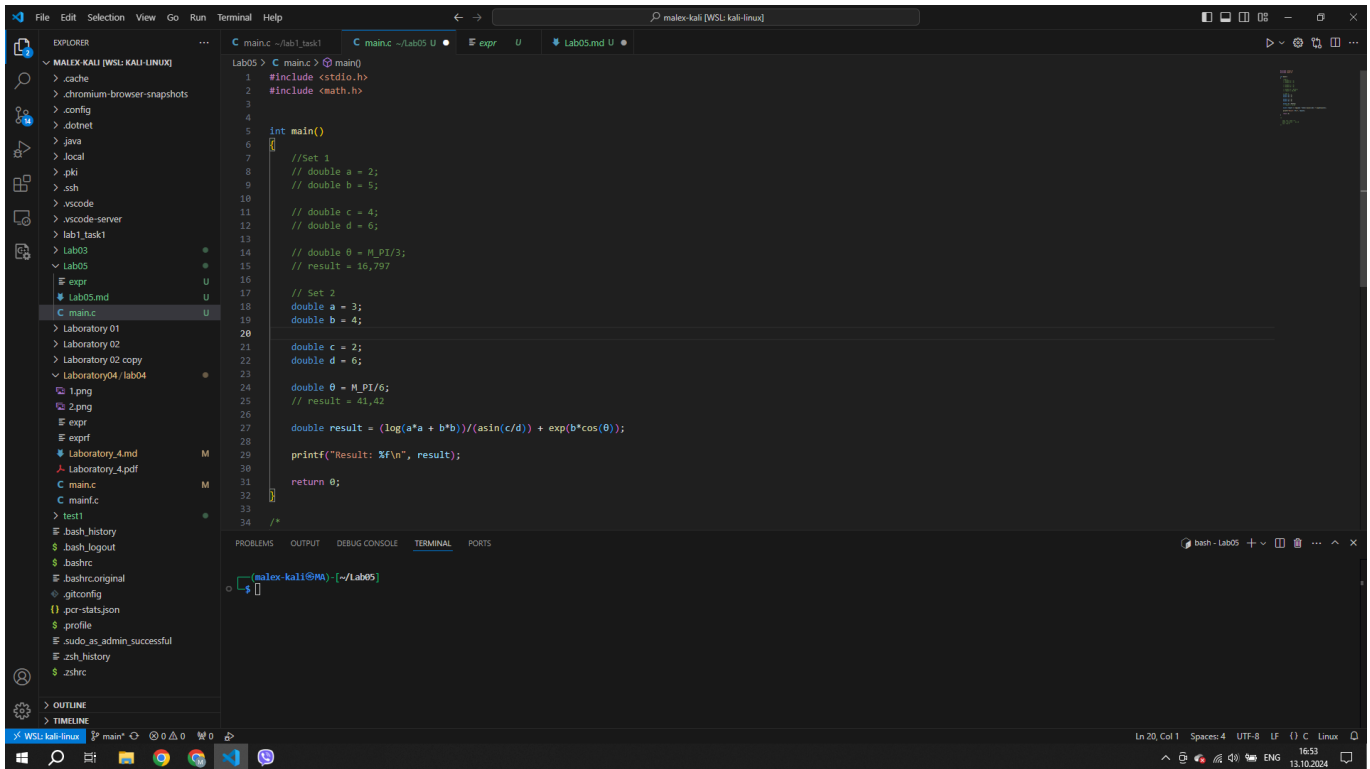
Find the GDB manual and other documentation resources online at:

<http://www.gnu.org/software/gdb/documentation/>.

```
For help, type "help".
Type "apropos word" to search for commands related to "word"...
--Type for more, q to quit, c to continue without paging--c
Reading symbols from ./expr...
(gdb) b main
Breakpoint 1 at 0x1182: file main.c, line 8.
(gdb) r
Starting program: /home/malex-kali/Lab05/expr
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".

Breakpoint 1, main () at main.c:8
8 double a = 2;
(gdb) n
9 double b = 5;
(gdb) n
11 double c = 4;
(gdb) n
12 double d = 6;
(gdb) n
14 double  $\theta$  = M_PI/3;
(gdb) n
16 double result = (log(aa + bb))/(asin(c/d)) + exp(b*cos( $\theta$ ));
(gdb) n
18 printf("Result: %f\n", result);
(gdb) n
Result: 16.796950
20 return 0;
```

Second set



GDB output

```
(malex-kali@MA)-[~/Lab05]
```

```
$ gcc -g -O0 main.c -o expr -lm
```

```
(malex-kali@MA)-[~/Lab05]
```

```
$ gdb ./expr
```

GNU gdb (Debian 13.2-1+b2) 13.2

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Find the GDB manual and other documentation resources online at:

<http://www.gnu.org/software/gdb/documentation/>.

--Type for more, q to quit, c to continue without paging--c

For help, type "help".

Type "apropos word" to search for commands related to "word"...

Reading symbols from ./expr...

(gdb) b main

Breakpoint 1 at 0x1182: file main.c, line 18.

(gdb) r

Starting program: /home/malex-kali/Lab05/expr

[Thread debugging using libthread_db enabled]

Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".

Breakpoint 1, main () at main.c:18

18 double a = 3;

(gdb) n

19 double b = 4;

(gdb) n

21 double c = 2;

(gdb) n

22 double d = 6;

(gdb) n

24 double $\theta = M_PI/6$;

(gdb) n

25 double result = (log(aa + bb))/(asin(c/d)) + exp(b*cos(θ));

(gdb) n

27 printf("Result: %f\n", result);

(gdb) n

Result: 41.419571

29 return 0;

Third set

```

File Edit Selection View Go Run Terminal Help
C main.c ~/Lab05 task1 C main.c ~/Lab05 U expr U Lab05.md U
Lab05 > C main.c > main()
5 int main()
11 // double c = 4;
12 // double d = 6;
13 // double theta = M_PI/3;
14 // result = 10,797
15
16 // Set 2
17 // double a = 3;
18 // double b = 4;
19
20 // double c = 2;
21 // double d = 6;
22
23 // double theta = M_PI/6;
24 // result = 41,42
25
26 // Set 3
27 double a = 4;
28 double b = 4;
29
30 double c = 1;
31 double d = 3;
32
33 double theta = M_PI/2;
34 // result = 11,198
35
36 double result = (log(a*a + b*b))/(asin(c/d)) + exp(b*cos(theta));
37
38 printf("Result: %f\n", result);
39
40 return 0;
41
42
43
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
(malex-kali@MA) - [~/Lab05]
$ gcc -g -O0 main.c -o expr -lm
  
```

GDB output

—(malex-kali@MA) - [~/Lab05]

—\$ gcc -g -O0 main.c -o expr -lm

```
└─(malex-kali@MA)-[~/Lab05]
└─$ gdb ./expr
GNU gdb (Debian 13.2-1+b2) 13.2
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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/.

--Type for more, q to quit, c to continue without paging--c
For help, type "help".
Type "apropos word" to search for commands related to "word"...
Reading symbols from ./expr...
(gdb) b main
Breakpoint 1 at 0x1182: file main.c, line 28.
(gdb) r
Starting program: /home/malex-kali/Lab05/expr
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".

Breakpoint 1, main () at main.c:28
28 double a = 4;
(gdb) n
29 double b = 4;
(gdb) n
31 double c = 1;
(gdb) n
32 double d = 3;
(gdb) n
34 double  $\theta$  = M_PI/2;
(gdb) n
37 double result = (log(aa + bb))/(asin(c/d)) + exp(b*cos( $\theta$ ));
(gdb) n
39 printf("Result: %f\n", result);
(gdb) n
Result: 11.198233
41 return 0;
```