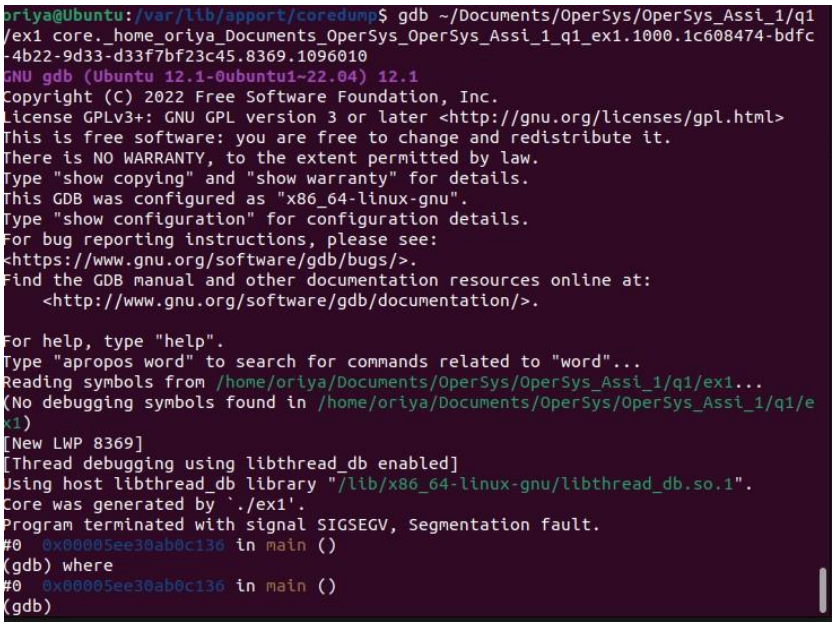
מערכות הפעלה מטלה 1 תרגיל 1- צילומי מסך

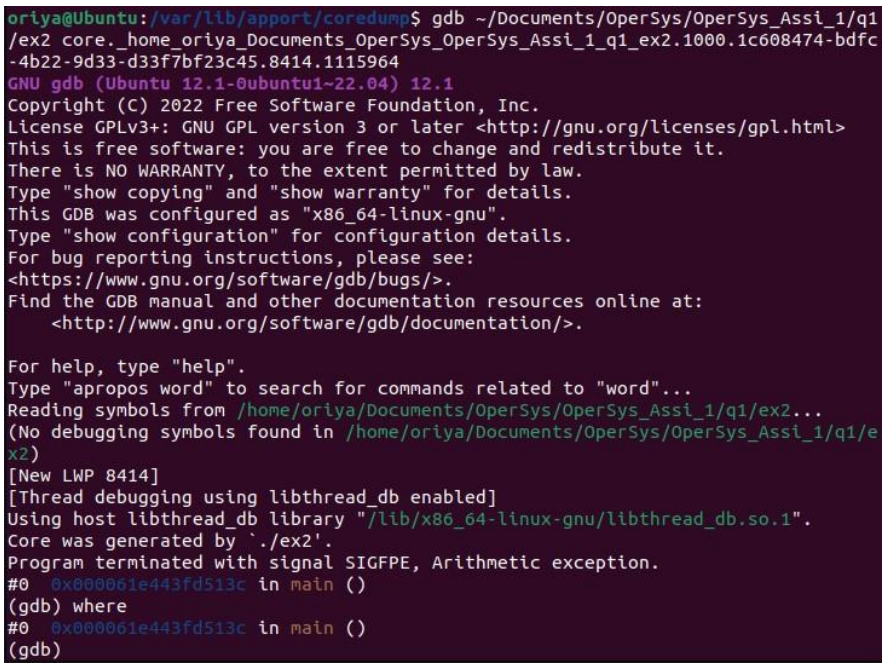
Gdb without debug info:

בצילומי המסך הבאים ניתן לראות שכשביקשנו מהGDB להדפיס היכן נפלה התוכנית (באמצעות הפקודה where) הוא לא ידע להגיד בדיוק באיזו שורה אלא באיזו פונקציה (main).

Ex1-



Ex2-



Ex3-

```
oriya@Ubuntu:/var/lib/apport/coredump$ gdb ~/Documents/OperSys/OperSys_Assi_1/q1
/ex3 core._home_oriya_Documents_OperSys_OperSys_Assi_1_q1_ex3.1000.1c608474-bdfc
-4b22-9d33-d33f7bf23c45.8432.1132645
GNU gdb (Ubuntu 12.1-0ubuntu1~22.04) 12.1
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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 /home/oriya/Documents/OperSys/OperSys_Assi_1/q1/ex3...
(No debugging symbols found in /home/oriya/Documents/OperSys/OperSys_Assi_1/q1/e
x3)
[New LWP 8432]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./ex3'.
Program terminated with signal SIGSEGV, Segmentation fault.
#0  __memset_sse2_unaligned_erms ()
    at ../sysdeps/x86_64/multiarch/memset-vec-unaligned-erms.S:409
409     ../sysdeps/x86_64/multiarch/memset-vec-unaligned-erms.S: No such file or
 directory.
(gdb) where
#0  __memset_sse2_unaligned_erms ()
    at ../sysdeps/x86_64/multiarch/memset-vec-unaligned-erms.S:409
#1  0x0000571dc7cff16b in main ()
(gdb)
```

Gdb with debug info:

בצילומי המסך הבאים נראה שהGDB ידע בדיוק היכן קרתה הנפילה (הדפיס באיזו פונקציה ובאיזו שורה, וגם את השורה עצמה).

Ex1-

```
oriya@Ubuntu:/var/lib/apport/coredump$ gdb ~/Documents/OperSys/OperSys_Assi_1/q1
/ex1 core._home_oriya_Documents_OperSys_OperSys_Assi_1_q1_ex1.1000.1c608474-bdfc
-4b22-9d33-d33f7bf23c45.8548.1210512
GNU gdb (Ubuntu 12.1-0ubuntu1~22.04) 12.1
Copyright (C) 2022 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 /home/oriya/Documents/OperSys/OperSys_Assi_1/q1/ex1...
[New LWP 8548]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./ex1'.
Program terminated with signal SIGSEGV, Segmentation fault.
#0  0x000061c2a332d136 in main () at ex1.c:4
4           main();
(gdb) where
#0  0x000061c2a332d136 in main () at ex1.c:4
(gdb)
```

Ex2-

```
oriya@Ubuntu:/var/lib/apport/coredump$ gdb ~/Documents/OperSys/OperSys_Assi_1/q1
/ex2 core._home_oriya_Documents_OperSys_OperSys_Assi_1_q1_ex2.1000.1c608474-bdfc
-4b22-9d33-d33f7bf23c45.8556.1218597
GNU gdb (Ubuntu 12.1-0ubuntu1~22.04) 12.1
Copyright (C) 2022 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
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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 /home/oriya/Documents/OperSys/OperSys_Assi_1/q1/ex2...
[New LWP 8556]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./ex2'.
Program terminated with signal SIGFPE, Arithmetic exception.
#0  0x00005b544254f13c in main () at ex2.c:4
4           return 2/0;
(gdb) where
#0  0x00005b544254f13c in main () at ex2.c:4
(gdb)
```

Ex3-

```
oriya@Ubuntu:/var/lib/apport/coredump$ gdb ~/Documents/OperSys/OperSys_Assi_1/q1
/ex3 core._home_oriya_Documents_OperSys_OperSys_Assi_1_q1_ex3.1000.1c608474-bdfc
-4b22-9d33-d33f7bf23c45.8563.1224525
GNU gdb (Ubuntu 12.1-0ubuntu1~22.04) 12.1
Copyright (C) 2022 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.
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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 /home/oriya/Documents/OperSys/OperSys_Assi_1/q1/ex3...
[New LWP 8563]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./ex3'.
Program terminated with signal SIGSEGV, Segmentation fault.
#0  __memset_sse2_unaligned_erms ()
    at ../sysdeps/x86_64/multiarch/memset-vec-unaligned-erms.S:409
409     ../sysdeps/x86_64/multiarch/memset-vec-unaligned-erms.S: No such file or
 directory.
(gdb) where
#0  __memset_sse2_unaligned_erms ()
    at ../sysdeps/x86_64/multiarch/memset-vec-unaligned-erms.S:409
#1  0x0000555f432fd16b in main () at ex3.c:5
(gdb)
```
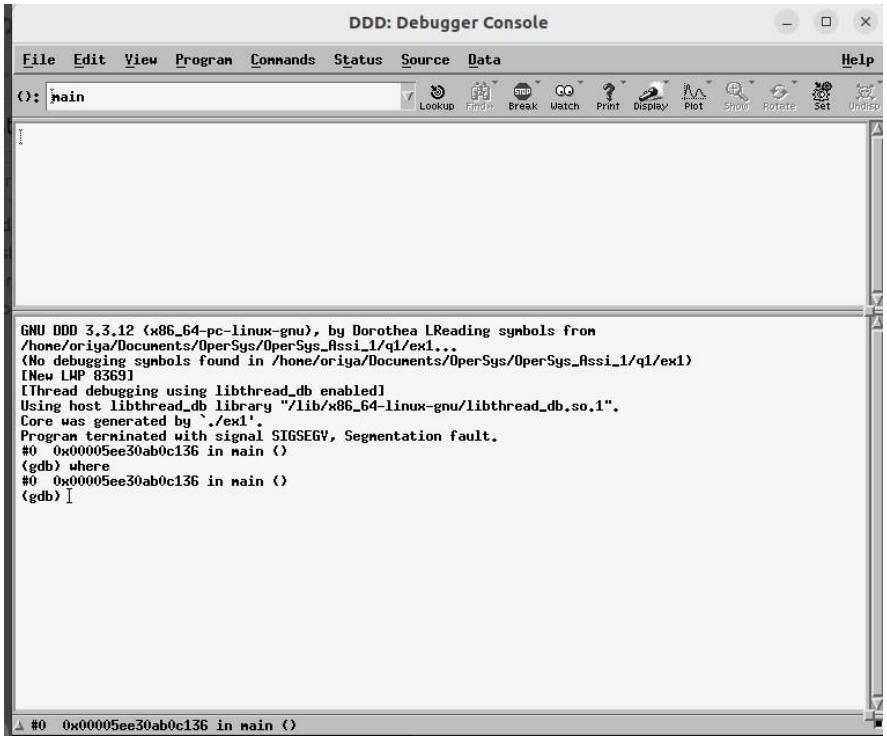
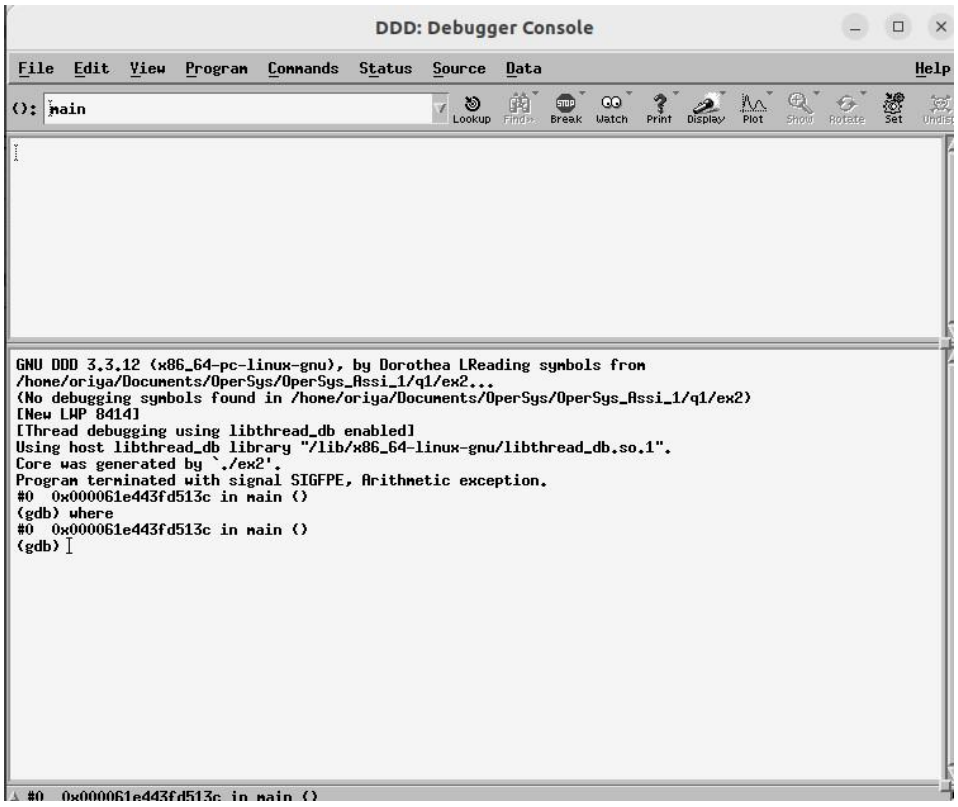

DDD without debug info:

בצילומי המסך הבאים נראה שהDDD לא ידע את הקוד עצמו (ניתן לראות בחלונית העליונה שהוא לא הציג את הקוד, לעומת בחלק עם המידע לדיבוג שבו הוא הראה את שורות הקוד עצמן). בנוסף, נראה שגם DDD לא ידע בדיוק באיזו שורה נפלה התוכנית אלא באיזו פונקציה.

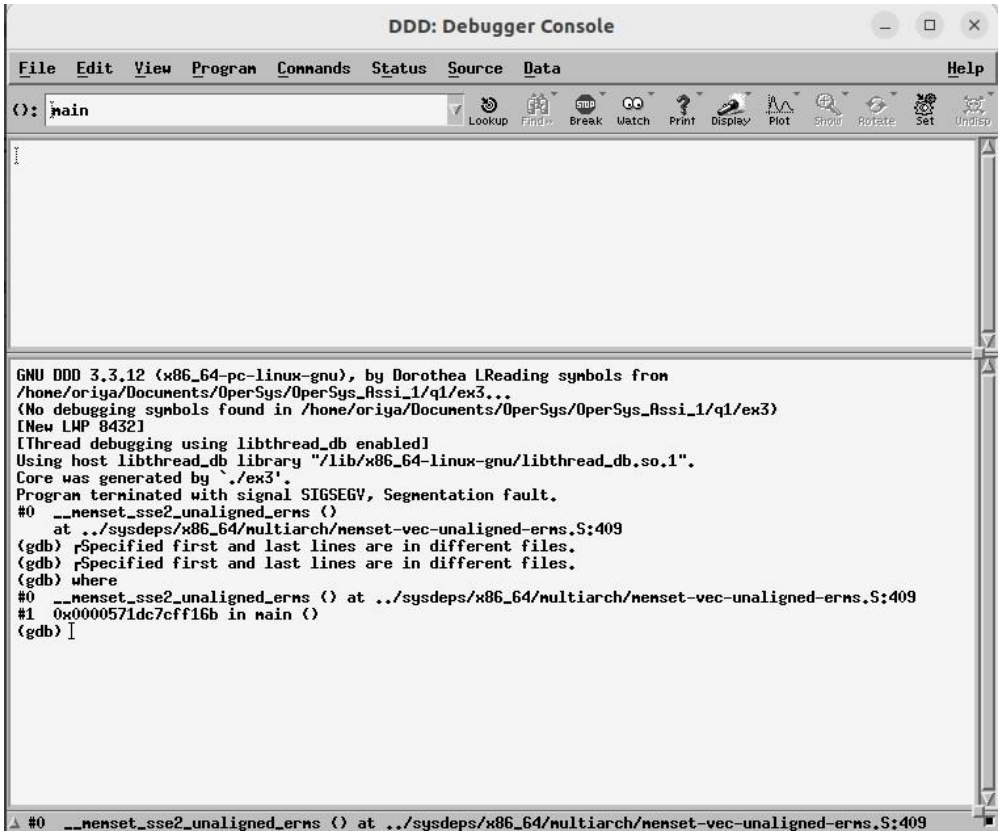
Ex1-



Ex2-



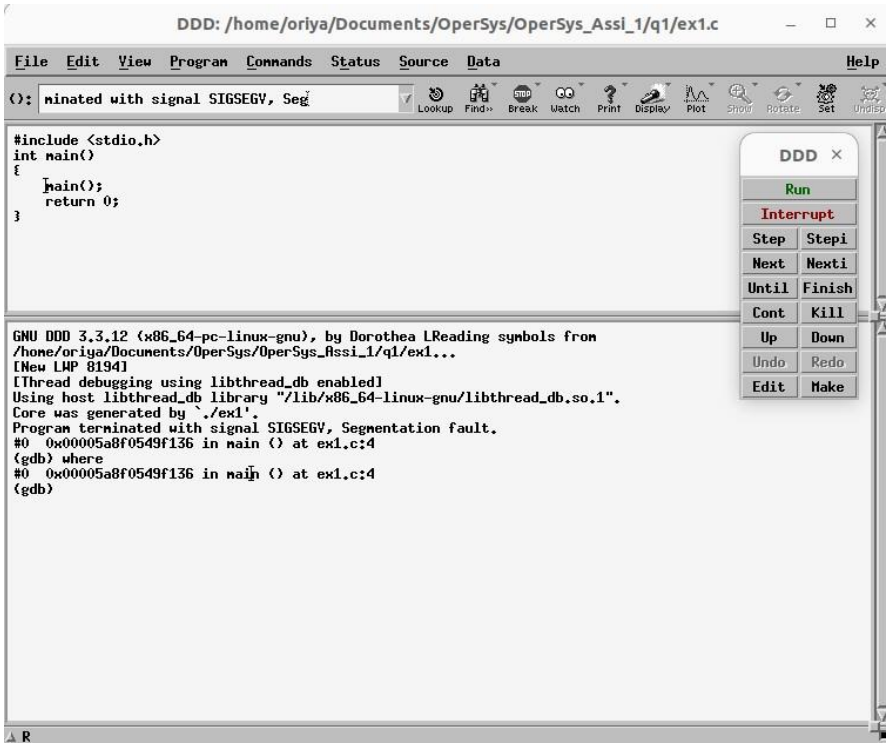
Ex3-



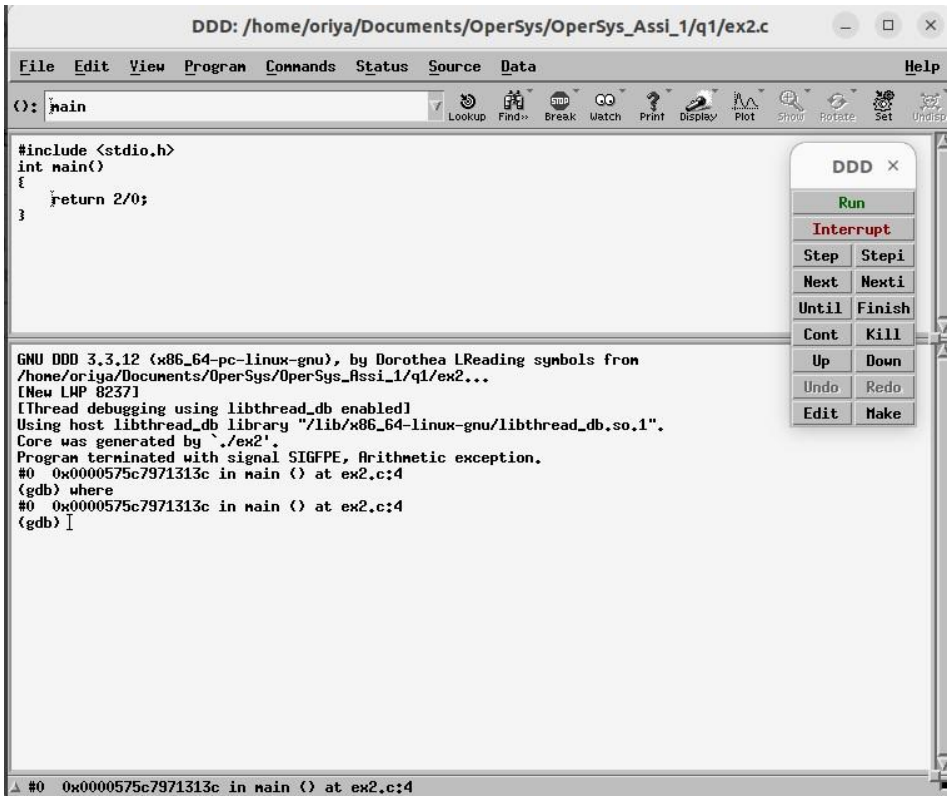
DDD with debug info:

בצילומי המסך הבאים נראה שהDDD מראה לנו את הקוד עצמו והיכן התוכנה נופלת בדיוק (תוכנית ושורה).

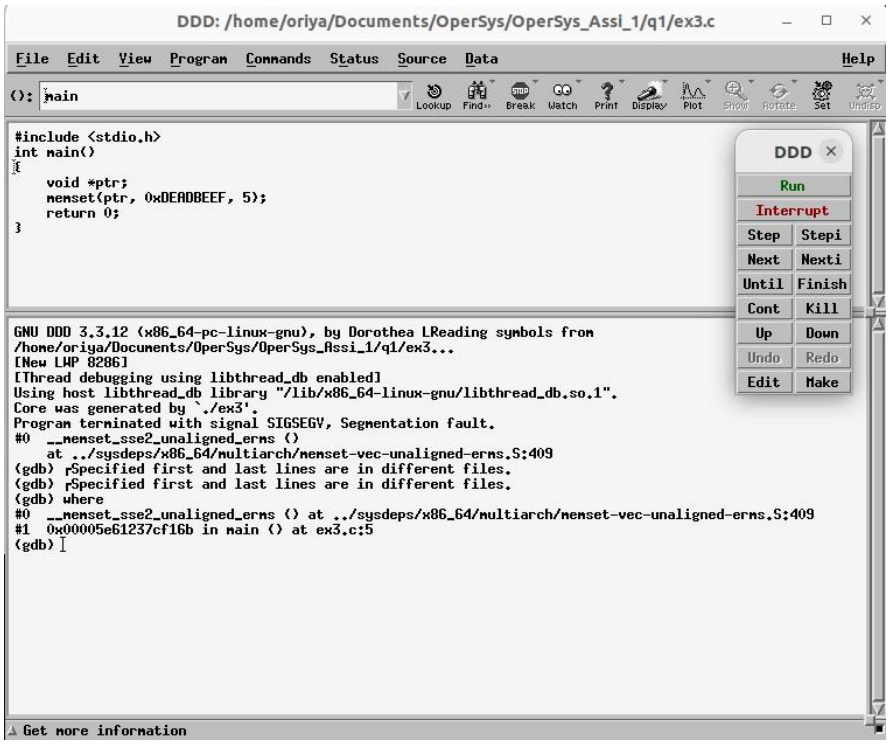
Ex1-



Ex2-


DDD: /home/oriya/Documents/OperSys/OperSys_Assi_1/q1/ex2.c
File Edit View Program Commands Status Source Data Help
(): main
Lookup Find» Break Watch Print Display Plot Show Rotate Set Undisp
#include <stdio.h>
int main()
{
return 2/0;
}
DDD
Run
Interrupt
Step Stepi
Next Nexti
Until Finish
Cont Kill
Up Down
Undo Redo
Edit Make
GNU DDD 3.3.12 (x86_64-pc-linux-gnu), by Dorothea LReading symbols from
/home/oriya/Documents/OperSys/OperSys_Assi_1/q1/ex2...
[New LWP 8237]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./ex2'.
Program terminated with signal SIGFPE, Arithmetic exception.
#0 0x0000575c7971313c in main () at ex2.c:4
(gdb) where
#0 0x0000575c7971313c in main () at ex2.c:4
(gdb)
#0 0x0000575c7971313c in main () at ex2.c:4

Ex3-


DDD: /home/oriya/Documents/OperSys/OperSys_Assi_1/q1/ex3.c
File Edit View Program Commands Status Source Data Help
(): main
Lookup Find» Break Watch Print Display Plot Show Rotate Set Undisp
#include <stdio.h>
int main()
{
void *ptr;
memset(ptr, 0xDEADBEEF, 5);
return 0;
}
DDD
Run
Interrupt
Step Stepi
Next Nexti
Until Finish
Cont Kill
Up Down
Undo Redo
Edit Make
GNU DDD 3.3.12 (x86_64-pc-linux-gnu), by Dorothea LReading symbols from
/home/oriya/Documents/OperSys/OperSys_Assi_1/q1/ex3...
[New LWP 8286]
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Core was generated by `./ex3'.
Program terminated with signal SIGSEGV, Segmentation fault.
#0 __memset_sse2_unaligned_erms ()
at ../sysdeps/x86_64/multiarch/memset-vec-unaligned-erms.S:409
(gdb) Specified first and last lines are in different files.
(gdb) Specified first and last lines are in different files.
(gdb) where
#0 __memset_sse2_unaligned_erms () at ../sysdeps/x86_64/multiarch/memset-vec-unaligned-erms.S:409
#1 0x00005e61237cf16b in main () at ex3.c:5
(gdb)
Get more information