Kod programu:

Programy Miejsca System

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```c
#include <syscall.h>
#include <unistd.h>
#include <stdio.h>
#include <sys/types.h>


int main(void) {
        long ID;
        ID = fork();
        printf("id=%ld\n", ID);

        if(ID==0){
                printf ( "Child, Child PID: %d\n", getpid());
                printf ( "Child, Parent PID: %d\n", getppid());
        }
        else{
                printf ( "Parent, Parent PID: %d\n", getpid());
                printf ( "Parent, Child PID: %ld\n", ID);
        }
        return(0);
}
```

Wywolanie programu:

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```
write(1, "Parent, Parent PID: 7843\n", 25Parent, Parent PID: 7843
) = 25
write(1, "Parent, Child PID: 7844\n", 24Parent, Child PID: 7844
) = 24
+++ exited with 0 +++
bd46477@jota-7267:~/Desktop$ ./a.out
id=8221
Parent, Parent PID: 8220
Parent, Child PID: 8221
id=0
Child, Child PID: 8221
Child, Parent PID: 1
bd46477@jota-7267:~/Desktop$
```

Desktop : bash

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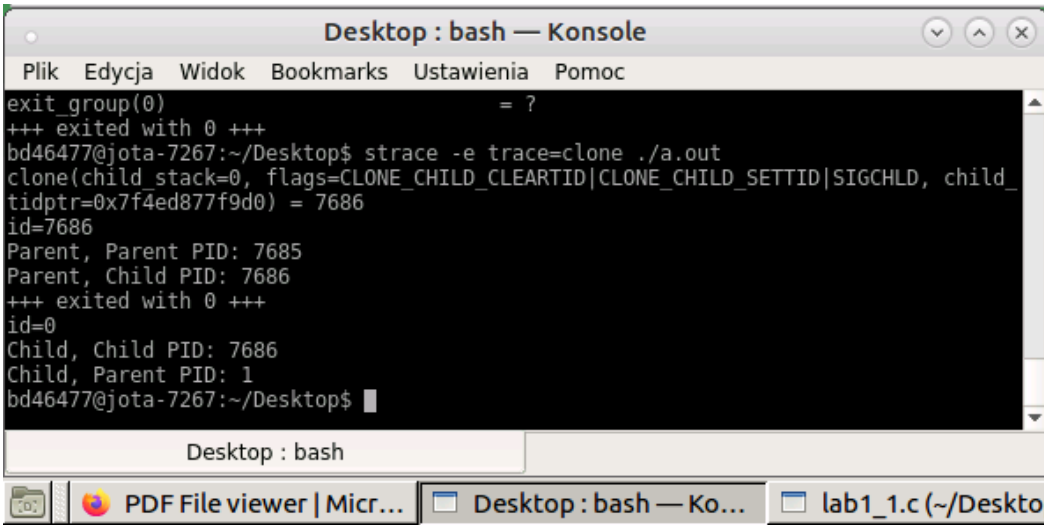
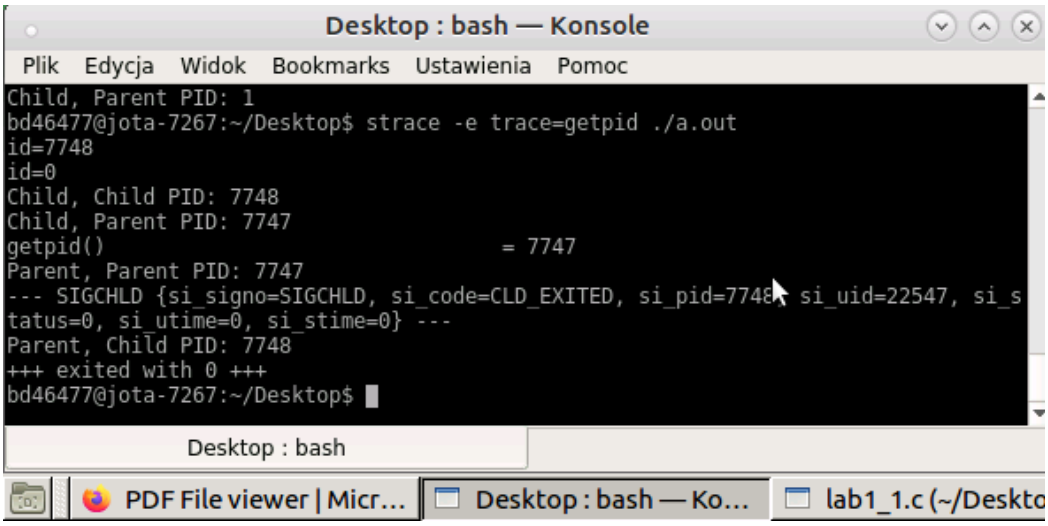
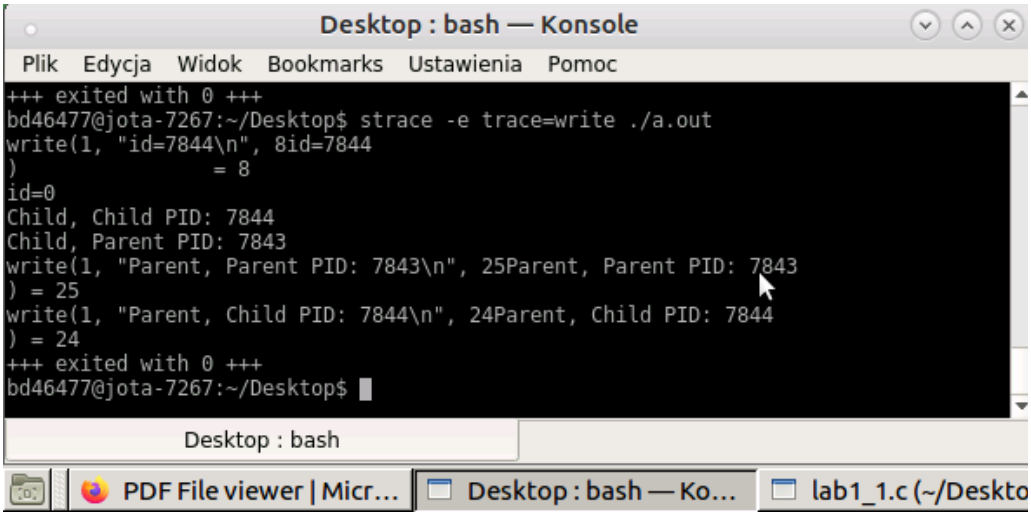
Wynik strace dla clone:

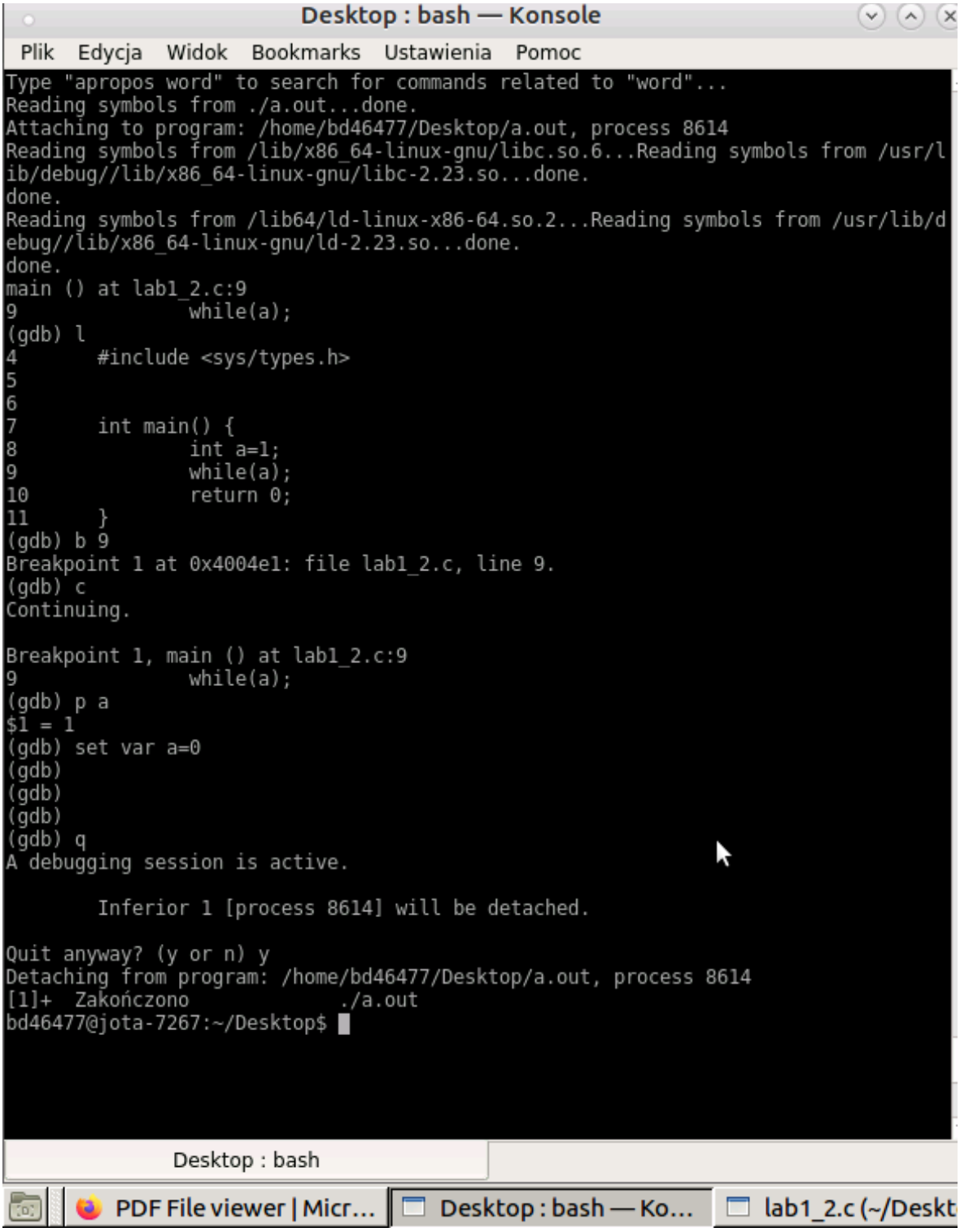


Wynik strace dla getpid:



Wynik strace dla write:





Do wykonania zadania musialem skompilowac z dodaniem -g, aby moc wejsc do debuggera. Nastepnie po odpaleniu programu: ./a.out zatrzymuje proces aby wrzucic go w tlo. Sprawdzam procesid za pomoca komendy ps. Kolejnym krokiem jest zmienienie wartosci a, wpisujac gdb ./a.out id_procesu, po uruchomieniu gdb wpisujemy set var a=0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valgrind: Unknown option: --tool-memcheck
valgrind: Use --help for more information or consult the user manual.
bd46477@jota-7267:~/Desktop$ valgrind --tools-memcheck --leak-check=yes ./a.out
valgrind: Unknown option: --tools-memcheck
valgrind: Use --help for more information or consult the user manual.
bd46477@jota-7267:~/Desktop$ valgrind --tool-memcheck --leak-check=yes ./a.out
valgrind: Unknown option: --tool-memcheck
valgrind: Use --help for more information or consult the user manual.
bd46477@jota-7267:~/Desktop$ valgrind --leak-check=yes ./a.out
==9762== Memcheck, a memory error detector
==9762== Copyright (C) 2002-2015, and GNU GPL'd, by Julian Seward et al.
==9762== Using Valgrind-3.11.0 and LibVEX; rerun with -h for copyright info
==9762== Command: ./a.out
==9762==
==9762== Invalid write of size 1
==9762== at 0x4005A8: main (lab1_3.c:8)
==9762== Address 0x520404a is 0 bytes after a block of size 10 alloc'd
==9762== at 0x4C2DB8F: malloc (in /usr/lib/valgrind/vgpreload_memcheck-amd64-linux.so)
==9762== by 0x400577: main (lab1_3.c:5)
==9762==
==9762==
==9762== HEAP SUMMARY:
==9762== in use at exit: 30 bytes in 2 blocks
==9762== total heap usage: 2 allocs, 0 frees, 30 bytes allocated
==9762==
==9762== 10 bytes in 1 blocks are definitely lost in loss record 1 of 2
==9762== at 0x4C2DB8F: malloc (in /usr/lib/valgrind/vgpreload_memcheck-amd64-linux.so)
==9762== by 0x400577: main (lab1_3.c:5)
==9762==
==9762== 20 bytes in 1 blocks are definitely lost in loss record 2 of 2
==9762== at 0x4C2DB8F: malloc (in /usr/lib/valgrind/vgpreload_memcheck-amd64-linux.so)
==9762== by 0x400585: main (lab1_3.c:6)
==9762==
==9762== LEAK SUMMARY:
==9762== definitely lost: 30 bytes in 2 blocks
==9762== indirectly lost: 0 bytes in 0 blocks
==9762== possibly lost: 0 bytes in 0 blocks
==9762== still reachable: 0 bytes in 0 blocks
==9762== suppressed: 0 bytes in 0 blocks
==9762==
==9762== For counts of detected and suppressed errors, rerun with: -v
==9762== ERROR SUMMARY: 3 errors from 3 contexts (suppressed: 0 from 0)
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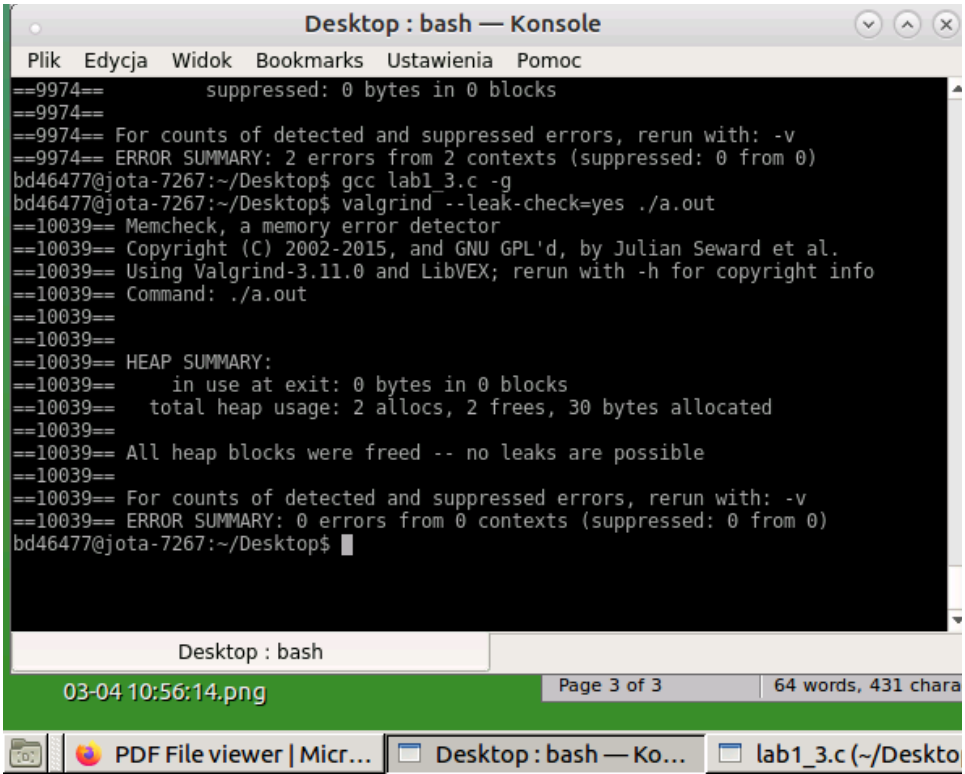
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==9974== suppressed: 0 bytes in 0 blocks
==9974==
==9974== For counts of detected and suppressed errors, rerun with: -v
==9974== ERROR SUMMARY: 2 errors from 2 contexts (suppressed: 0 from 0)
bd46477@jota-7267:~/Desktop$ gcc lab1_3.c -g
bd46477@jota-7267:~/Desktop$ valgrind --leak-check=yes ./a.out
==10039== Memcheck, a memory error detector
==10039== Copyright (C) 2002-2015, and GNU GPL'd, by Julian Seward et al.
==10039== Using Valgrind-3.11.0 and LibVEX; rerun with -h for copyright info
==10039== Command: ./a.out
==10039==
==10039==
==10039== HEAP SUMMARY:
==10039== in use at exit: 0 bytes in 0 blocks
==10039== total heap usage: 2 allocs, 2 frees, 30 bytes allocated
==10039==
==10039== All heap blocks were freed -- no leaks are possible
==10039==
==10039== For counts of detected and suppressed errors, rerun with: -v
==10039== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
bd46477@jota-7267:~/Desktop$
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