

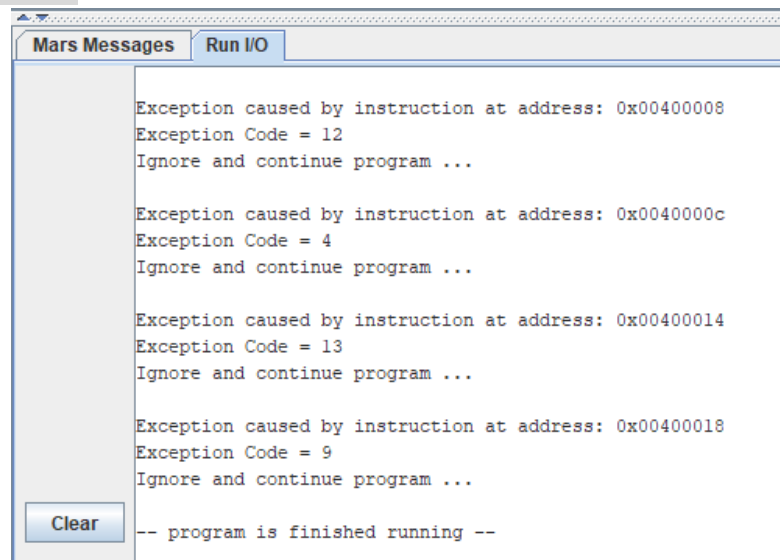
## Lab08: Exceptions and I/O

Note: You need to follow the printing style in the sample runs.

### Task(s):

1. Write a complete program that uses the exception handler of **Figure 8.7** (in Lab8) to generate multiple exceptions. The exception handler should report the **address** of the instruction that caused the exception, the exception **code**, and should **resume** the program after handling each exception. Insert instructions that cause **overflow**, **invalid memory addresses**, **trap** and **break** instructions.

### SAMPLE RUN:



```
Mars Messages Run I/O

Exception caused by instruction at address: 0x00400008
Exception Code = 12
Ignore and continue program ...

Exception caused by instruction at address: 0x0040000c
Exception Code = 4
Ignore and continue program ...

Exception caused by instruction at address: 0x00400014
Exception Code = 13
Ignore and continue program ...

Exception caused by instruction at address: 0x00400018
Exception Code = 9
Ignore and continue program ...

Clear -- program is finished running --
```

2. Write a MIPS assembly program that reads a string (one character at a time) from the user using Memory Mapped I/O (**DO NOT use syscall**). **Loop** over each character and **flip** its case (i.e. the uppercase should be small case and vice versa). Finally, **print** the modified String (one character at a time) again using Memory Mapped I/O (**DO NOT use syscall**).

### SAMPLE RUN:

