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Lab 8: Exception handling and IO

# Objectives:

* Learn and define the exceptions
* Define the coprocessor and what it is
* The codes of the exceptions
* How to handle exceptions
* Know the memory mapped I/O

# Introduction:

We learned how the exceptions is done in MIPS and how we can handle it, and then we learned about the coprocessor and how it works, then discussed about the type of exceptions and how it represented in MIPS then we saw a live example about the exception handling

# Tasks:

Task1 Requirement: handle exception division by zero

Approach: firstly, do the program as it is normal division program then we make .kdata and .ktext and use trap exception to find the exception then we handle it be reversing the pc to the input and ask the user to change the dividend to something else than zero.

Task2 Requirement: using memory mapped I/O to change the letters from caps to small and vice versa

Approach: we use the already provided code to use the mapped memory I/O and then we decide if each character is lower or upper and change it according to that and if it is not then we let it be as it is

# Conclusion:

Firstly, we learned the definitions of exceptions and how it works then learned the way MIPS deal with the exceptions, and we found the usage of the coprocessor and how to use it probably then we learned the write way to over written the exception handler in MIPS and make our exception handler.