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# Exercise Sheet 5

## Computer Engineering and Communication Networks

Handout: 24.10.2019
Discussion: 31.10.2019 (start 10:00 a.m.)

### 1. Computer Engineering

1.1. What components from the von-Neunam architecture are inside a micro-processor?
1.2. What is the purpose of the BIOS?
1.3. In which type of memory the BIOS is usually stored?
1.4. What are exceptions and interrupts? Give an example of an interruption and an example of an exception.
1.5. Where does the micro-processor stores the data when performing a given operation?
1.6. What do flag registers store? How many bits do they store?
1.7. Where does the stack is typically located? Which principle is used to store/fetching data? Name the two possible operations in a stack.
1.8. State the stack operations necessary to implement the mathematical operations below. Use the zero addresses instruction type.
   a) $C:=A+B$
   b) X = (A+B)*(C+D)
1.9. Give an example of:
   a) Problem-oriented language.
   b) Assembly language.
1.10. How does the typical storage hierarchy look like?
1.11. What is the purpose of busses and interfaces?
1.12. What is the difference between a Hard Disk Drive (HDD) and a Solid State Disk (SSD)?