Datein:

-TLE

-Package for Sizes and subtypes

-Package for mnemonics

-Package for Constants and symbolic register

-Package memory content

-Package auxillery functions

-Package for instructions encoding

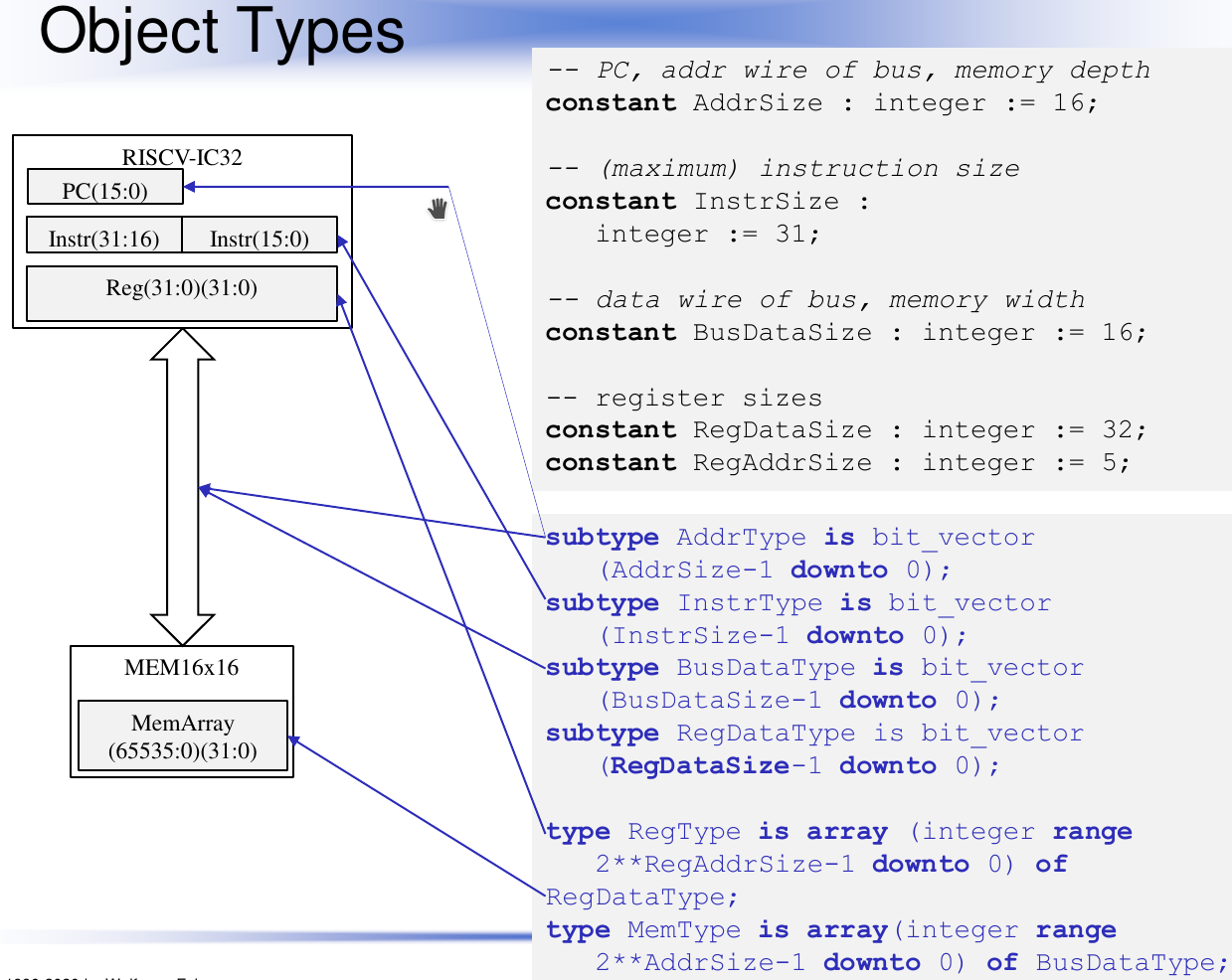
-Testbenche

# TLE

Simple TLE wie im erstens Projekt.

# Package for Sizes and Subtypes: Yu-Hung

Risc-V.PDF Seite.6



# Package for mnemonics – Voon

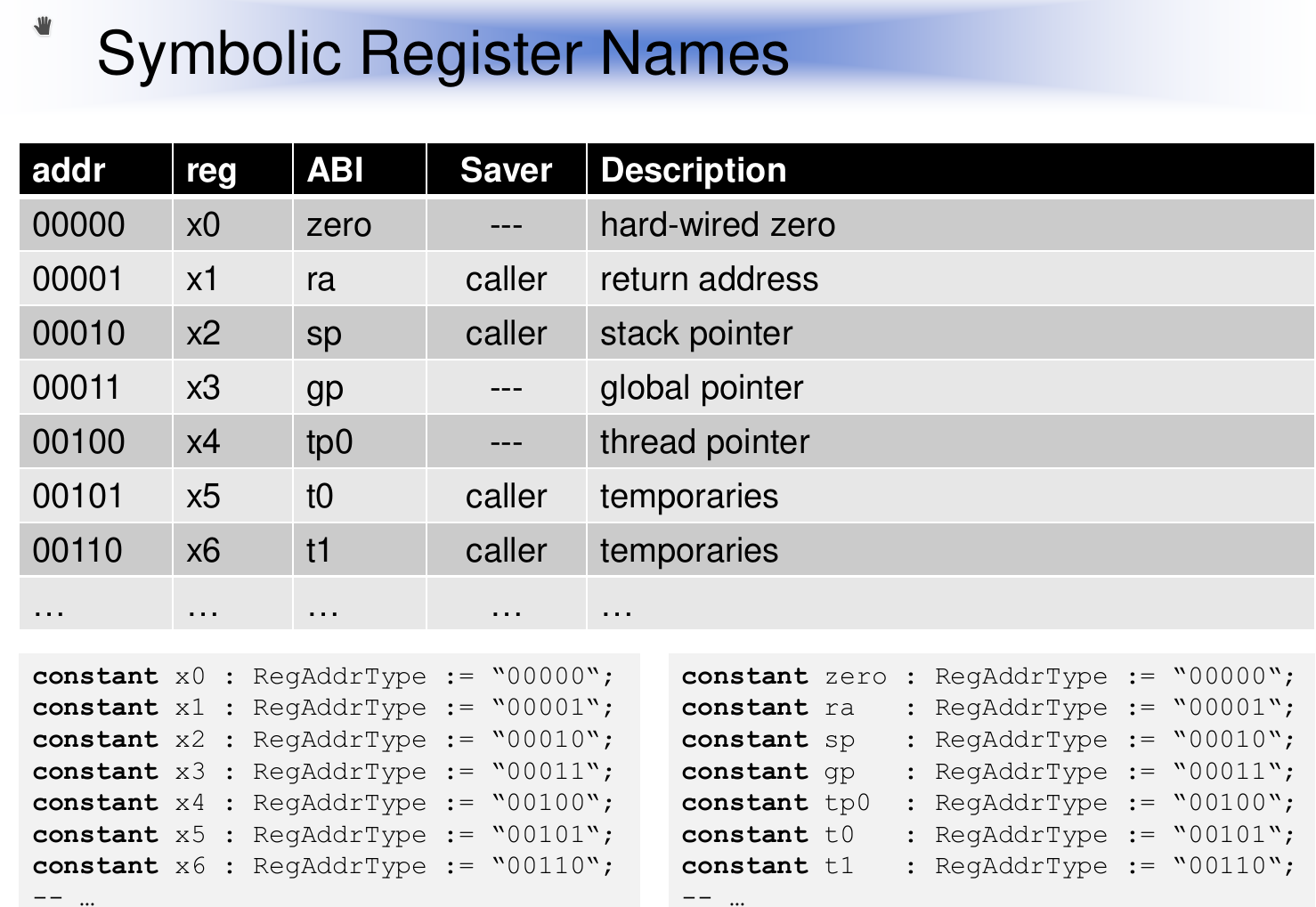
Risc-V.PDF Seite.8



# LB – 8 bit or ….? Depends on the lecture

# Package for Constants and symbolic register: Arun

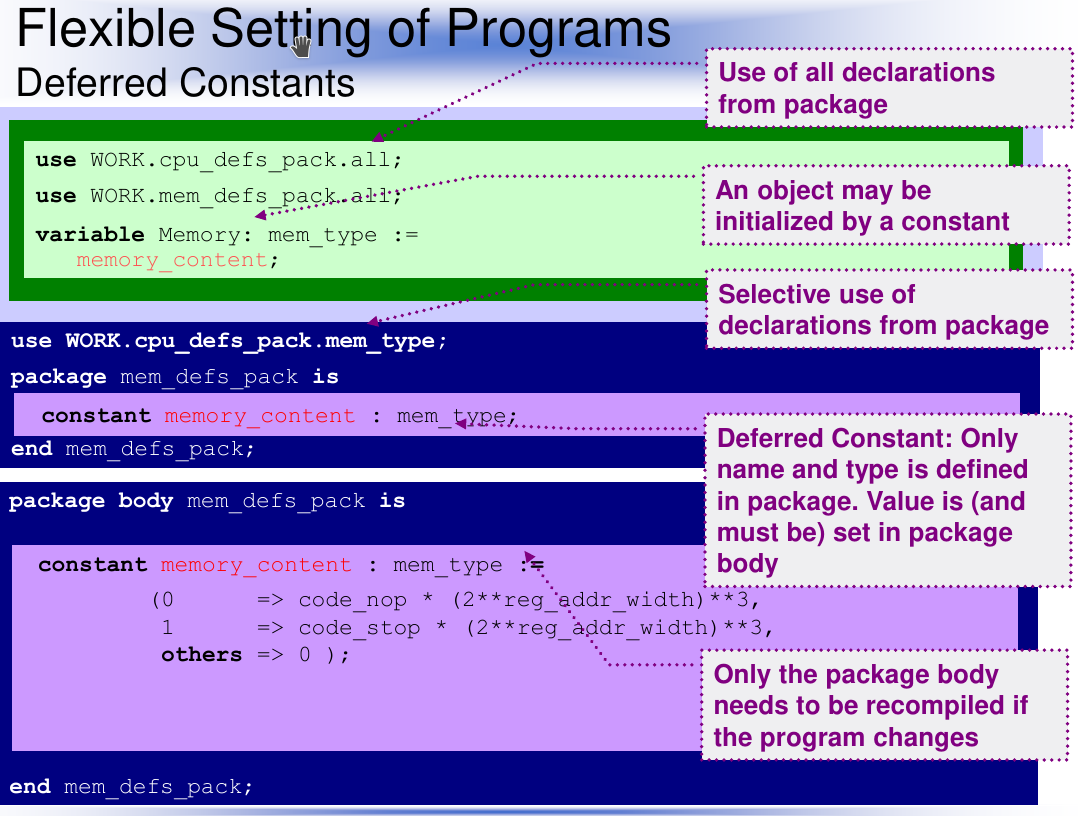
Risc-V.PDF Seite.35



Unsere Symbolic Register müssen als Integer angegeben warden, weil Reg Addressen als Integer definiert sind.

# -Package memory content: Voon

P03-1 BasicRegisterOperation.PDF Seite.25

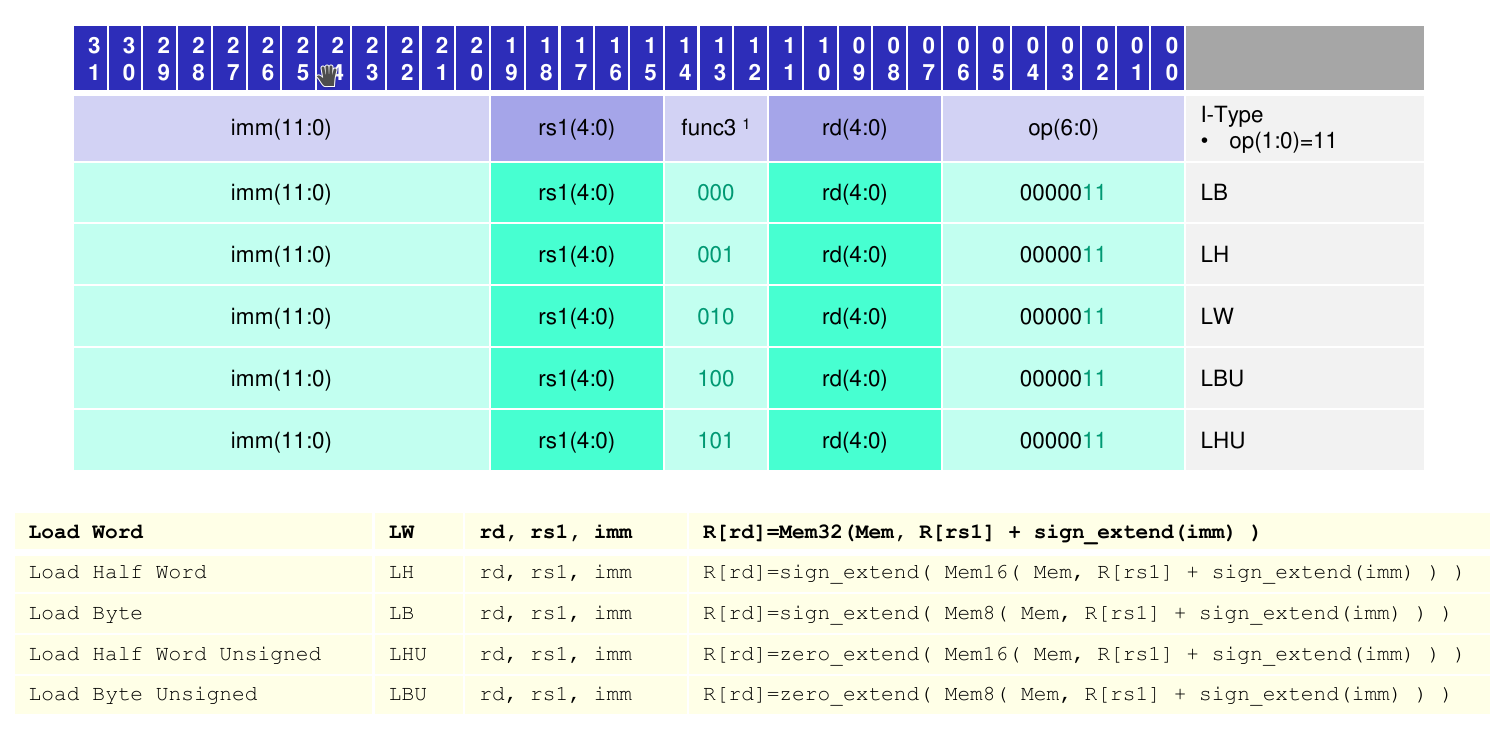
Hardcoded Inhalt von Mem.

# -Package auxillery functions

Conversions to string or formating string (auch bit-String gemeint)

# Package for instruction decoding: Tiemo

Risc-V.pdf Seite.10

Jump Instruction:

-Risc v spec S.38

-JAL: (unconditional jump)

1. Just jump to destination register rd: PC := Mem(rd)
2. No return possible with this Instruction

-JALR (Jump with return address)

1. Save address after jump Instruction to rd(often Register x1)
2. Add imm to rs1
3. Jump to rs1+imm (something about LSB to 0, don’t understand): PC := Mem(rs1+imm)

-Arithmetic Operations

-Risc v spec S.37

-ADD

-ADDI

-SUB

-Logical Instructions

-Risc v spec S.37

-AND

-OR

-XOR

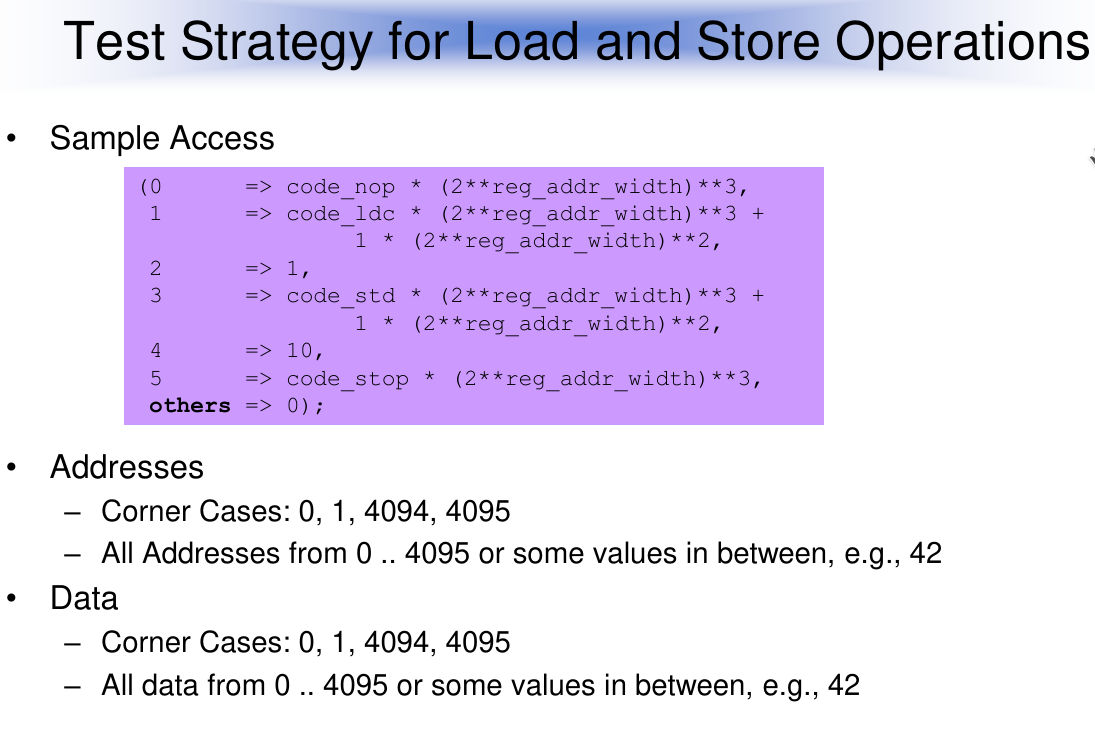
-XORI

-ORI

-ANDI

# Testbench: Voon

Testbench to test Cornercases.



**Good to know/read**

A page of a instruction manual

Description automatically generated

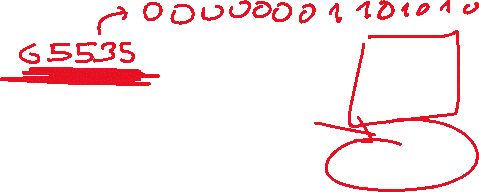
Risc V spec pdf, chapter 2

**Process**

A close-up of a box

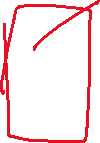
Description automatically generatedA diagram of a computer program

Description automatically generated



1. Input (.txt file) A grey cylinder with black text

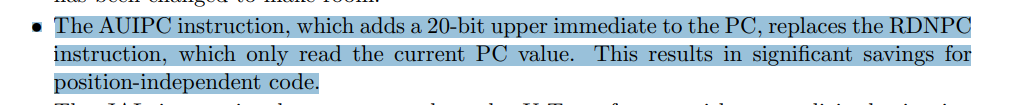
   Description automatically generated to memory; Needed:



* 1. memory\_content - Voon
  2. mnemonics
  3. symbolic register names to bit\_vector

1. Behaviour of CPU:
   1. Load
   2. Store



* 1. Arithmetic - Arun
  2. Arithmetic with immediate - Arun
  3. Jump w/o conditions
  4. Jump with return address
  5. Branches
  6. Load Upper immediate - Voon
  7. AUI PC – Yu Hung
  8. Stop

1. Memory Dump + Trace
   1. Result area (Addr: 64535 – 65535) “1000 Zeilen”