

Übungen zu Systemnahe Programmierung in C (SPiC) – Sommersemester 2026

Übung 4

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Lehrstuhl für Informatik 4
Systemsoftware



Friedrich-Alexander-Universität
Technische Fakultät

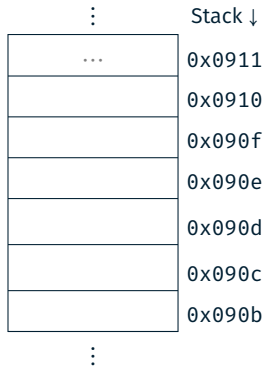
Vorstellung Aufgabe 2

Zeiger & Felder



- Variable: `uint8_t x`
- Zeiger: `uint8_t *y`
- Adressoperator: `&x`
- Verweisoperator: `*y`

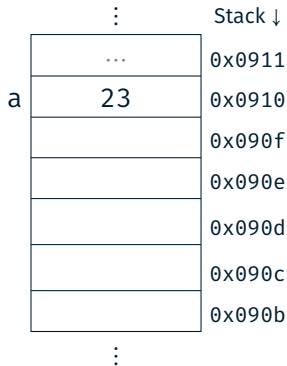
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01 uint8_t a = 23;
02 uint8_t b = 42;
03 uint8_t * p = &a;
04 *p = 66;
05 p = &b;
06 *p -= 40;
07 uint8_t c = *p;
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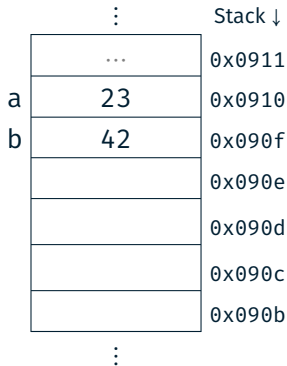


Achtung: Die genaue Anordnung der Variablen auf dem Stack ist abhängig vom Übersetzer und den gewählten Optimierungen!



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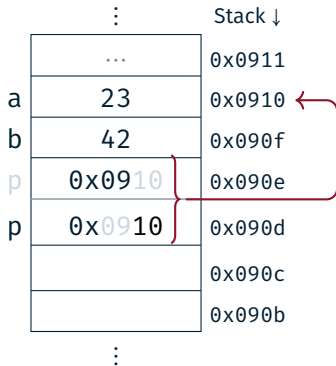


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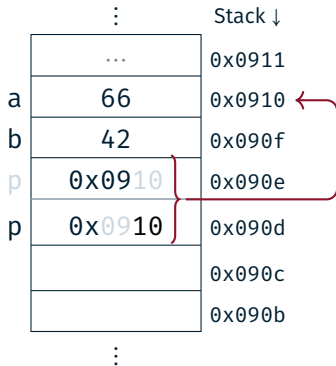


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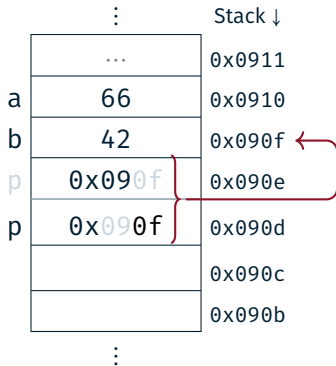


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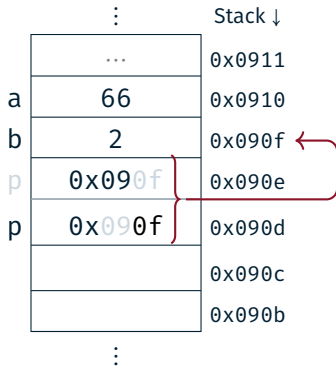


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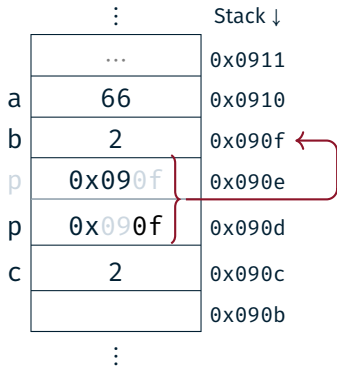


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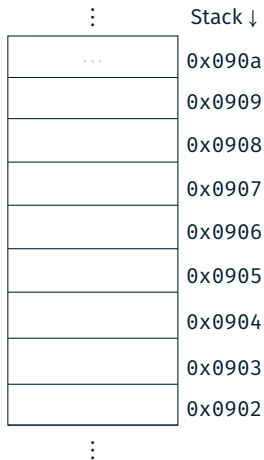


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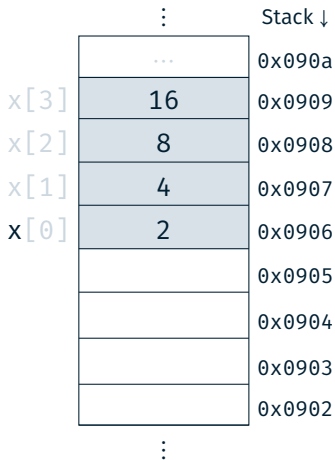
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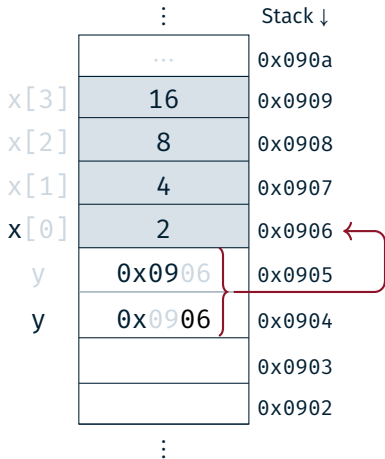
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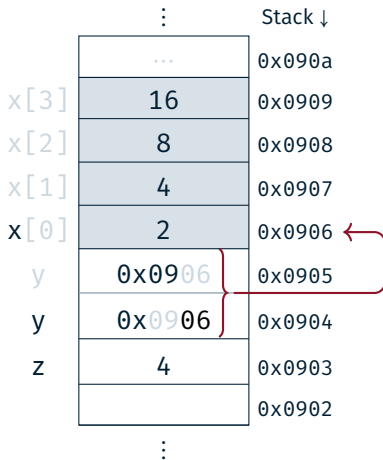
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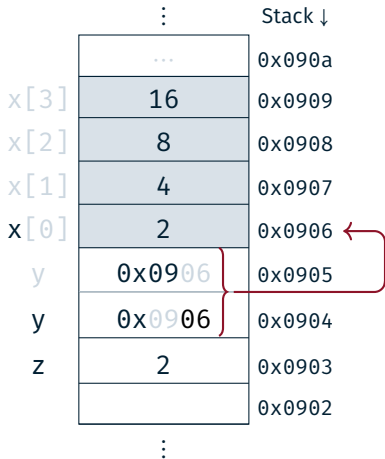
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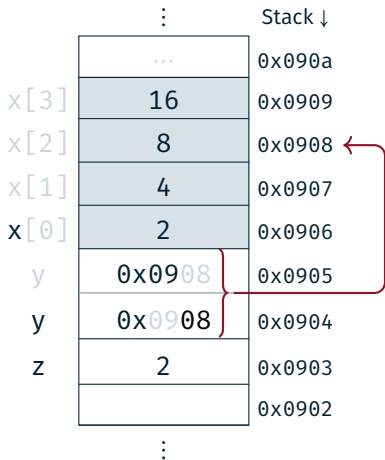
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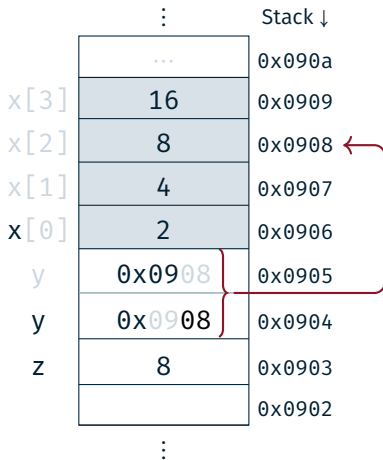
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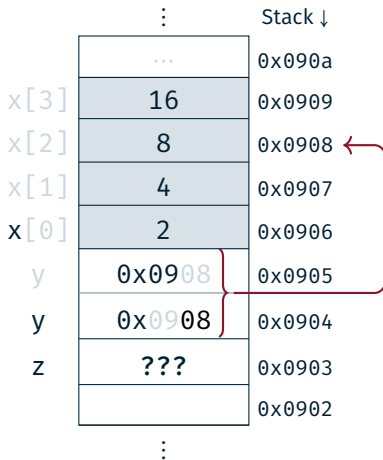


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Undefiniertes Verhalten!

Felder Zugriff außerhalb des definierten Bereichs



Hands-on: Zeiger

Kein Screencast



- Call-by-Value vs. Call-by-Reference
- Zeiger und Felder
- Zeigerarithmetik
- `struct` für GPS-Koordinaten
- Feld von GPS-Koordinaten
- Funktionszeiger

Kompilierbar für das SPiCboard (serielle Konsole), den SPiCsim oder Linux

Quellcode:

<https://sys.cs.fau.de/extern/lehre/ss26/spic/uebung/material/pointer.c>