

DAIMLER



Pointer & Adressen

Dynamische Speicherallokierung

Q1 2022 Wiessler

A large, stylized, glowing blue 'TT' logo, which is a common symbol for the Mercedes-Benz brand, positioned in the center of the slide.

TOMORROW. TOGETHER.

Dynamische Speicherallokierung

<div>myVec[0]</div> <div>myVec[1]</div> <div>myVec[2]</div>	100	00100011	125	00001000	150	00000010	175	11100001	200	01111000	225	01001011	250	01001101	275	01001000
	101	11010100	126	10010011	151	01110101	176	00001011	201	11101000	226	01101101	251	11000100	276	10101110
	102	00110001	127	10001101	152	00101000	177	11110101	202	11000110	227	01011000	252	01101101	277	11100011
	103	01010011	128	01011101	153	01111000	178	01101011	203	10101101	228	01101011	253	00010010	278	10000011
	104	11000011	129	11101011	154	11010001	179	10000101	204	01110101	229	00001100	254	11010011	279	10010101
	105	10000010	130	01011101	155	11001011	180	10010111	205	00010101	230	00000110	255	11010101	280	00100000
	106	10100101	131	01000000	156	00011100	181	10100000	206	01011000	231	11100101	256	01010100	281	10101010
	107	10001111	132	11010100	157	10100111	182	00010001	207	00101101	232	11111111	257	10100011	282	00001001
	108	00011101	133	01001011	158	00110101	183	10101001	208	01001100	233	11000011	258	11010001	283	00110110
	109	10101000	134	00110001	159	10111011	184	11000010	209	11111110	234	10100101	259	11100001	284	11010000
	110	11110000	135	00101100	160	11100100	185	10001001	210	00111111	235	00001110	260	11000100	285	11110001
	111	10100001	136	01011110	161	01011110	186	10100010	211	00101000	236	00001010	261	01110110	286	00010100
	112	10000101	137	00000001	162	01111111	187	11011010	212	01001000	237	00101111	262	01010101	287	01010101
	113	10111101	138	10001001	163	10111011	188	00101001	213	01101110	238	01010010	263	11111100	288	11110010
	114	01111101	139	11111010	164	01001010	189	11011010	214	11110010	239	11011000	264	10011001	289	10011010
	115	10100110	140	11111000	165	11000011	190	00010011	215	10001101	240	01110101	265	10111110	290	01010011
	116	10110010	141	10011101	166	00010101	191	01011111	216	11110000	241	10101101	266	01101001	291	10011010
	117	11000111	142	01100010	167	10011111	192	00010000	217	01100100	242	11111011	267	01011100	292	11100000
118	00001110	143	11110000	168	00001100	193	10001100	218	01010000	243	11010101	268	01100101	293	01101110	
119	01011001	144	01101011	169	10101101	194	00001011	219	00010100	244	10001001	269	01101101	294	11100001	
120	01011000	145	01111100	170	10011100	195	11101010	220	11011111	245	00010010	270	10010001	295	11101110	
121	10010010	146	10001110	171	10000010	196	11100011	221	11100101	246	01010000	271	00001001	296	00100111	
122	10000000	147	10111101	172	11111001	197	11001101	222	10110001	247	10000000	272	10001100	297	10100110	
123	10110010	148	00010011	173	01100111	198	11111010	223	11010000	248	11000101	273	10111111	298	10101111	
124	01100000	149	01001100	174	01100001	199	10000100	224	10000101	249	10101100	274	01011100	299	01100101	

```
int myVar;
```

myVar -> -13
&myVar -> 100

```
char myChar;
```

myChar -> a
&myChar -> 126

```
int *myVec = malloc(sizeof(int)*3);
```

*myVec	-> 789	&(*myVec)	-> 106
myVec[0]	-> 789	&(myVec[0])	-> 106
(myVec+1)	-> -9	&((myVec+1))	-> 110
myVec[1]	-> -9	&(myVec[1])	-> 110
(myVec+2)	-> 123	&((myVec+2))	-> 114
myVec[2]	-> 123	&(myVec[2])	-> 114

```
double *myVec2 = malloc(sizeof(double)*4);
```

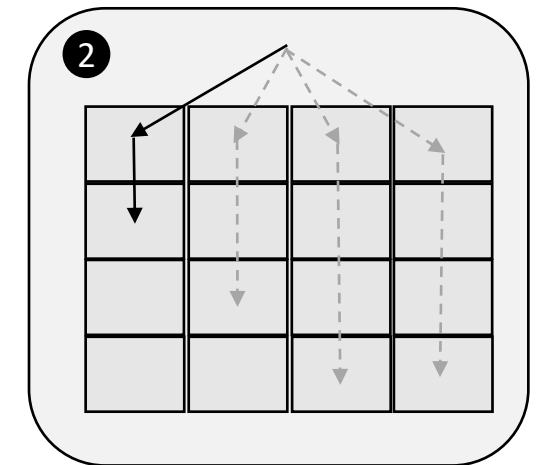
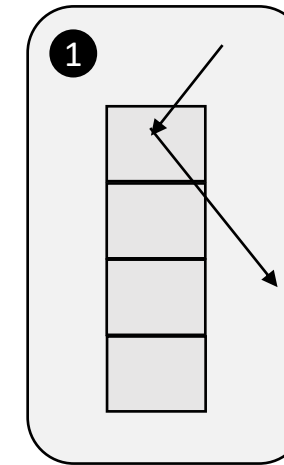
*myVec2	-> 9.56	&*myVec2	-> 150
(myVec2+1)	-> -0.6	&(myVec2+1)	-> 158
myVec2[2]	-> 123	&myVec2[2]	-> 166
(myVec2+3)	-> 7.6	&(myVec2+2)	-> 174

Dynamische Speicherallokierung

```
int **myMat;
```

- 1 `myMat = malloc(sizeof(int)*4);`
- 2 `for(int i = 0; i < 4; i++){`
`myMat[i] = malloc(sizeof(int)*4);`
`}`

100	00100011	125	00001000	150	00000010	175	11100001	200	01111000	225	01001011	250	01001101	275	01001000
101	11010100	126	10010011	151	01110101	176	00001011	201	11101000	226	01101101	251	11001000	276	10101110
102	00110001	127	10001101	152	00101000	177	11110101	202	11000110	227	01011000	252	01101101	277	11100011
103	01010011	128	01011101	153	01111000	178	01101011	203	10101101	228	01101011	253	00010010	278	10000011
104	11000011	129	11101011	154	11010001	179	10000101	204	01110101	229	00001100	254	11010011	279	10010101
105	10000010	130	01011101	155	11001011	180	10010111	205	00010101	230	00000110	255	11010101	280	00100000
106	10100101	131	01000000	156	00011100	181	10100000	206	01011000	231	11100101	256	01010100	281	10101010
107	10001111	132	11010100	157	10100111	182	00010001	207	00101101	232	11111111	257	10100011	282	00001001
108	00011101	133	01001011	158	00110101	183	10101001	208	01001100	233	11000011	258	11010001	283	00110110
109	10101000	134	00110001	159	10111011	184	11000010	209	11111110	234	10100101	259	11100001	284	11010000
110	11110000	135	00101100	160	11100100	185	10001001	210	00111111	235	00001110	260	11000100	285	11110001
111	10100001	136	01011110	161	01011110	186	10100010	211	00101000	236	00001010	261	01110110	286	00010100
112	10000101	137	00000001	162	01111111	187	11011010	212	01001000	237	00101111	262	01010101	287	01010101
113	10111101	138	10001001	163	10111011	188	00101001	213	01101110	238	01010010	263	11111100	288	11110010
114	01111101	139	11111010	164	01001010	189	11011010	214	11110010	239	11011000	264	10011001	289	10011010
115	10100110	140	11111000	165	11000011	190	00010011	215	10001101	240	01110101	265	10111110	290	01010011
116	10110010	141	10011101	166	00010101	191	01011111	216	11110000	241	10101101	266	01101001	291	10011010
117	11000111	142	01100010	167	10011111	192	00010000	217	01100100	242	11111011	267	01011100	292	11100000
118	00001110	143	11110000	168	00001100	193	10001100	218	01010000	243	11010101	268	01100101	293	01101110
119	01011001	144	01101011	169	10101101	194	00001011	219	00010100	244	10001001	269	01101101	294	11100001
120	01011000	145	01111100	170	10011100	195	11101010	220	11011111	245	00010010	270	10010001	295	11101110
121	10010010	146	10001110	171	10000010	196	11100011	221	11100101	246	01010000	271	00001001	296	00100111
122	10000000	147	10111101	172	11111001	197	11001101	222	10110001	247	10000000	272	10001100	297	10100110
123	10110010	148	00010011	173	01100111	198	11111010	223	11010000	248	11000101	273	10111111	298	10101111
124	01100000	149	01001100	174	01100001	199	10000100	224	10000101	249	10101100	274	01011100	299	01100101



```
myMat[0][0] -> 790    &*myMat[0][0] -> 225
myMat[0][1] -> -99    &*myMat[0][1] -> 229
myMat[0][2] -> 10     &*myMat[0][2] -> 233
myMat[0][3] -> 333    &*myMat[0][3] -> 237
myMat[1][0] -> -89    &*myMat[1][0] -> 241

myMat[3][0] -> 5      &*myMat[3][3] -> 273
myMat[3][3] -> 100    &*myMat[3][3] -> 285
```