```c
/*******************************************/
/* Introduction to Compiler Construction */
/*                                       */
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/*                                       */
/* Example Arrays                        */
/*******************************************/

#include <stdlib.h>
#include <stdio.h>

main() {
  // required
  int i;
  i = 15;

  // optional
  int a1[10];
  a1[9] = 1;

  // optional
  int *a2;
  a2 = malloc(10 * sizeof(int));
  a2[9] = 2;

  // required
  typedef int *array_t;
  array_t a3;
  a3 = malloc(10 * sizeof(int));
  a3[9] = 3;

  // required
  typedef array_t *array_of_arrays_t;
  array_of_arrays_t a4;
  a4 = malloc(2 * sizeof(array_t));
  a4[1] = a3;

  printf("a4[1][9]: %d\n", a4[1][9]);

  // optional
  int a5[2][10];
  a5[1][9] = 4;
}
```