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#include <iostream>

using namespace std;

int main()

{

cout << "sizeof pointers below: " << endl;

cout << "sizeof(int\*): " << sizeof(int\*) << endl; //This prints out 4

cout << "sizes:" << endl;

int b[4][3] = { 30, 60, 90, 101, 201, 301, 402, 502, 602, 703, 803, 903 };

cout << "sizeof(b): " << sizeof(b) << endl; //This prints out 48. The total pointer size of the 2d array.

cout << "sizeof(\*\*b+2): " << sizeof(\*\*b+2) << endl; //This prints out 4. The size of integer 2 is 4.

cout << "sizeof(b+0): " << sizeof(b+0) << endl; //This prints out 4. The pointer to b+0 is 4.

cout << "sizeof(\*(b+0)): " << sizeof( \*(b+0) ) << endl; //This prints out 12. The pointer size of 1d array b+0 is 12.

cout << "sizeof(\*b+0): " << sizeof(\*b+0) << endl; //This prints out 4. The pointer to element b+0.

cout << "sizeof(\*(b+3)+0): " << sizeof( \*(b+3)+0 ) << endl; //This prints out pointer 4.

cout << "sizeof(\*(\*b+3)+3): " << sizeof( \*(\*b+3)+3 ) << endl; //This prints out size 4 for integer.

cout << "sizeof(int\*\*): " << sizeof(int\*\*) << endl; //This prints out 4. The size of pointer.

cout << "b: " << b << endl; //This prints out 11249fe8

cout << "&b: " << &b << endl; //This prints out 11249fe8, the address of b

cout << "b[3]: " << b[3] << endl; //This prints out 1124A00C. the address to the 3rd element

cout << "&b[3]: " << &b[3] << endl; //This prints out 1124A00C. The address to the 3rd element.

cout << "\*b: " << \*b << endl; //This prints out 11249fe8. The address of b

cout << "\*(\*b+0): " << \*(\*b+0) << endl; //This prints out 30. the first element of first 1d array

cout << "\*\*b+3: " << \*\*b+3 << endl; //This prints out 33. It adds 3 to the first element of first 1d array

cout << "\*b+2: " << \*b+2 << endl; //This prints out 1124A000. The address of the second element.

cout << "\*(\*b+1): " << \*(\*b+1) << endl; //This prints out 101. Position b[1][0]

cout << "\*\*(b+3)+3: " << \*\*(b+3)+3 << endl; //This prints out 706. Adds 3 to position b[3][0]

int \*ip = \*(b+2)+1; 11249A004. Pointer to b[2][1]

cout << "ip: " << ip << endl; //This prints out

ip++;

cout << "ip++: " << ip << endl; //This prints out 11249A008 increase by 1 pointer which is 4.

cout << "&b+1: " << &b+1 << endl; //This prints out 1124A018. Went to the end of the entire address.

return 0;

}