//**Print a chessboard**

```
#include<iostream>
using namespace std;

int main(){
	int i,j,k,l;

	typedef char box[5][7];

	box bb,wb,*board[8][8];

	//fill in bb=black box and wb=whitebox
	for(i=0;i<5;i++)
		for( j=0;j<7;j++)
		{wb[i][j]=' ';
		bb[i][j]=char(219);
		}

	//fill board with pointers to bb and wb in alternate positions
	for(i=0;i<8;i++)
		for(j=0;j<8;j++)
			if((i+j)%2==0)
				board[i][j]=&wb;
			else
				board[i][j]=&bb;

	// print the board via the pointers in array board

	// first print upper border
	cout<<"    ";
	for(i=0;i<7*8;i++)
		cout<<'_';
	cout<<endl;

	// now print the board
	for(i=0;i<8;i++)
		for(k=0;k<5;k++)
		{cout<<"    "<<char(179); //print left border
		for(j=0;j<8;j++)
			for(l=0;l<7;l++)
				cout<<(*board[i][j])[k][l];
		cout<<char(179)<<endl; // at end of line print bar and then newline
		}

	//before exiting print lower border
	cout<<"    ";
	for(i=0;i<7*8;i++)
		cout<<char(196);
	cout<<endl;

}
```

// another way – no pointers!!! – Question: How does this work?

```
#include <iostream>
using namespace std;

int main(){
	int i,j,k,l;
	char c=' ';
	for( i=0; i<8; i++)
		for(k=0;k<5; k++)
			{for(j=0; j<8; j++) // print a whole row across
				{if((i+j)%2==0)
					c=' ';
				else
					c=char(219);
				for(l=0; l<7;l++)
					cout<<c;
				}
			cout<<char(179);cout<<endl;// now move to the next line
	}
 //before exiting print lower border

	for(i=0;i<7*8+1;i++)
		cout<<char(196);
	cout<<endl;

	}
```