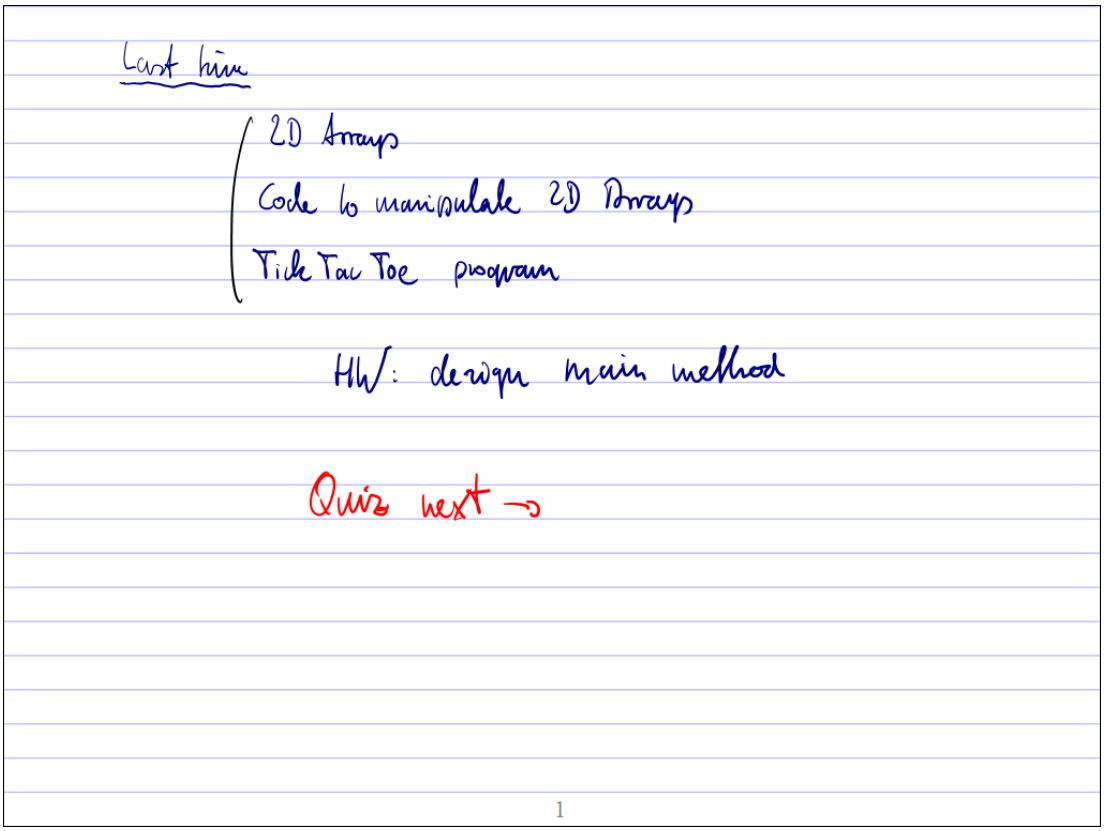
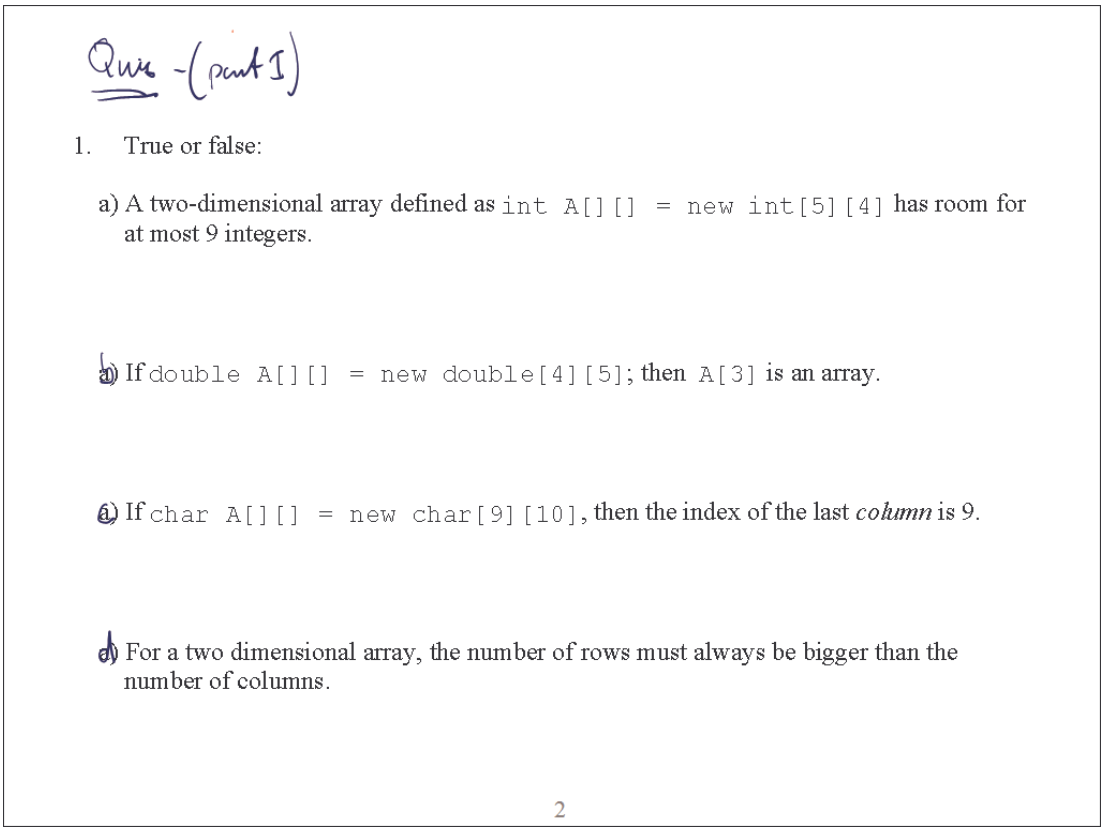
Panel 1



Panel 2



Panel 3

Quiz (part 2)

1. If `int A[][] = new int[4][5]`, then what's the code to add the number in the ***upper right*** to the one in the ***lower left*** corner of the corresponding table (you may use unnamed constants in this example).

2. Suppose `A` is a 2-dimensional array of integers with 4 rows and 5 columns. Write a segment of Java code that finds the sum of all entries in the table.

3

Panel 4

Design the main method for TicTacToe

main:

Need to create board
Need to have 'x' and 'o'

'o' makes move
- check if 'o' wins
- check if tie

'x' makes move
- check if 'x' wins
- check if tie

repeat if nobody won

O	X	O
O	X	X
X	O	O

4

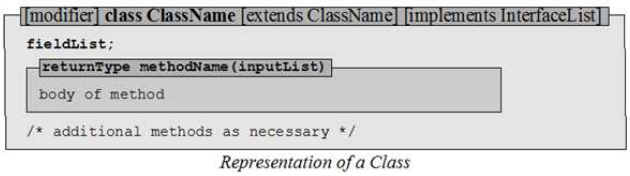
Panel 5

Classes

A class is the fundamental structure in Java. It is composed of two sections, fields to contain data and methods to manipulate data or perform an action. Every class represents a new reference type that can be used by other classes. Classes are defined using the syntax:

```
[public] class ClassName [extends ClassName] [implements InterfaceList]
{  /* list of fields */
   /* list of methods */;
}
```

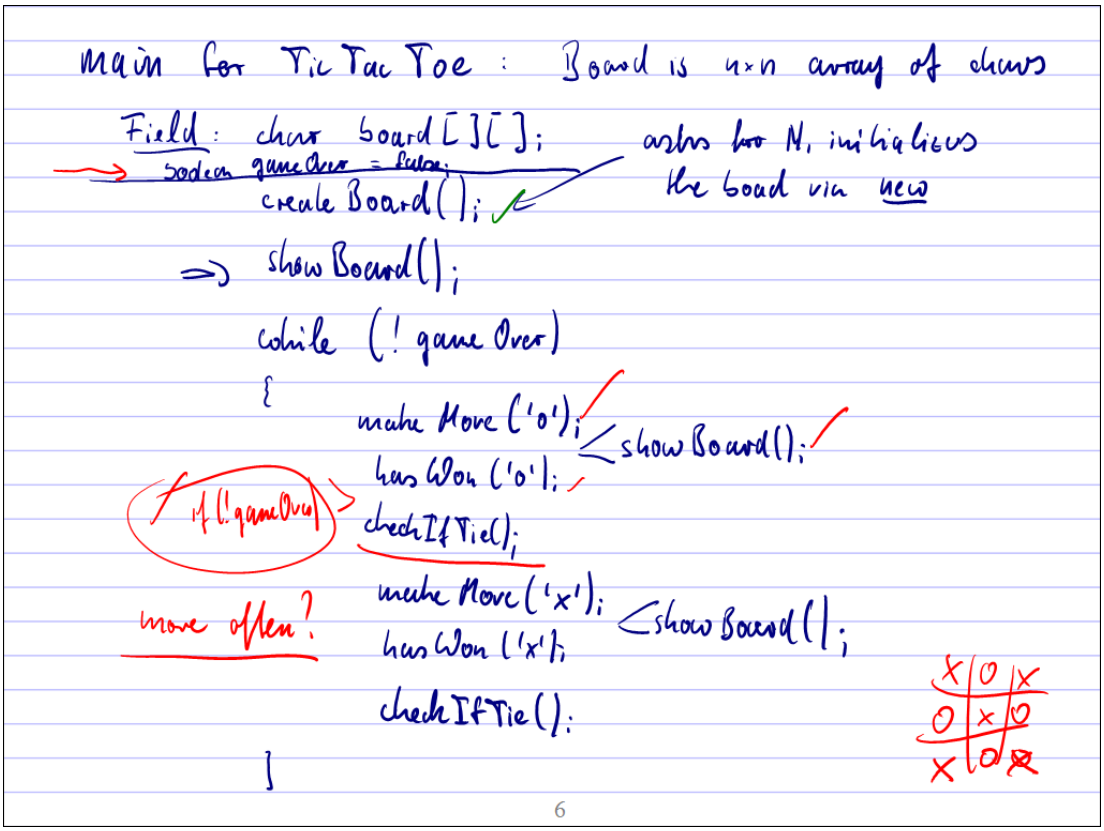
where `ClassName` *is the name of the class,* `extends` *indicates that the class is derived from another class and* `implements` *indicates that the class has attributes in common with one or more interfaces.*



Representation of a Class

5

Panel 6



6

Panel 7

```
createBoard()
{
    // ask user for N
    board = new char[N][N];
    // initialize each slot in the board
    for (int row=0, ...  )
    {
        for (int col=0, ... )
        {
            board[row][col] = '_';
        }
    }
}
```

minus sign

7

Panel 8

showBoard()

did that!

makeMove(char player)

// print: "player, your move"

ask for row ? add/subtract 1 ?

ask for col ?

check if legal move

loop if necessary!

X	O	X
X	O	

8

Panel 9

```
hasWon(char player)
{
    gameOver = checkRows(player);
    if (!gameOver)
        gameOver = checkCols(player);
else? if (!gameOver)
        gameOver = checkMainDiag(player)
else? if (!gameOver)
        gameOver = checkMinorDiag(player)
}
```

9

Panel 10

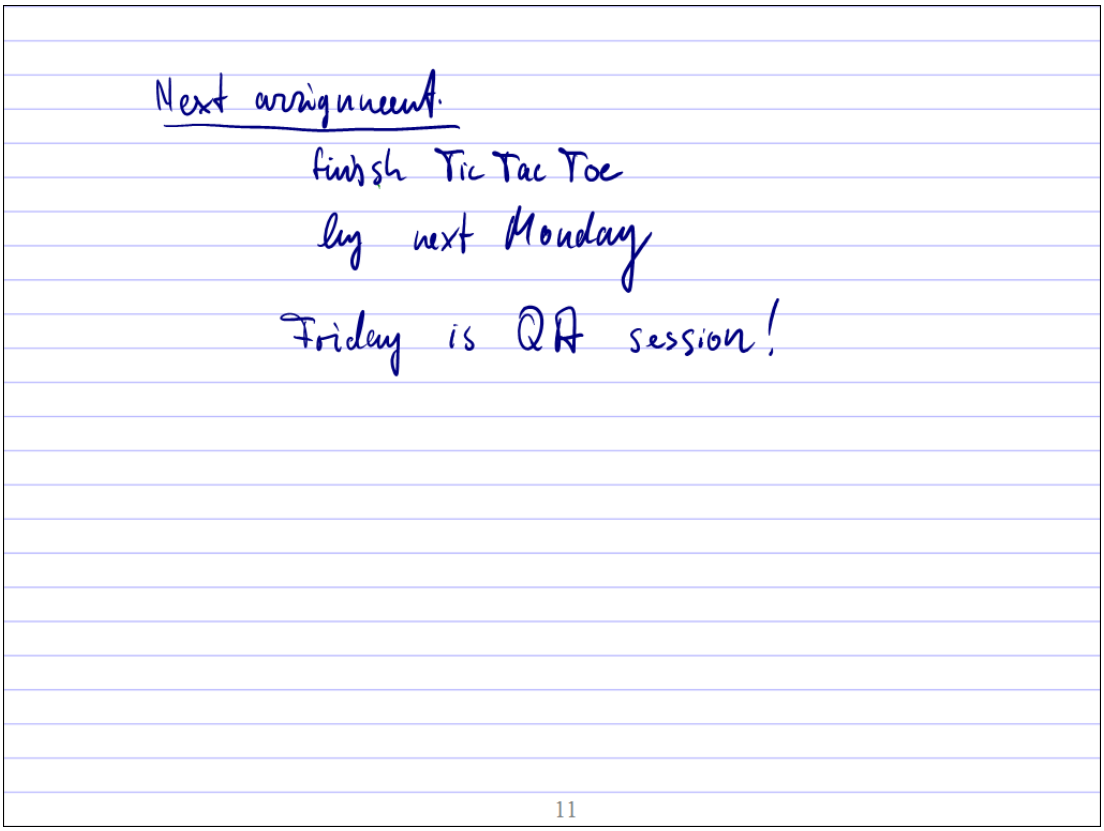
```
boolean checkMainDiag(char player)
{
    int sum = 0;
    for (int i = 0; i < board.length; i++)
    {
        if (board[i][i] == player)
            sum++;
    }
    return (sum == board.length);
}
```

a_{00} a_{01} a_{02} a_{03}
a_{10} a_{11} a_{12} a_{13}
a_{20} a_{21} a_{22} a_{23}
a_{30} a_{31} a_{32} a_{33}

checkMinorDiag
checkRows
checkCols
} left to do!

10

Panel 11


Next assignment:
finish Tic Tac Toe
by next Monday
Friday is QA session!
11