>> Now that we're writing our own classes, UML class diagrams will become more useful to us. UML stands for unified modeling language, and the UML class diagram shows relationships among the classes in a program. There are many other diagrams in UML, but the class diagram is what we'll focus on here.

Again it includes one or more classes. A UML diagram with one class wouldn't be very useful probably, but with multiple classes it, it gets more useful. A simple diagram has only the class name in each box, whereas a detailed class diagram also has sections for the attributes, this is data or fields, and the operations or or methods.

The lines between classes represent associations or or uses. A dashed line shows one class uses another in some way. For example, it might call its methods. So here's an example of a detail class diagram for our rolling dice program. So on the left we've got rolling dice, and notice it only has a main method.

Whereas die on the right has a field faceValue and then here is a list of its of its public methods. In jGRASP we show this a little bit differently. We show a the simplified diagram without the details. And the way you do this, you generally the UML diagram, and then select, a class.

In this case I've got die selected. And then instead of showing the details within the box itself, they're shown over in the info pane. So here we see two fields, max, which is a Private Static being underlined, that's what that represents. And then we've got the one instance variable faceValue.

The constructor shown here is is Die. And then we've got the the four methods. And so again we did that by selecting the die class. And then if the info tab it not already selected, you can, right-click and say Show Info or you can just click the Info tab there on the, bottom left and so on and that shows again field constructors and methods.

So let's take at that, in jGRASP. So here's our program. I'm gonna go ahead and end this. And we've got our in the Browse tab, no, notice here we have the UML diagram symbol. And in this, in order to get a UML diagram in jGRASP, you need to be sure to have a project because the project file says what, what classes actually go in the diagram.

So after that, you just, double-click the Generate, and there it is. And, when you first generate it, these may look very, it could be on top of each other, wherever. But you could just grab them and, and put them like you want them, arrange them, in something that's useful.

Normally we have the calling program at the top. So main, this indicates depends on Die. And if we click on, on Die here, we can see its fields, we see the constructor and the methods and so on. In addition here, if we wanna see the dependencies, and that's shown back on the next slide there.

Here if we wanna see the dependencies between two classes, you can actually just select the, the dash line there. And then they, in the Info tab you'll actually see dependencies. And so here I've selected the red dashed line and, and, and there are the dependencies. So let's go back to, jGRASP now, and I'm gonna select the dependencies.

And we see here that we've got the constructor and then we've got three of the methods. Only three of them are, are being used here. And if we want to navigate to those, this is a sorta of a handy feature when your programs get large. If you want to go see where, again, what this is is a rolling die is using the die class and these are the elements that we're gonna use.

So if I double-click on getFaceBalue, it takes me in the program in rolling die where getFaceValue is used. There it is right there. If I wanna see where the constructor's used it takes me to the first use of that, and so on. So this becomes a a nice navigation aid if you will.