THEORY OF EVOLUTION 03

There is another prerequisite that is required for evolution programming screen cast and that is random library. Random library is basically used to generate random numbers, i will explain you some of the functions in random library, so first of all start with rand in i will just write random dot ranint one to five. So as you can see it has generated an integer from one to five rand int is basically is used to generate a random integer from one to five please note the fact that one to five one and five are includes here it may generate one two three four or five let us run it again and see the randomness involved here now it has generated four again, again it has generated two again four five so as you can see that five is inclusive here that's why it is generating five. Again five four one so basically it has generated every number except three let us run it again nor it has generated three also so random dot ranint is basically used to generate the random integer in the given range, in which the both the range are inclusive i use another function here random dot range please specify the range here i will again specify one to five so let us look at the output of random dot range, sorry its random dot ran range so let us do that this is four one three one two two four three as you can see that it has generated five so ran range basically generated number from one two upper limit minus one it will generate number it will either generate number one two three or four it won't generate five because it generated number from lower limit to upper limit minus one. This is how ran range works. There is another function name random dot random it will generate number from zero to one, it will basically generate decimal numbers from zero to one so let us run it. As you can see that it has generated point four five it will if we run it again it has generated point four zero, point eight three, point five three, point six two, point four seven, point nine two, point six two, point seven three, point eight eight, point eight three, point five two, point zero five four as you can see that every decimal number that has been generated here is from zero to one so random for random is basically used to generate random numbers random decimal numbers from zero to one. There is another thing involved in random dot ranrange let us explore that. And that is for example i want to generate numbers from one to nine so i will write here one comma ten and i want to take a step of two i only want to generate for example odd numbers so i will write two here it will either generate one three five seven or nine let us look at this for example it has generated nine, let us check whether it generates only odd numbers or not one three one three again odd number again odd number odd number odd number odd number again odd number odd number odd number as you can see it is only generating odd numbers so how you can make random dot randrange work like that, you just need to specify the range and also you also need to specify the step that random dot randrange has to take for example here i specify two because if it will generate one then with the step of two it can only generate random odd numbers so if you want to generate random even numbers let us do that too for that i have to start with two then it will generate only even numbers and i will generate till eleven because ten is also odd number even number so let us run it so it has generated eight ten even number even even even even so as you can see that it is only generating even numbers that's how you can make random dot randrange to generate even and odd numbers and many others and many other numbers of

your choice this is how it works. There are many functions involved in random library you can always Google it and explore many other functions so just i will give you brief of that. So here we have many functions involved. Will have random dot choices we have random dot set state get state randrange choice shuffle sample, random dot uniform, random dot triangular, random dot beta i will suggest you to go through all these random library functions they are pretty interesting i will give you a demonstration of another function that is random dot choice let us do that, random dot choice basically generates random numbers from given list so i specify the list here for example i specify one two three four so it can only generated numbers from this particular list that i have specified here so it has generated three one four two as you can see it can only generate number from the particular list, you can also specify the list for example i will specify the list is my list is equal to any number you can specify one one, forty five, sixty seven, eighty nine ok so random dot choice you have to generate from my list so let us try executing it. So it has generated eighty nine since we gave only four numbers eleven, forty five, sixty seven, eighty nine it has generated eighty nine run it again it has generated eleven, eleven again forty five, forty five, eighty nine, eighty nine, forty five as you can see that it is generating number from the list that is specified, we have specified the list has eleven, forty five, sixty seven, eighty nine and it is only generating numbers only from that. So i will encourage you to explore more and more about random libraries it has many other instructing functions too.