BIRTHDAY PARADOX-FIND YOUR TWIN 04

Welcome to the programme screen caste of birthday paradox, first of all let us take the birth dates of some fifty people and try to find out the collisions. Here we will be generating the birth dates of these fifty people randomly in order to generate the birth dates randomly will import the library here that is called random. Let us take the birthday array on list, now as you have to generate the birth dated of fifty people will have a while loop here i is equal to zero while i is less than fifty. First of all let us generate the year randomly, year is equal to random dot randint, randint is the function that is used to generate the integers random, you also need to specify the range in the function randint here i will specify from eighteen ninety five to twenty seventeen, why i particularly choose eighteen ninety five because the oldest person every lived was one twenty two years old so if you subtract one twenty two from twenty seventeen you will get eighteen ninety five, that's why we choose eighteen ninety five i am writing here the oldest person ever lived was one twenty two years old. Now we have to check whether this particular year is leap year or not? Why do we have to check whether this particular year is leap year or not because in order to generate a particular day we have to check that the particular year is a leap year or not because in the month of February in a leap year we have twenty nine days otherwise in the month of February we have twenty eight days so we will also check that the given year is a leap year or not. In order to check whether the given year the randomly generated year is leap year or not we will have if here, if year percent four is equal to is equal to zero and year percent hundred shouldn't be equal to zero or we can just say that year percent four hundred is equal to is equal to zero. Will have a even here leap this is equal to one if the condition satisfies else this is equal to zero. Now let us generate the month randomly, for month we will use the function randint again, month is equal to random dot randint what will be the ranger it will be from one to twelve. Now we are done with generating year and month randomly let us proceed towards day, now let us generate the day randomly. In order to generate the days randomly we will have a nested if else loop here for a nested if else loop will have if month is equal to is equal to two and the given year is the leap year, what do i mean by this? Is this that the month is February and the given year is a leap year so we will generate the day from one to twenty nine that will be random dot randint from one to twenty nine. Else if, if month is equal to is equal to two and leap is equal to is equal to zero, if the month is February but the given year is not a leap year so will have day is equal to random dot randint as one to twenty eight next we have to check please note that the seventh month and the eight month they both have thirty one days so we will have to heart quote this to so will have here the month is equal to is equal to seven or month is equal to is equal to eight will generate the days from one to thirty one next we have to keep the fact in mine if month percent two is not equal to zero and the month is less than seven so we will generate the days from one to thirty one you can easily figure this out, please note the fact you can easily figure this out, why i am writing so because if the given month is in odd numbered month and the month is also less than seven then we can say that we will have to generate the days from one to thirty one. Next condition if it is greater than seven that is the next condition. For that the given month will be a even numbered month,

month two is equal to is equal to zero and month is greater than seven and it is less than twelve too. So we will here day is equal to random dot randint one to thirty one we have specified the condition for twenty eight, twenty nine, thirty one so the rest of the month will obviously comprise of thirty days so we will just have else day is equal to random dot randint from one to thirty this is done. So we have now the birth date of these fifty people plus please note the fact, please not this fact in mind that we don't have it in a specified format, we need to have it in a specified format in order to do that i will generate a, i will import a library here a separate library here that is date time. Next we have to convert it into particular format so i will use the function of date time that date time dot date and i can specify the format here in the round braces will have year month day this is the format i am calling, you can call the any other format but i am calling year month day. Then we have day of year, why do we need to find the day of year? As the professor explained in the lecture that we will only consider the dd mm this is self-explanatory if you want to find out the collisions in the birth date we need to only consider the dd mm of different people so we have the dd mm of different people but we need to generate the day of the year. If you will generate the particular day that the person is born on then we can find out the collisions very easily for example if i am born on second January ninety three that means i am born on second day of the year in the same way we will generate the days of year of these fifty people and try to find out the collisions. In order to get the day of year, we will just use the simple function here please concentrate we have dd that is date in a particular format dot timetuple dot tm y day this is the function that is straight away give you the date of year ok, if you want to code it you can also code it this will be good practice for you but for simplicity sake we will only use the function here. Now we will increment the I variable so that the while loop can proceed and we will also append this particular day of year through the list birthday, appended day of year that is done next sort this particular list when this particular list is ready just sort this. What is sorting? Sorting is basically arranging the elements in ascending or descending order, since we are using the function sort here it will erase the elements in ascending order you can always code it, this will be good exercise for you guys but for simplicity sake we will use the function sort here. Now we are done with the code we just want to print this particular array so that we can get to know the collisions. It will be easy on our mind to find out the collisions if the array sort it that's why we are sorting the array. Just print birthday i and increment this while loop. I think we are done with the programme and let us try to run this programme. See we have a list of birth dates here particularly the day of year, if you want to find the collision lets have the look at the output. We have fifteen fifteen one collision here we have one hundred four one hundred four the second collision, two not four two not four that is the third collision and here and i don't think we have another collision here so will have three collisions in this list of thirty people, we can always increase the number of people here and will get more collisions. Let us try to run this again if we run this again we have forty eight forty eight one collision seventy two seventy two second collision, one eighty eight one eighty eight third collision i don't think so another two eighty three two righty three forth collision so you can always increase the number of people and try to find out the collisions the collisions will increase and you can re run the loop re run this program again and again you can have different number of collisions too. So this program clearly illustrated the presence of the

birthday paradox. I hope this program was useful for you guys and you enjoy it this programming screen cast see you till the next programming screen cast thank you.