DAILY ASSESSMENT FORMAT

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Course:	Basic Statistics by Coursera	USN:	4AL17EC006
Topic:	WEEK 3	Semester & Section:	6th Sem A sec
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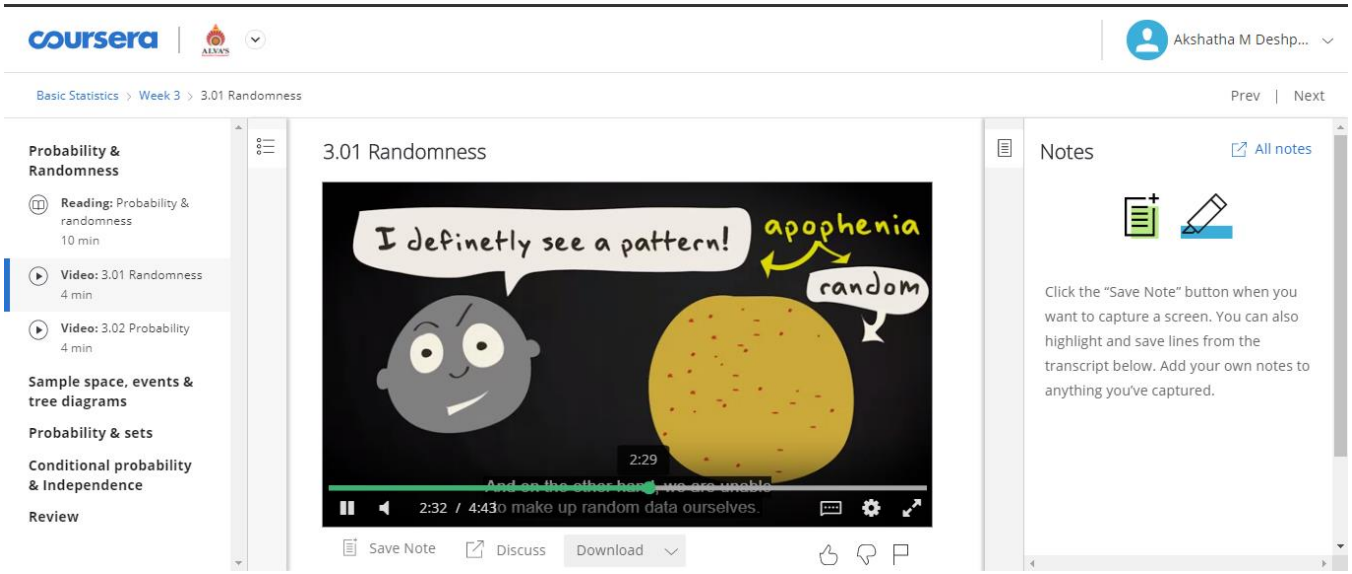
FORENOON SESSION DETAILS

Image of session



Report – Report can be typed or hand written for up to two pages.

Basic Statistics:

Probability & randomnes:

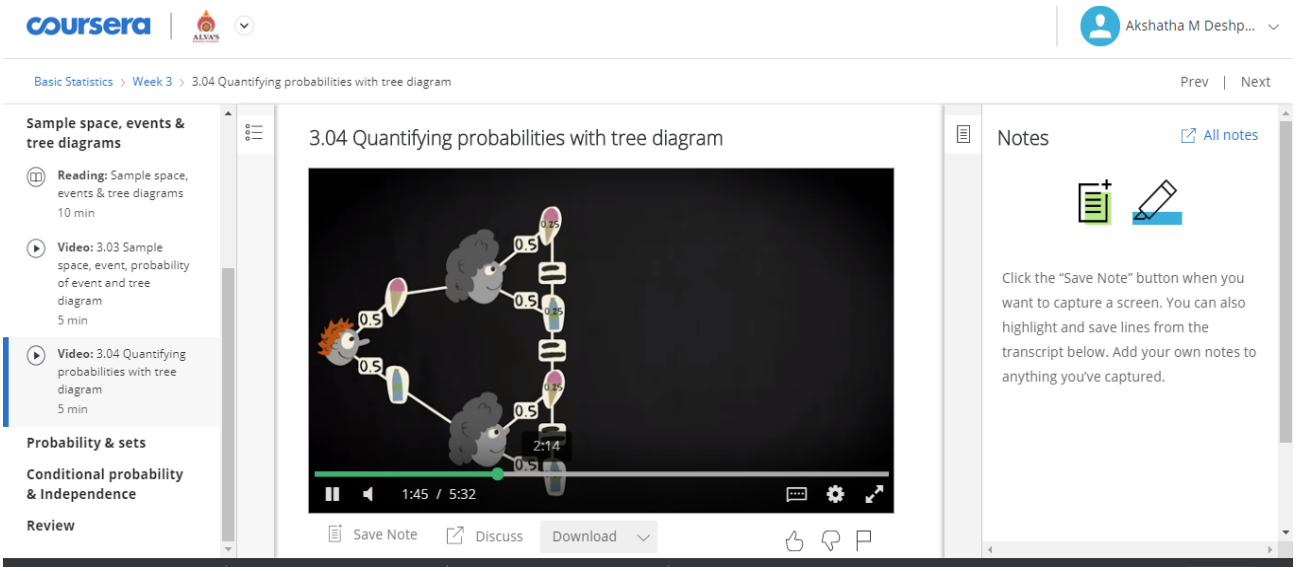
- we can define probability as a way to quantify randomness.
- This explains how this quantification can be accomplished by experiments which record the relative frequency that certain events of interest occur.
- It follows that probabilities are always larger or equal to zero and smaller or equal to one; and also that the sum of the probabilities for all possible events equals one.
- Due to the very nature of random events, the experiments may have to continue for a while before the relative frequencies represent the probabilities accurately, but the law of large numbers dictates that it will do so eventually.

Sample space, events & tree diagrams:

- All the possible outcomes for the experiment form the so-called sample space, and that elementary or combined outcomes in the experiment are called events.

It shows how all events can be organised in a tree-diagram, which helps to understand how events relate to each other.

- At the same time it provides a clear structure to quantify the probabilities relating to each of these events.
- The various probability calculations that can be conducted with support of a tree-diagram are further explained in the second video.



Probability & sets:

- A sample space is an example of a set, and the relationships between the events (sub-sets) that make up a sample space can be effectively described by set-theoretic concepts that together fill up the sample space are called collectively or jointly exhaustive.
- It is shown how the sum of the probabilities associated with disjoint events will be smaller than or equal to 1, while the sum of the probabilities associated with collectively exhaustive events is 1. Finally it explains how the intersection of two events is a subset of both events, containing outcomes that are part of A as well as B.
- We practice with the various set-theoretic concepts by applying them to a familiar example of collecting shells at a beach.
- The concept of a union is explained. It is shown how the union of several events is an event that contains all the outcomes from the original events without duplication, which implies that probability of the union of several events is the sum of the probabilities of the separate events minus the probability of the intersection among the events.

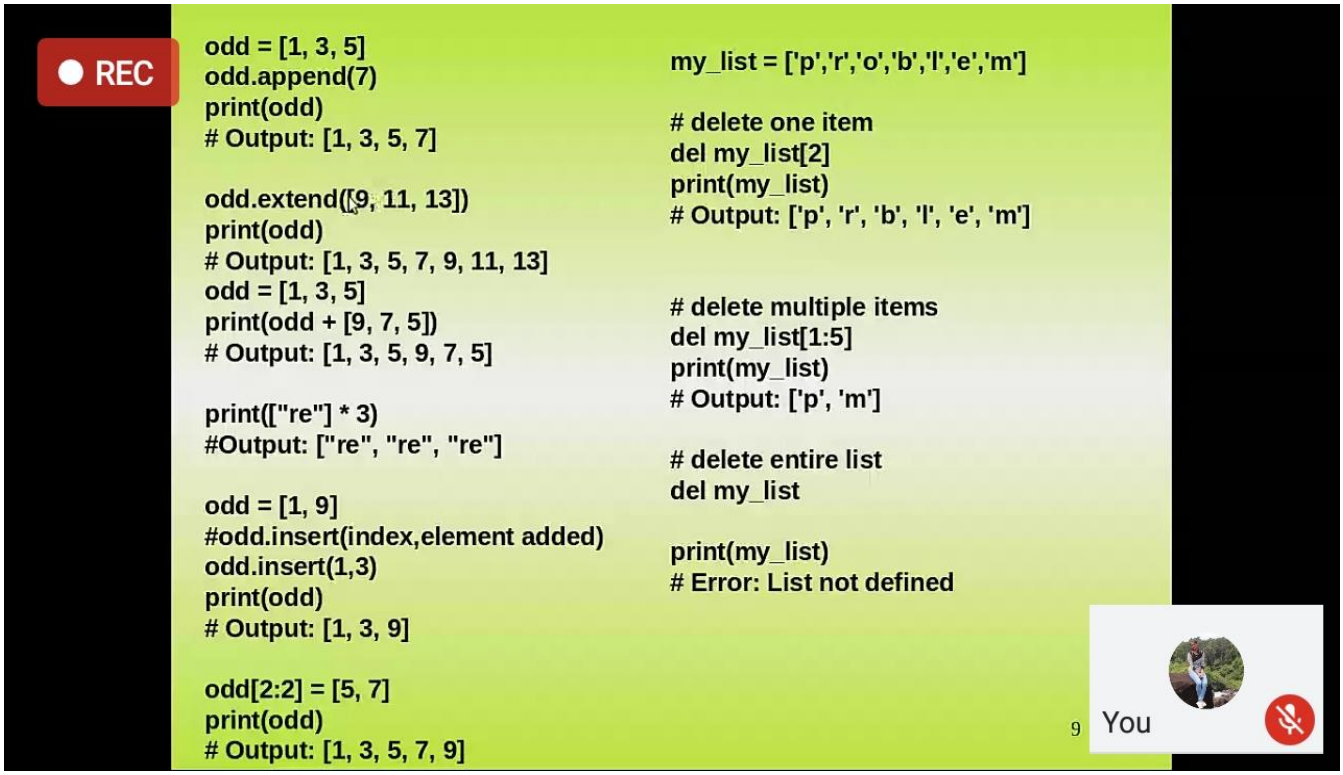
Conditional probability & independence:

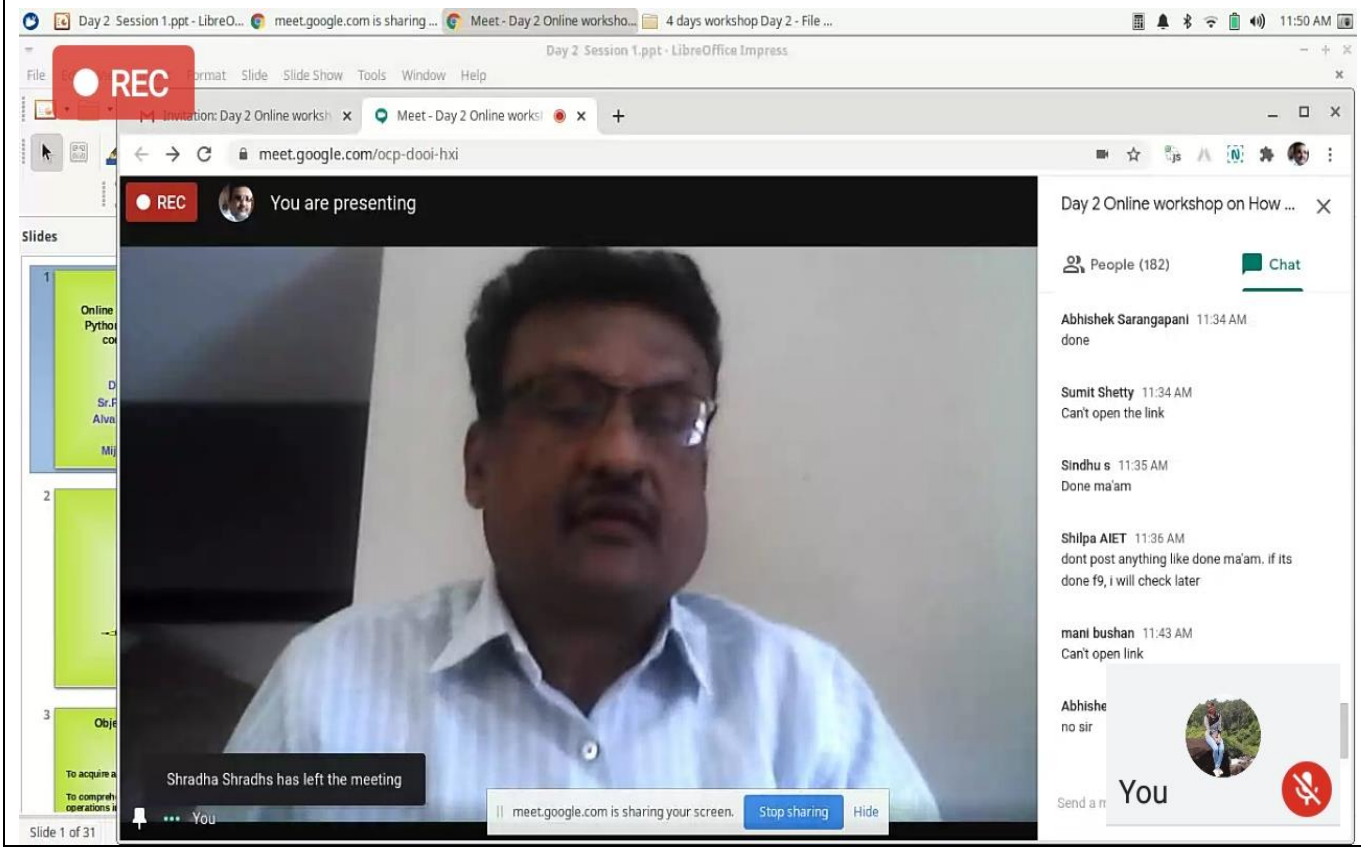
- The probabilities that values of different variables co-occur are called joint probabilities. Such joint probabilities can be summed over one variable to form so-called marginal probabilities (the probabilities for a single variable). In the first

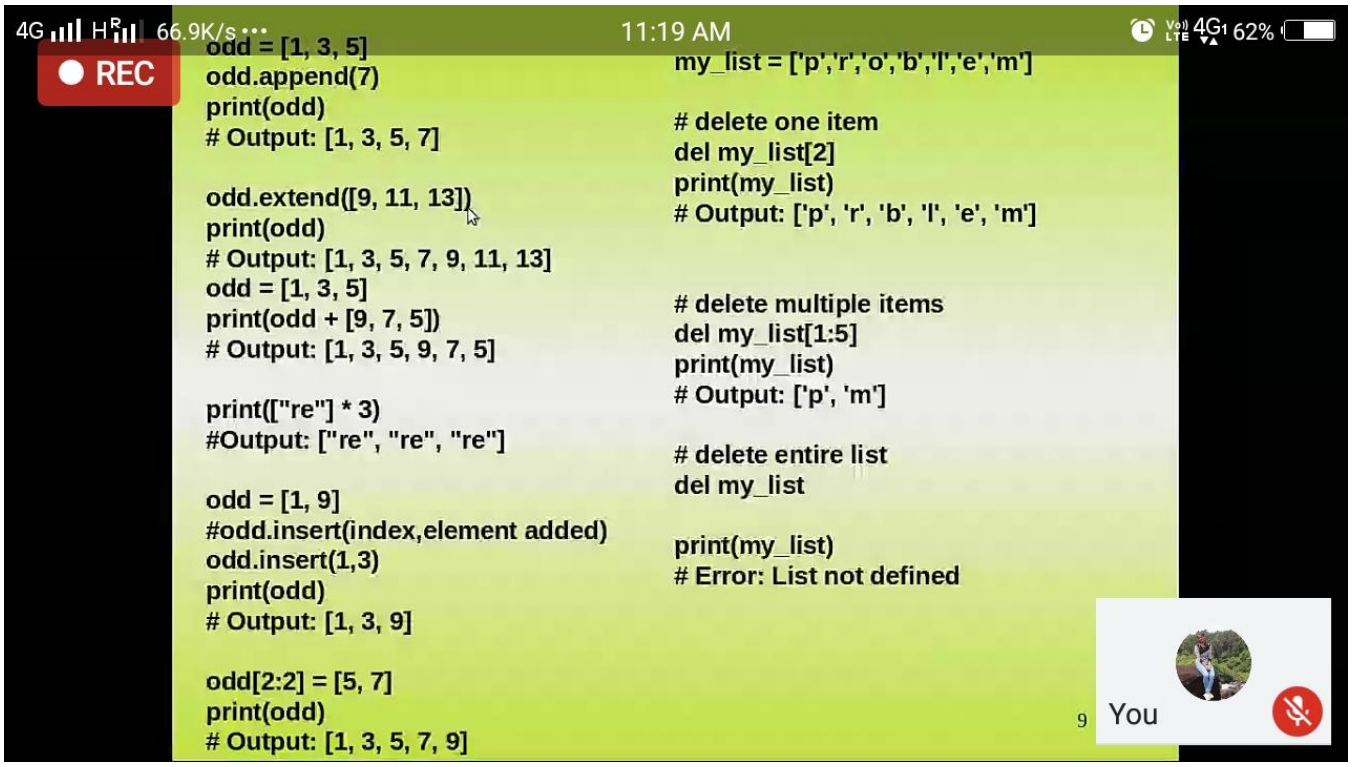
video-lecture these concepts of joint and marginal probability are explained by using an example of beach-visitors which are characterized by gender and activity.

- In the subsequent video the conditional probability is defined and clarified. Conditional probability is the probability of an event, given that another event occurs. In this lecture the example with beach-visitors is used again, but now to illustrate how probabilities of the activity distribution would f.i. change conditional on gender.
- It's an important bit of information because if random events are independent, it simplifies the probability calculations enormously, and it's therefore an assumption that's often made.
- Let me introduce an example. You've made a count of different activities by the people on a beach which you distinguish by gender.
- And you've turned it into a table with probabilities. Joint probabilities in a central block and marginal probabilities here and there. Independence between random events means that knowing the outcome of one event does not influence your knowledge about the outcome of the others.
- In the example, it means that if you know about the gender of a person, it would not influence the probabilities for that person's activities. Or, if you would consider a certain activity, it would not influence the probabilities for gender.
- Mathematically, the conditional probability of A given B equals the joint probability of A and B, divided by the (marginal)probability of event B.
- Counts of interesting phenomena from everyday life are often turned into proportions and interpreted as probabilities.
- By exploiting the power of probabilities calculus the relations among these phenomena can be understood better or used to make predictions.
- Joint and marginal probabilities are two important types of probabilities that are encountered in this context.
- Let's now try to assign probabilities to the various events. Let's assume that R shells are two times as abundant as Q shells, while they both occur in large quantities.
- What would then be the probability of picking up a Q shell? The probability is found by considering the relative frequency of both shells, which is already given in this problem.
- One out of three shells is a Q shell, and two out of three shells is an R shell. So the probability to pick up a Q shell is 1/3. Now, you know the probabilities for a single event of picking up a shell. It's possible to put the probabilities for every event in a tree diagram and start to calculate the probabilities for combined events. For example, what would be the probability to pick up at least two Q shells?

Attended workshop on how to develop pythonic coding rather than python coding by Dr.S.Mohideen Badhusha



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11:19 AM
62%
REC
odd = [1, 3, 5]
odd.append(7)
print(odd)
# Output: [1, 3, 5, 7]
odd.extend([9, 11, 13])
print(odd)
# Output: [1, 3, 5, 7, 9, 11, 13]
odd = [1, 3, 5]
print(odd + [9, 7, 5])
# Output: [1, 3, 5, 9, 7, 5]
print(["re"] * 3)
#Output: ["re", "re", "re"]
odd = [1, 9]
#odd.insert(index,element added)
odd.insert(1,3)
print(odd)
# Output: [1, 3, 9]
odd[2:2] = [5, 7]
print(odd)
# Output: [1, 3, 5, 7, 9]
my_list = ['p','r','o','b','l','e','m']
# delete one item
del my_list[2]
print(my_list)
# Output: ['p', 'r', 'b', 'l', 'e', 'm']
# delete multiple items
del my_list[1:5]
print(my_list)
# Output: ['p', 'm']
# delete entire list
del my_list
print(my_list)
# Error: List not defined
9
You