

Learning Analytics Tools

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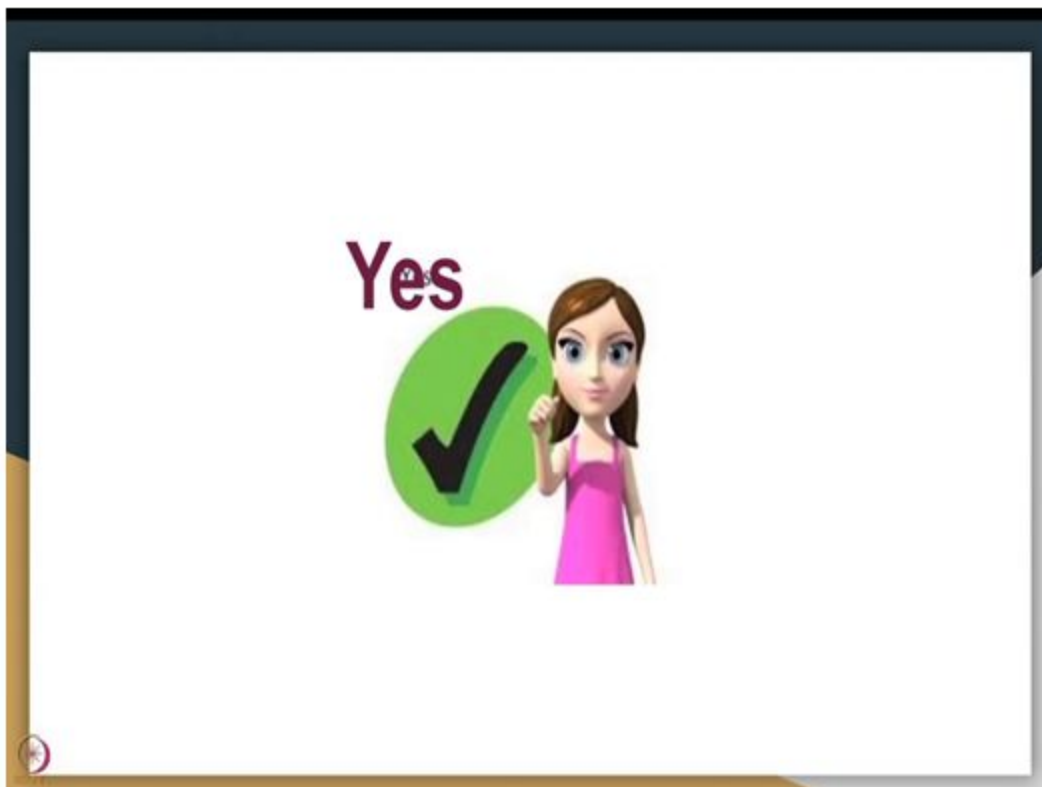
Educational Technology

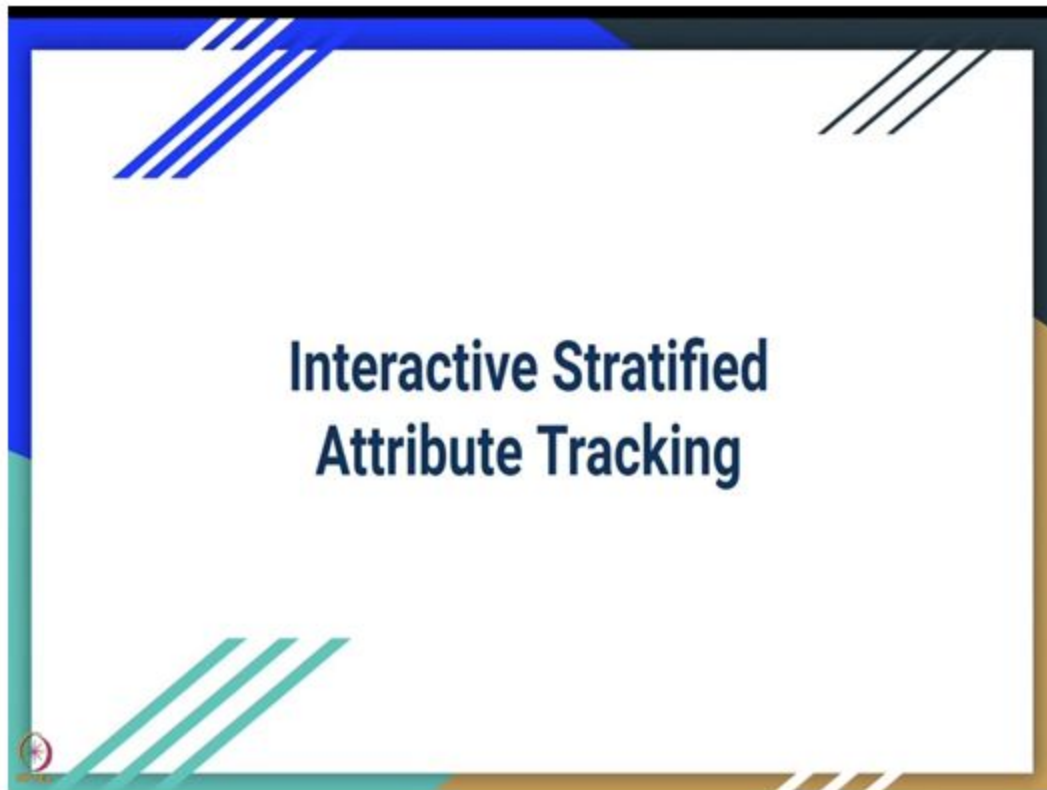
Indian Institute of Technology Bombay

Lecture 31

iSAT Tool demo

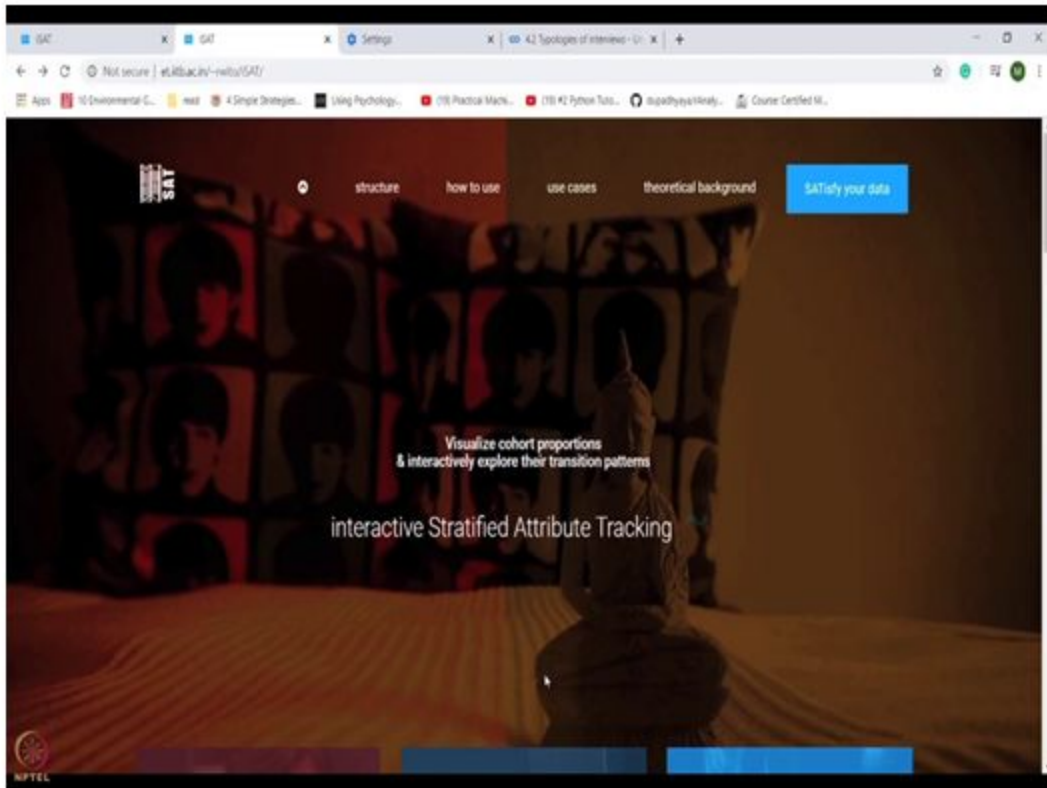
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Are you looking for a tool, to trace educational data set? If yes, you are on right track, I am introducing Interactive Stratified Attribute Tracking System.

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ISAT

structure how to use use cases theoretical background SATify your data

ISAT for researchers

View Case studies

ISAT for instructors

SATifying updates

Hands-on workshop during ICCE 2016

Pre-event Survey

Structure of iSAT

ISAT

structure how to use use cases theoretical background SATify your data

Researcher's Use Cases

Researchers have used iSAT to explicate patterns in their data and interpreted from the perspective of their research context. Mainly iSAT helped in analysing transition patterns across time or attributes.

Studies analysing Cohorts across Time

exploring temporal transition patterns of a collected data attribute

Studies analysing cohorts across Attributes

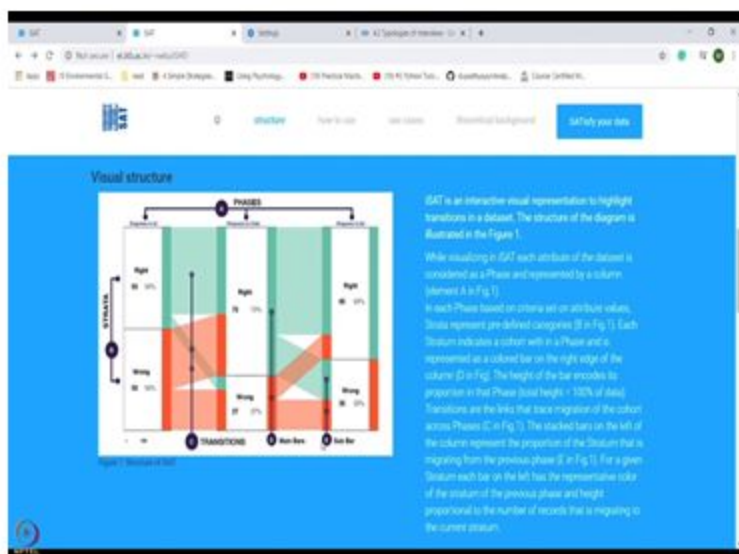
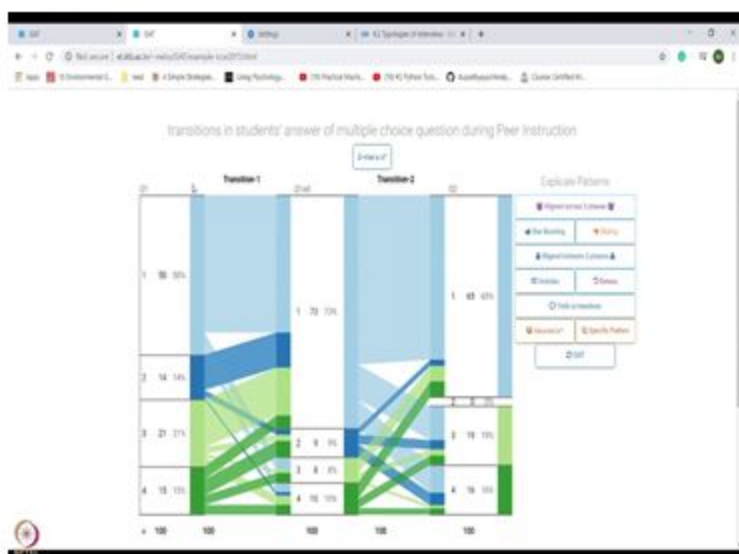
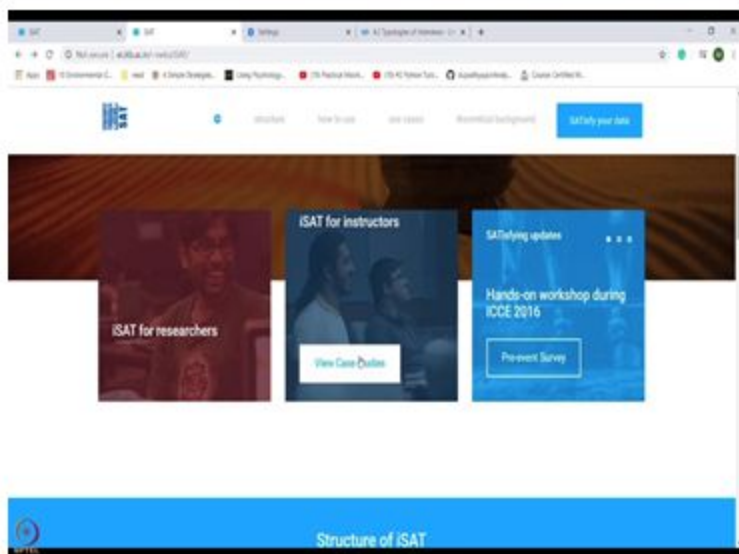
exploring patterns across multiple attributes in collected data

1. Analysing student's problem posing exercise.
2. Evaluating learner perception regarding instructional strategy.
3. Tracing learner performance across different cognitive level assessments.
4. Early learners' performance in phenomenological skill assessment.

View Case studies

This is the interface of iSAT. iSAT assist learning analytics and academic decision making by enabling the visualization of transition pattern in educational data set. So, iSAT can be useful for the researcher and for the instructor. You can see here, how the researchers have used iSAT to explicate pattern in data and interpreted from the perspective of the research context.

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On the other hand, the instructor can use to understand the dynamic of the class of student and their activity from the data collected in their own teaching-learning context. Now, come to the structural part of the iSAT. This is a visual representation to highlight transition in data sets, which involve phases, strata, transition, and main bar and sub bar. From here, we go deeper into the section of analyzing the data.

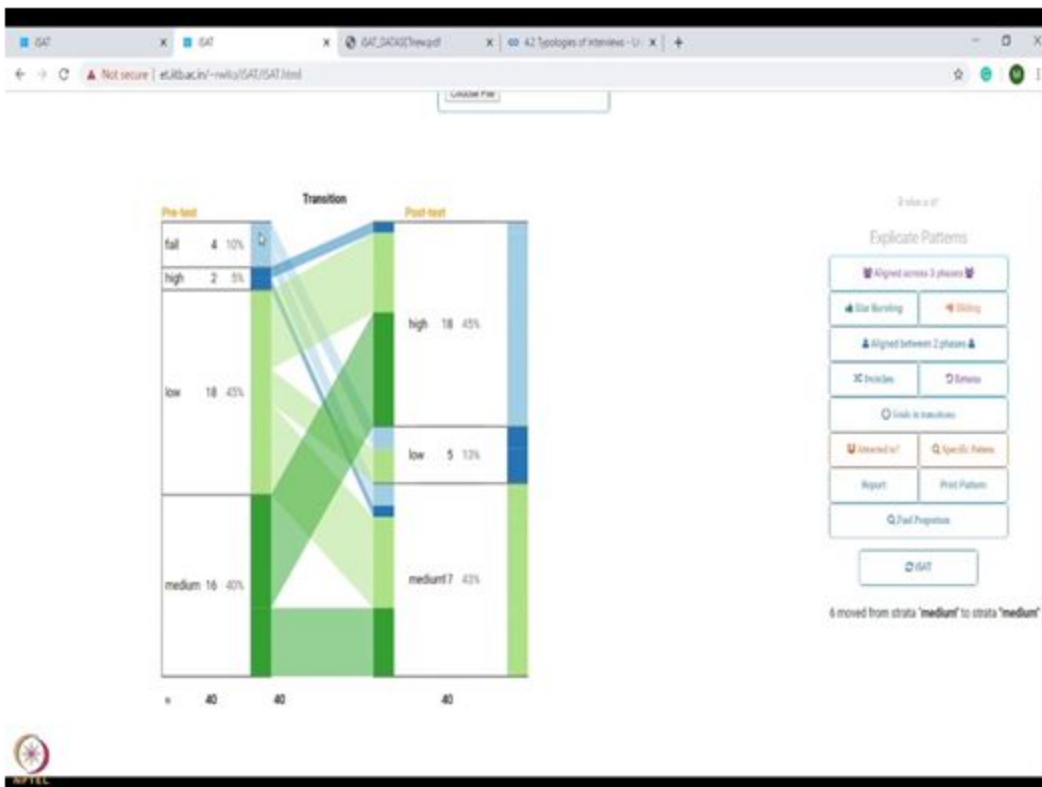
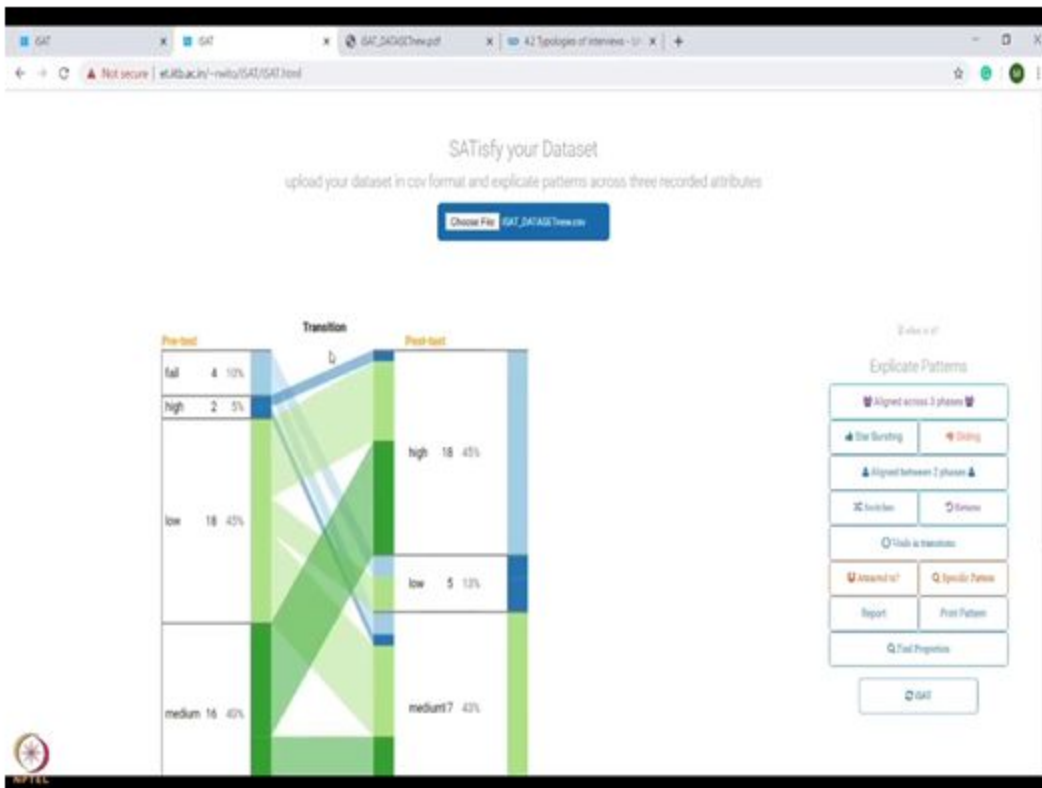
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Students	Pre-test	Post-test	Students_score
A1	low	medium	
A2	low	low	
A3	medium	high	
A4	medium	high	low than 10
A5	low	high	between 11 to 50
A6	low	medium	between 51 to 75
A7	low	medium	above 76
A8	low	high	
A9	low	low	
A10	medium	high	
A11	low	medium	
A12	low	medium	
A13	medium	medium	
A14	low	medium	
A15	low	low	
A16	low	medium	
A17	medium	high	
A18	medium	high	
A19	medium	medium	
A20	medium	high	
A21	medium	medium	
A22	low	medium	
A23	medium	high	
A24	medium	medium	
A25	low	low	
A26	low	high	
A27	low	medium	
A28	medium	medium	
A29	low	low	
A30	medium	medium	
A31	low	high	
A32	low	high	
A33	low	high	
A34	medium	high	

Students	Pre-test	Post-test	Students_score
A4	medium	high	low than 10
A5	low	high	between 11 to 50
A6	low	medium	between 51 to 75
A7	low	medium	above 76
A8	low	high	
A9	low	low	
A10	medium	high	
A11	low	medium	
A12	low	medium	
A13	medium	medium	
A14	low	medium	
A15	low	low	
A16	low	medium	
A17	medium	high	
A18	medium	high	
A19	medium	medium	
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A21	medium	medium	
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A28	medium	medium	
A29	low	low	
A30	medium	medium	
A31	low	high	
A32	low	high	
A33	low	high	
A34	medium	high	
A35	low	medium	
A36	high	medium	
A37	high	high	
A38	medium	high	
A39	medium	high	
A40	low	high	

After knowing about iSAT, let us do our hand ons with iSAT. Suppose, you are an instructor of a class strength 40 and you have taken pre-test and post-test before and after teaching certain concepts. Here, marks are converted into performance level. Like fail, if marks are less than 33, low between 33 to 50, medium between 51 to 75, high above 76. Now, you want to see how many students who fail in pre-test and perform better in post-test, for this first we will convert our file into CSV format as iSAT takes only CSV format file.

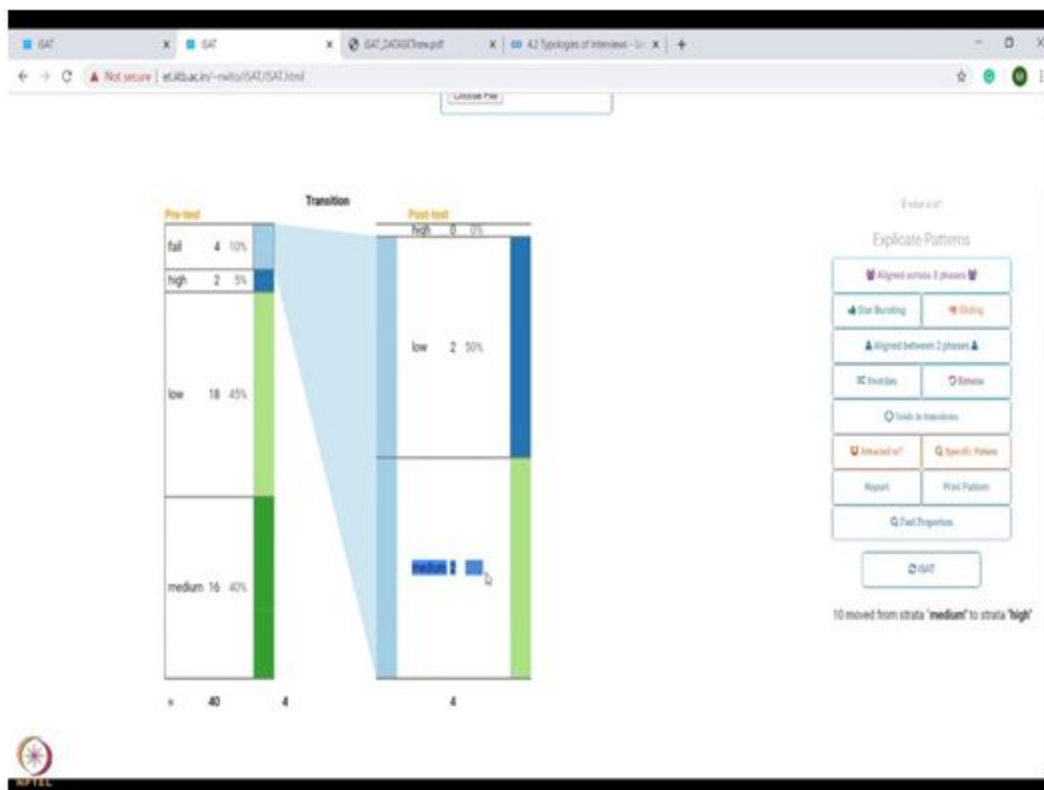
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As we have converted file into CSV format, we will upload this file into iSAT tool. After uploading the file, this type of pattern will show up. Here, two attributes that are pre-test and post-test are considering as phases and represented by columns. These four are strata, indicate a group within a phase and represented by different colours.

Transition are link that traces the migration of the group across the phases. Basically, iSAT has two modes. First, overview mode, this is how overview mode looks like and show the total transition. To answer our question, we will move to the second mode, that is exploration mode.

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After clicking on the fail strata, we will clearly see that in pre-test phase 4 student failed and these 4 students perform better in such a manner that 2 student score low marks, whereas, 2 student score medium marks. Thank you.