Iterative Processes
Lesson Plan: Class 07 / IPP / 01

Overall goal of the lesson	**Iterative Patterns and processes**
Prior knowledge required	Patterns and processes

MODULE 1: **Module time:** 35 minutes

Goal:	Iterative processes and patterns and using repetitive processes for sequential search
Description:	Illustrate iterative processes and patterns with the help of examples from everyday life and use iterative processes for sequential searches
Material required:	**Physical: Attendance Register of the class** **Electronic: None**
Procedure Summary:	
Procedure Details:	Start the session with stating the agenda for today and recalling the patterns and processes learnt earlier ex. “We learnt about patterns and processes in the earlier classes. Today we will learn about iterative (I-te-rat-ive)patterns and processes” Slide 2 and 3: ● Start by taking the example of attendance and ask the students about the process. ● Listen to their answers and then write down the steps on the board ● The replies will match with the steps given in the slide. Show the slide 2 to the students ● Ask them if they have any observations on the example. Ask questions like when did I stop taking the attendance? ● Explain the iterative process with the help of slide 3 and the response to the questions Confirm if they have understood what is meant by a repetitive process in the attendance example and take them to the next example Slide 4 : ● Ask the students if they have seen a bead necklace? Take some time to explain the bead necklace. You may draw a bead necklace on the board ● Give them the problem of counting the beads in the necklace and watch their response ● The replies will match with the steps given in the slide 4. ● Show them the slide and explain about the never ending iterative process Ask the students if they are game for more examples on iterative process Slide 5 and 6 : ● You can replace the name in the example with student’s name whose birthday was celebrated recently. ● Again ask the students for the steps in distributing chocolates to the class ● Write down the steps on the board ● Show slide 5 to illustrate the example

- Ask questions to the students to check which steps are repetitive and when does the repetition end
- Show them slide 6 to reconfirm the understanding

Move to the next example in slide 7

Slide 7 and 8 :

- Explain the example in slide 7. Make changes to the food items based on your observation
- Ask the students to identify the iterative steps and the condition (in this case food getting over or stopping forcibly) which end the iterative process
- Write down the response on the board
- Match the response with the slide 8 and summarize the example with slide 8
- In this example, give stress on the two options i.e. ending the process forcibly (forced end) and ending the process with the defined end. You can make the example more interesting by taking the food items that children normally like.

The examples till now are more based on the day to day activities. Now let us take some examples with numbers

Slide 9 and 10 :

- Show slide 9. You may call a student and ask him to perform the steps given in slide 9. Ask the other students to observe the steps. Take a smaller number to begin with (< 15)
- At the end ask the students about their observation
- Explain the process with the help of slide 10
- Again in this example, give stress on the two ways this iterative process can be ended – defined end (when the quotient reaches 1, exit) and endless (continue even when the quotient reaches 1)
- Illustrate the above point with the help of slide 10

Till now we have seen what is an iterative process - with defined end and with no end. Now in the next example we will use the iterative process for search

Slide 11 and 12 :

- Again state the problem statement to the students and ask them to tell the steps.
- You may have to explain what is sequential search (searching the information in a sequential manner)
- Match the response given by them to the steps written on slide 11
- Ask the students about the condition to end the iterative process
- Once you get the response from the students, show them slide 12
- Summarize how iterative process is used for sequential search in this example
- Stress the use of iterative process for search

Another example to understand the usage of iterative process for sequential search

Slide 13 and 14 :

- Refer to the example given in slide 13. This table can be drawn on the board and ask the student the position of the number.
- Based on their response, ask them how did they find the position?
- Write down the steps on the board
- Ask the students about the defined end in this example
- Show slide 13 and explain the example
- Explain how iterative process is used to search a number and tell its position with the help of slide 14

Till now the students should have understood the iterative process. Now one last example

Slide 15 and 16 :

- Make this example more interactive by making one student shopkeeper and one student as a customer in the class.

	● Ask the other students to observe the interaction ● Ask them about the steps in the billing ● Show slide 15 and explain ● Always ask the students about the defined end (in this case when prices of all items are added) ● Summarize the example with the help of slide 16 Slide 17 : ● This slide is more of a reconfirmation slide. ● We define the iterative process here Slide 18 : ● This is a summary slide for all the examples used to explain iterative process. Make this table on the board and take each example. ● Ask the students where will that example fall ● Show slide 18 at the end once you get the answers from the student
Assessment:	At the end of this lesson, given a process, the students should be able to write down the steps, identify iterative steps, and identify the defined end for the process. The students should also be able to identify, given a iterative process, if it is with a defined end or unending process
Information Broadcast:	

Note : The teacher may use their discretion for slight deviations in the model answer

Question No	**Model Answer**
1	<table><tr><td>24</td><td>31</td><td>55</td><td>68</td><td>87</td><td>3</td><td>46</td><td>18</td><td>79</td><td>10</td></tr></table> 1. Read the number from the box 2. If the number is ending with 0 or 2 or 4 or 6 or 8, put it in even number bucket 3. If the number is ending with 1 or 3 or 5or 7 or 9, put it in odd number bucket 4. Repeat steps 1,2 and 3 till you reach the end of the box 5. Stop once all numbers from the box are put in odd and even buckets
2	<table><tr><td>35</td><td>43</td><td>98</td><td>60</td><td>95</td><td>133</td><td>15</td></tr><tr><td>82</td><td>45</td><td>20</td><td>88</td><td>30</td><td>105</td><td>210</td></tr></table> 1. Read the number from the box 2. If the number is ending with 0 or 5, means it is divisible by 5. Add 1 and remember the sum. 3. If the number is ending with any other number than 0 or 5 go to step 1 4. Repeat steps 1,2 and 3 till you reach the end of the box 5. At the end, the sum gives you the count of numbers divisible by 5 Answer : 9
3	<table><tr><td>Akshay</td><td>Saurabh</td><td>Neha</td><td>Sameer</td><td>Pooja</td></tr><tr><td>Shweta</td><td>Arnav</td><td>Shekhar</td><td>Deepa</td><td>Sanket</td></tr></table> 1. Take the name from the table 2. Check if the name starts with alphabet “S” 3. If yes, add 1 and remember the sum. Repeat steps 1 to 3 4. If no, repeat steps 1 to 4 5. Repeat the steps till all the names in the table are over

4	Teacher to evaluate the example written by the student. May vary from student to student.