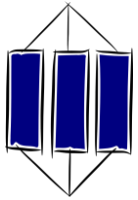
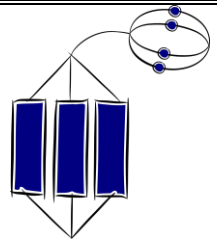
Writing code to calculate the highest and lowest integer, from a set of integers passed via the commandline. [A Taxonomic Study of Novice Programming Summative Assessment Shuhaida Shuhidan Margaret Hamilton Daryl D'Souza]	 **Prestructural**	 **Unistructural**	 **Multistructural**	 **Relational**	 **Extended Abstract**
	Lacks knowledge of the assessed component – may have pieces of unconnected knowledge but make no sense to the student	Focuses on a single aspect – has an understanding of one aspect but not of its significance to the whole or relationship to other aspects	Focuses on several separate aspects – has an understanding of more than one aspect but not of their significance to the whole or relationship to other aspects.	Relates different aspects together.	Seeing the concept from an overall viewpoint.
	Learning outcomes show unconnected information, no organisation. *E.g. "I need help or direction"*	Learning outcomes show simple connections but importance not noted. *E.g. "I will have a tilt at it"*	Learning outcomes show connections are made, but significance to overall meaning is missing. *E.g. I will use trial and error to find a solution"*	Learning outcomes show full connections made, and synthesis of parts to the overall meaning *E.g. "I plan to do X because it will … I know what to do and why .."*	Learning outcomes go beyond subject and makes links to other concepts - generalises *E.g. "I sense what to do to find the best solution ….I seek feedback and adjust my actions in response "*
The components are: • Ability to create a loop • Ability to extract or convert the argument correctly • Ability to find the highest value • Ability to find the lowest value • Ability to code correctly	I need help to make sense of the programming task.	I can compare, or write loops. I need help to implement or derive the connections of loops in relation to manipulation of arrays or usage of further structures	I can create code for loops and comparisons, but I make mistakes. e.g I fail to convert arguments, use incorrect operators, and or do not interpret general explanation	I can create correct code. I can appreciate significance in relation to the whole program and can generalise outside of program	I can make connections beyond the scope of question and can transfer knowledge to a new situation
Example	There are bits of unconnected information. Novices know something, but the overall argument makes no sense No attempt or totally wrong The answer is blank or totally wrong	Simple connections are made.	There are numbers of connections made.		

Effective strategies					

Question 24

Complete the HighLow class below to identify and display the highest and lowest of the series of positive integer values passed into the program as command line arguments.

Expected Input/Output is shown below.

java HighLow 7 4 9 10
Highest value passed in was 10
Lowest value passed in was 4
java HighLow 45 52 81 69 23 97 76
Highest value passed in was 97
Lowest value passed in was 23

Notes:

Command-line arguments are passed to the main method through the array of String references (args in the main method below). The size of any array can be accessed through its length attribute (note: you can assume at least one valid argument will be passed in on the command line). You will need to use Integer.parseInt() to convert each command line argument to integer format before processing it.

(5 marks)

```
public class HighLow
{
public static void main (String[] args)
{
int highestArg = 0;
int lowestArg = 0;
int nextArg;
_____
_____
_____
System.out.println(
"Highest value passed in was " +
highest);
System.out.println(
"Lowest value passed in was " +
lowest);
}
}
```