



Explanation

Indentation improves the readability of your program. It helps you to spot things like missing brackets, missing semi-colons, and incorrect nesting of selection and repetition segments.

Ontario Curriculum Expectations

Computer Science

ICS20 (grade 10):

B3.1. write clear and maintainable code using proper programming standards (*e.g., indentation; naming conventions for constants, variables, and expression*).

ICS3U (grade 11 university prep):

A4.2. use workplace and professional conventions (*e.g., naming, indenting, commenting*) correctly to write programs and internal documentation.

ICS3C (grade 11 college prep):

A3.3. use workplace and professional conventions (*e.g., naming, indenting, commenting*) correctly to write programs and internal documentation.

ICS4U (grade 12 university prep):

A4. use proper code maintenance techniques when creating computer programs.

Sample Follow-up Exercises

All Grade Levels

Rewrite the following Turing and Java program segments using consistent and clear indentation.

Sample Program Segment #1

```
% The "Average" program.  
% For each mark entered by the user, the program determines if it is  
% an "A" or not and an appropriate message is displayed.  
% User input is terminated by -1.
```

```
const gradeA := 80  
const sentinel := -1  
var mark : int
```

```
loop  
  put "Enter a mark. End with ", sentinel, ". "  
  get mark  
  exit when mark = -1  
  if mark >= gradeA then  
    put "This mark is an A."  
  else  
    put "This mark is not an A."  
  end if  
end loop  
put "Thank you for using this program."
```

Sample Program Segment #2

```
// The "TriangleDisplay" class.
//Display a set of four right triangles in
//different positions using *
public class TriangleDisplay
{
    public static void main (String[] args)
    {
        firstTriangle ();System.out.println();
        secondTriangle();System.out.println();
        thirdTriangle();System.out.println();
        fourthTriangle();System.out.println();
    } // main method
    public static void firstTriangle ()
    {
        for (int row = 1 ; row <= 5 ; row++)
        {System.out.print ("  ");
            for (int col = 1 ; col <= row ; col++);
                System.out.print ("*");
                System.out.println;
        }
        public static void secondTriangle ()
    {int count=6;
        String space=" ";
```

```
        for (int row = 1 ; row <= 5 ; row++)
        {count--;
            for (int col = row; col >= 1 ; col--)
                System.out.print(" ");
            for (int col = count; col>= 1 ; col--);
                System.out.print ("*");
                System.out.println (""); } }
        public static void thirdTriangle ()
    {for (int row = 5 ; row >= 1 ; row--)
        {System.out.print ("  ");
            for int col = 1 ; col <= row ; col++
                System.out.print ("*"); System.out.println
        (); } }
        public static void fourthTriangle ()
    {String space=" ";
        for (int row = 1 ; row <= 5 ; row++)
            for (int col = 5; col >= row ; col--)
                System.out.print(space)
                    for (int col = row; col >= 1 ; col--)
                        System.out.print ("*");
                System.out.println (""); } }
    } // TriangleDisplay class
```