

# CS 20: Using Colour in Processing Challenge (17 marks)

Outcomes include:

[CS20-CP1](#): Apply various problem-solving strategies to solve programming problems throughout Computer Science 20.

(f) Analyze and implement programs with the goal of improving code to achieve the most elegant solution

[CS20-CP2](#): Use common coding techniques to enhance code elegance and troubleshoot errors throughout Computer Science 20.

(a) Discuss and implement appropriate coding style (e.g., indentation and comments) and naming conventions for the programming language used in Computer Science 20.

(d) Create internal documentation (e.g., inline comments and header comments) for a program.

[CS20-FP3](#): Construct and utilize functions to create reusable pieces of code.

(a) Explore the benefits of using built-in and user-defined functions.

(d) Develop user-defined functions that utilize argument passing.

	<b>Expert - 4</b>	<b>Meeting - 3</b>	<b>Progressing - 2</b>	<b>Beginning - 1</b>	<b>Incomplete - 0</b>
<b>Execution</b>	<p>The program runs properly with no errors</p> <p>At least two complex images</p> <p>Each shape function has at least 3 different shape commands</p>	<p>The program runs properly with no errors</p> <p>Two distinct shapes</p> <p>Each shape function has at least 3 different shape commands</p>	<p>Minor errors in the code that do not prevent the code from running</p> <p>Two distinct shapes</p> <p>Less than three shape commands in the function</p>	<p>Errors in code prevent it from running</p>	<p>Submitted code is incomplete</p>
<b>Functions and Parameters</b>	<p>Functions are used for all code. The functions add to the readability of the</p>	<p>At least one function with parameters is used.</p>	<p>At least one function is used but parameters are not used properly (i.e.</p>	<p>No parameters were used for the functions.</p>	<p>No functions were used</p>

	<p>code.</p> <p>All functions use parameters.</p> <p>Each shape is made with an original function with a meaningful name</p> <p>All functions are called and work properly.</p>	<p>The function adds to the readability of the code.</p> <p>All functions are called and work properly.</p>	<p>code bypasses the parameters).</p> <p>Functions work properly.</p>		
<b>Colour</b>		<p>The background is not the default colour</p> <p>More than one region of each shape is filled with a colour</p> <p>Use at least 3 different colours on each shape</p> <p>The whole project contains at least 5 different colours</p> <p>At least 1 greyscale</p>	<p>The background is the default colour</p> <p>Use at least 3 different colours on each shape</p> <p>The whole project contains less than 5 different colours</p> <p>No greyscale colour or less than 3 RGB colours</p>		Project is not coloured

		colour and at least 3 RGB colours			
<b>Formatting</b>		Code is organized and easy to read  All code is formatted according to PEP8  All comments are properly formatted	Code may be difficult to follow  All code is formatted according to PEP8  Not all comments are properly formatted	Code may be difficult to follow  A few minor formatting errors according to PEP8  Comments are not formatted properly	Code is difficult to follow  Multiple formatting errors according to PEP8
<b>Documentation</b>		Program includes a header with all necessary information  File name relates to the program  Comments for at least blocks of code that belong together  Comments for all functions  All variables are given meaningful		The header may be missing important information  File name may not relate to the program  Coding does not have enough comments  Variables may not have meaningful names, or are not clearly defined.	No header  File name does not relate to the program  Comments are missing  Variables do not have meaningful names, or are not defined.

		names and are defined with comments			
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