

# OPTIONAL PRACTICE SHEETS

## UFCFWA-30-1 GAMES IN C++

These tasks are designed as extra tasks which you can complete if you want to practice knowledge you learn during the Games in C++ lectures. It will help to familiarise yourselves with using the CLion IDE to develop your code and to cement the essential concepts of C++.

### GETTING CODING

Open CLion and start a new project.

### VARIABLES AND INPUT/OUTPUT

1. You are asked to write a program which asks the user to input a width, height and depth (all real numbers) of a cuboid, then outputs its volume and surface area.

- Outline the input, output and processing items for this program
- Outline an algorithm for this program (pseudocode or flow chart)
- Implement the program, restricting output precision to exactly 3 decimals.

Example:

```
Enter width, height and depth: 5.5 3.2 4
```

```
Width: 5.500
```

```
Height: 3.200
```

```
Depth: 4.000
```

```
Volume: 70.400
```

```
Surface Area: 104.800
```

2. Modify your algorithm to let the user choose which of the volume or surface area they wish to compute.

- a. Outline an algorithm for this program (pseudocode or flow chart)
- b. Implement the program, restricting output precision to exactly 3 decimals.

Example:

```
Enter width, height and depth: 5.5 3.2 4

Would you like to calculate the volume (1) or
surface area (2): 1

Width: 5.500
Height: 3.200
Depth: 4.000

Volume: 70.400
```