



CPSC 103

# Introduction to Systematic Program Design 2021S

Lecture: Module 5 – Arbitrary-Sized (Part 2)  
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27 May, 2021



designed by freepik

# Announcements

## 1. Project

1. Project Proposal Deadline on 31 May, 10pm PDT.

## 2. Midterm

1. Tomorrow at 7pm PDT.
2. Everything covered until Tuesday's lecture is on midterm.
3. Exam Piazza for midterm:  
<https://piazza.com/ubc.ca/summer2021/cpsc103911exam/home>

# Recap

## 1. Design Data Definitions for Arbitrary-sized (using HtDD)

- 1. List[int]
- 2. List[str]
- 3. List[bool]

## 2. Important Concepts

- 1. List Operations
- 2. For-loops
- 3. Using Accumulators (one or more)

## 3. How to Design functions which operate on these Lists:

What is arbitrary-sized?

# Examples

In real life scenario, we don't deal with one data item;  
we deal with collection of data, which is of arbitrary size.

We represent this collection of data as arbitrary-sized or List.

## PRIMITIVE

List[int]

List[str]

List[bool]

List[float]

TODAY

## NON-PRIMITIVE

List[Book]

→ List[Song]

List[Game]

# Learning Goals

1. Arbitrary-Sized Data for Compound
  1. Identify Problem Domain Information of arbitrary size that should be represented as Python's List type.
2. Design Data definitions for List of Compounds
  1. Use HtDD and Data Driven Templates with arbitrary-sized data.
4. Design Functions that take in and/or return lists.
5. Understanding Reference Rules and Helper Functions \*



# Reference Rules

Every time a data design uses another data that is not primitive, the reference rule should be used!

The reference rule tell us that we are using two complex data types and probably this function is going to be complex.

Anytime that a variable is from a non primitive type, we should invoke its template function.

# Worksheet Activity Time!

Let's do  
Question 11, 14, 15

Meeting back in 15 minutes

Module 5 (Arbitrary Sized):  
Worksheet

✓ Published

✎ Edit

⋮

Upload a scanned version of your [Arbitrary Sized Data worksheet](#) ↓. (For help on how to scan, see [Creating a PDF](#).)

You can also find the Jupyter version of this worksheet on Syzygy in your [module-5-arbitrary-sized/Worksheet directory](#).

If you choose to not use the Jupyter version of the worksheet, please be aware of the following:

- We reserve the right to refuse to grade non-PDF submissions.
- In order to receive marks for your worksheet submission, we must be able to see the text you have written on the page. If we cannot make out what has been written, you will receive a 0 for your worksheet.

# Worksheet Activity Time!

Let's do  
Question 16, 17, 18

Meeting back in 10 minutes  
And discuss Worksheet!

Module 5 (Arbitrary Sized):  
Worksheet

✓ Published

✎ Edit

⋮

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