

# 01-dynamic-memory

## Introduction

There are cases when you simply don't know how much memory you need until the program executes. Imagine you want to load a music file up into memory - it would be a rather silly program if you could only load file of a certain size. Instead you would like to adjust the memory to the file to upload.

To allocate memory allocate memory like this we need to use something called dynamic memory.

## Purpose

In order to write useful and "real" programs we need dynamic memory.

## Requirements

Pointer Variable Type

## Videos

Watch the videos in the following order:

- C/Dynamic-memory/c-dyn-mem-small.webm
- C/Dynamic-memory/c-dyn-live-alloc-small.webm
- C/Dynamic-memory/c-dyn-live-alloc-III-small.webm
- C/Dynamic-memory/c-dyn-live-alloc-II-small.webm

## Reading instructions

Wikipedia articles:

- [https://en.wikipedia.org/wiki/C\\_dynamic\\_memory\\_allocation](https://en.wikipedia.org/wiki/C_dynamic_memory_allocation)
- [https://en.wikibooks.org/wiki/C\\_Programming/Memory\\_management](https://en.wikibooks.org/wiki/C_Programming/Memory_management)

## **Goal**

The student shall be able use the functions:

- `calloc`
- `malloc`
- `realloc`
- `free`

## **Exam instructions**

All exercises are examples of exam questions.