

Lab 5.10.4.1 Structures: lists

Objectives

Familiarize the student with:

- Lists
- Structures and pointers to structures
- For loops
- Printing on screen

Scenario

Write a program that creates a FIFO queue and prints some values. For this lab, use structures, pointers to structures and the *malloc* function. Use the values from the array included in the code fragment. Create one element of a queue for one element of an array (there are 10 elements). After you have created the list, print the first 5 values of the queue and then the first 7 values of the queue. After this you must free up the memory. After all the operations have been completed, print the message: "Memory is freed". Your version of the program must print the same result as the expected output.

```
#include <stdio.h>
#include <stdlib.h>

struct element
{
    int value;
    struct element *next;
};

int main(void)
{
    int values[10] = { 2, 4, 5, 6, 7, 8, 9, 1, 3, 0};
    /* your code */
    return 0;
}
```

Example output

```
First 5 values
2
4
5
6
7
First 7 values
2
4
5
6
7
8
9
Memory is freed
```