Dr. B. Güsmann VGU

Bachelor of Computer Science.
Introduction to Programming with C: Exercises

Exercise Sheet 15

---

1. a) Run E.10-1 from the lecture. It is the program TimeBeep.c

   b) Change frequency and duration in the function Beeper() and listen what happens. Call Beep() inside Beeper several times with different frequencies.

   c) Extend the program so that you can enter the start time and the period as two different values on the command line.

2. Write a program that reads a text line.

   a) Write a function that searches the first appearance of the word UNIX in the text. If it finds the word, the function returns the position of the U in the text, otherwise the function returns -1.
   Test the function in your program.

   b) Extend the function of a), so that it recognizes the word UNIX regardless of lower or upper case. E.g. Unix or uNIx shall also be found.

3. Repeating basics.

   Write a program according to the following requirements:
   The program user is asked to enter radius and altitude (height) in meters for two cylinder-shaped containers, which are named „Barrel A“ and „Barrel B“. The values for radius and altitude are floating point values. In case of negative input values, the program shall print a failure message on to the screen and exit.

   Then the program shall print, which one of the containers has the larger volume or that both containers have the same volume. Further on the program shall print how many of the containers (Barrels) have a volume grater than 1 cubic meter and finally the program shall print the volumes of the barrels.

   Hint: The volume of a cylinder-shaped container with radius r and height h is
   $V = r^2 \pi h$. For π you can write in your sourcefile header:

```
#define _USE_MATH_DEFINES
#include <math.h>
```

   and use M_PI or you define a constant with value 3.1416 by yourself.