

Hacettepe University
Department of Computer Engineering

BIL137 SOFTWARE LABORATORY, EXPERIMENT 2

Advisors	Dr. Yüksel Tarhan, R.A. Seda Güneş
Subject	An Introduction to Programming with C
Submission Date	09.10.2007
Due Date	23.10.2007 17:00
Programming Languages	C

Aim

The aim of this experiment is to create a computer application using the basic concepts of the C programming language.

Experiment

You are expected to develop a coin operated “**Drink Machine**” for public use. You will write a program for the operation of this machine. The **rules** of the program are given below:

- 1) Your program will start with a *greeting*.
- 2) A *selection menu* will be shown which indicates the *codes* and *names* of the drinks.
- 3) The available drinks will be *water, tea, coffee, cola*. Their prices will be,
Water->5 ykrs, Tea->10 ykrs, Coffee->15 ykrs, Cola->25 ykrs.
- 4) Every drink has a code. Your program will ask the *code* of the users' drink choice
- 5) The entry must be 1, 2, 3 or 4 . Any other input will not be accepted.
- 6) When the user has entered the *code* of the drink desired, the program will display the *name* and the *price* of the selected drink.
- 7) After displaying the *name* and the *price* of the drink, a message will be shown that asks the user to pay the price of the selected drink. The user will pay the price by typing the value of the coins. Only the following coins will be valid entries: 5ykr, 10ykr, 20ykr, 50ykr, 100ykr. Any other input will not be accepted.

```
C:\ "C:\Documents and Settings\Seda\Desktop\Bil137_0708\Experiment2\Debug\drinkmachine.... - _ X
*****
*          DRINK MACHINE          *
*          *                      *
*****

WELCOME TO THE DRINK MACHINE. HAVE A GOOD APETITE!

1. WATER
2. TEA
3. COFFEE
4. COLA

Enter your drink choice:
```

8) If the paid amount is equal to the cost of the drink, a message like below can be given;

“ Thank you for using the DRINK MACHINE. “

“ Your *<name of drink>* is being delivered. ”

Ex.

```
C:\ "C:\Documents and Settings\Seda\Desktop\Bil137_0708\Experiment2\Debug\drinkmachine.... - _ X

Enter your drink choice: 1
WATER ---> 5 Ykrs
*****
You need to pay the price: <5ykr/10ykr/20ykr/50ykr/100ykr> 5
Thank you for using the DRINK MACHINE.
Your Water is being delivered.
You will take 0 ykr back.
Press any key to continue
```

9) If the paid amount is more than the cost of the drink, a message like below can be given;

“ Thank you for using the DRINK MACHINE. “

“ Your *<name of drink>* is being delivered. ”

“ You will take *<the remaining money from the cost>* back.”

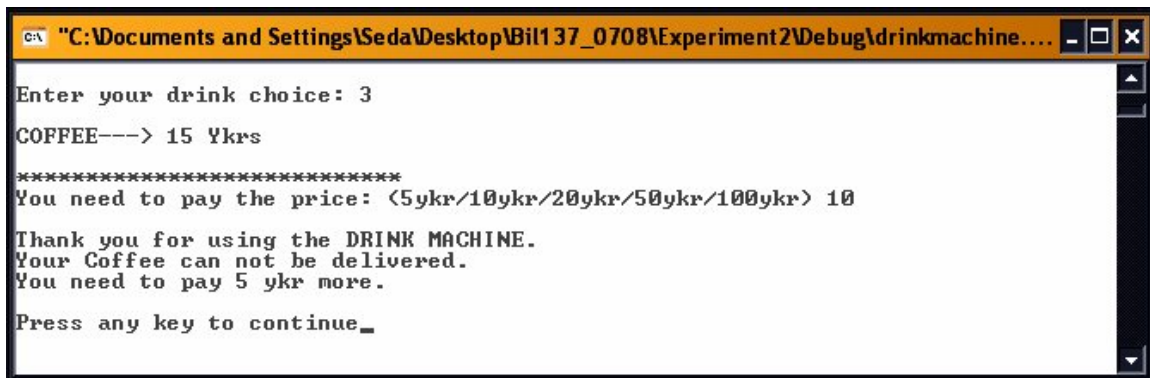
10) If the paid amount is less than the cost of the drink, a message like below can be given;

“ Thank you for using the DRINK MACHINE. “

“ Your **<name of drink>** can not be delivered. ”

“ You need to pay **<the required money for the cost>** more.”

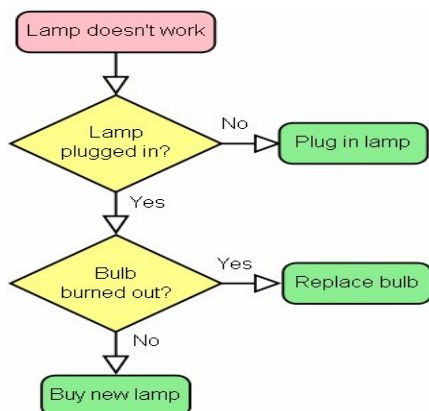
Ex.



11) After executing steps above, the program will terminate automatically.

Research

You will do research about schematic representation of a process or algorithm, the “**Flow Chart**”. You are expected to submit also the flow chart of your program. An example flow chart is given below:



A simple flowchart for what to do if a lamp doesn't work

(“lamp example” taken from <http://en.wikipedia.org/wiki/Flowchart>)

Be Careful About

- Meaningful names should be used when declaring variables.
- Suitable comments should be used to aid understanding of the program.

(Document some of your code so that other people can understand what you are doing. Comments in the C89 standard are noted by: / */. The comment begins with /* and ends with */.)*

Ex.

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

/* Main Function
   Purpose: Controls our program, prints Hello, World!
   Input: None
   Output: Returns Exit Status */
int main() {
    (void)printf("Hello, world!\n");
    return EXIT_SUCCESS;
}
```

Notes

- Do not submit any file via e-mail. You will use online submission system to submit your experiments. <https://submit.cs.hacettepe.edu.tr/>
- The **submission format** is given below:
 <StudentID>
 |-- report
 -- FlowChart.pdf
 |-- source
 -- drinkMachine.c
 -- drinkMachine.mdsp

You can convert your report file to *pdf* format from www.pdfonline.com .

- You will submit your source code and a flow chart file. The submit details will be announced via newsgroup.
- No experiment will be accepted after the deadline.
- You can ask your questions through course's newsgroup:
 news://news.cs.hacettepe.edu.tr/dersler.bil137
- And you are supposed to be aware of everything discussed in the newsgroup.
- Save all your work until the experiment is graded.
- The assignment must be original, INDIVIDUAL work. Presenting somebody else's work as your own will be considered cheating. Also the students who share their works will be punished in the same way.

Good Luck & Have a Nice Holiday