LABORATORY 2 – REPORT

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Note: Coursework examiners are entitled to reject any coursework which does not have a signed copy of this form attached or are submitted late.

## Problem 1

The aim of this problem is to look at statements and to check if they are true or false

### Answers

1. This is false as both conditions have to be true for the expression to be true as the “&&” operator signifies ‘and’.
2. This is true as the “||” operator means ‘or’ and as such only one of the condiotions have to be met for the expression to be true.
3. This is false as only sum can be used as a file name.
4. False as you cannot have a\_\*b. The correct solution for this would be a \* b.
5. False as this sets variable x equal to variable b.
6. False, to print x as the type integer, you must write: printf(“%d”, x);.
7. False, to read x as the type float, you must write: scanf(“%f”, &x);
8. True
9. True
10. False as the code for that must be y = (a\*x\*x\*x) + 7;

## Problem 2

The aim of this problem is to write a C program that reads the dimensions of a water basin: depth, length and width. Next it should read the amount of paint required to paint one square metre of a surface. It should also calculate the volume and surface area of the basin

### Plan

* Print a welcoming message.
* Ask the user to input data for the length, width and depth
* Store the input in type float.
* Calculate the volume
* Calculate the surface area.
* Print a goodbye message

### Development

The first step in the development of my program was to include the standard C libraries (stdio.h, stdlib.h,) that in order to be able to use certain functions in the program.

Then, I started to write the main function of the program.

I used the ‘printf’ command to display welcoming message on my screen on my screen. I used a void function to ask for the input from the user. I then used separate void functions to calculate both the volume and surface area. I called each of these functions from the main function.

### Testing

I compiled and tested the program using the gcc compiler. I was not presented any errors when I compiled my code.

The program ran smoothly without any errors

### Conclusion

During this lab session I learned about some of the functions contained in the stdio.h and stdlib.h libraries (e.g. functions).

The final version of the C source code for problem 2 is attached as water\_basin*.c* file

## Problem 3

The aim of this problem is to write a C program that displays a square and a diamond using my intials.

### Plan

* Print a square using my initials
* Print a diamond using my intials

### Development

The first step in the development of my program was to include the standard C libraries (stdio.h, stdlib.h, string.h) that in order to be able to use certain functions in the program.

Then, I started writing up the main function of the program. I used a for loop to print a square using my intials.

### Testing

I compiled and tested the program using the gcc compiler. I was not presented any errors when I compiled my code.

### Conclusion

During this lab session I learned about some of the functions contained in the stdio.h, stdlib.h and string.h libraries (e.g. for loop)..

The final version of the C source code for problem 1 is attached as geometric\_figures*.c* file

## Problem 3

The aim of this problem is to write a C program that reads the exchange rate between Euro, USD, GBP. Also it provides the user the option to find the amount of USD or GBP for a specific amount of Euro.

### Plan

* Print a welcoming message
* Print a table out that displays the exchange rate between EURO, USD and GBP
* Give the user a choice between USD and GBP
* Calculate the amount after the exchange.
* Print a message thanking the user.

### Development

The first step in the development of my program was to include the standard C libraries (stdio.h, stdlib.h, string.h) that in order to be able to use certain functions in the program.

Then, I started writing up the main function of the program. I used a for loop to make the table of exchange rates.

I then used a void function to ask the input for which currency the user would like to change to. I used a switch statement to do this.

### Testing

I compiled and tested the program using the gcc compiler. I was not presented any errors when I compiled my code.

### Conclusion

During this lab session I learned about some of the functions contained in the stdio.h, stdlib.h and string.h libraries (e.g. for switch statements)..

The final version of the C source code for problem 1 is attached as exchange\_office*.c* file