Laboratory Report

LABORATORY 2 – REPORT

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**Programme: ECE**

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| *I hereby declare that the attached submission is all my own work, that it has not previously been submitted for assessment, and that I have not knowingly allowed it to be used by another student. I understand that deceiving or attempting to deceive examiners by passing off the work of another as one's own is not permitted. I also understand that using another's student’s work or knowingly allowing another student to use my work is against the University regulations and that doing so will result in loss of marks and possible disciplinary proceedings.* | |
| **Signed:** **Adeyemo Sobowale** | **Date:** **21 February 2019** |

**Problem:**

Task 1: write a program that finds the area of a rectangular field expressed in meters: as well as the quantity of week killer required to treat the field in liters/square feet.

Task 2: Sum and Average Calculation of 3 numbers , this is a program that reads from the keyboard three numbers, computes and displays their sum, their product and their average as well as the minimum and the maximum value of the three numbers.

Task 3: Sum and Average Calculation – N. The program should then read N numbers, compute and display their sum, their product and their average.

**Plan:**

Task 1:

Create the file on textpad

Identifying and using the correct function

Correctly save and name the file

Using the Borland C++ Complier

Compile the file

Executing the file

Task 2:

Create the file on textpad

Spacing my initials correctly to get the desired shapes

Correctly save and name the file

Using the Borland C++ Complier

Compile the file

Executing the file

Task 3:

Create the file on textpad

Spacing my initials correctly to get the desired shapes

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**Development:**

Task 1: to create this programme printf was used to declare statements to the user and scan f used the inputs placed by the user in the functions below to get the length and width for area. These values were multiplied by 3.28 to give the values in feet and litres.

Task 2: for the second task the average, sum and product to 3 digits put into the keyboard were printed. The maximum and minimum values of these inputs were found by using the command if num1>=num2 for maximum and num<=num2 for minimum.

Task 3: for the final task the programme was modified so any number of values can be found using a loop. This allowed for the average, product and sum to be displayed.

**Testing**: there was a lot of trial and error within these tasks due to the functions

H:\EM108>bcc32 averagesum.c

Borland C++ 5.5.1 for Win32 Copyright (c) 1993, 2000 Borland

averagesum.c:

Error E2451 averagesum.c 27: Undefined symbol 'num32' in function main

Error E2377 averagesum.c 27: If statement missing ) in function main

\*\*\* 2 errors in Compile \*\*\*

H:\EM108>bcc32 averagesumofn.c

Borland C++ 5.5.1 for Win32 Copyright (c) 1993, 2000 Borland

averagesumofn.c:

Error E2141 averagesumofn.c 9: Declaration syntax error in function main

Error E2451 averagesumofn.c 18: Undefined symbol 'n' in function main

Warning W8019 averagesumofn.c 20: Code has no effect in function main

Error E2451 averagesumofn.c 26: Undefined symbol 'nums' in function main

Error E2121 averagesumofn.c 38: Function call missing ) in function main

Error E2190 averagesumofn.c 45: Unexpected }

\*\*\* 5 errors in Compile \*\*\*

This error was due to incorrect declarations at the start of the programme and the omission of a, when printing the values. There was also an extra } at the end of the programme.

**Conclusion:** I learnt the importance of using the correct output to print values. Typing int at the start and using %f to show the value would give incorrect values. I also learnt how to use a loop within a programme and its function .

**Code:**

Task 1:

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

int main()

{

float length,width,area,amount;

printf("Welcome to my weed killing programme!");

printf("\nPlease insert length");

scanf("%f",&length);

printf("\nPlease insert width");

scanf("%f",&width);

printf("\nPlease insert amount");

scanf("%f",&amount);

area=(length\*3.28\*width\*3.28);

printf("\nThe area in feet is: %f\n", area);

amount=(area\*amount);

printf("\nThe amount of weed killer needed to cover the field is litres: %f\n", amount);

printf("Goodbye,thank you for using my weed killing programme!");

return(EXIT\_SUCCESS);

}

Task 2:

#include <stdio.h>

#include <stdlib.h>

int main()

{

/\* declarations \*/

float average, num1, num2, num3,product;

/\* input data \*/

printf("Welcome to ,my average programme!");

printf("\nEnter first number: ");

scanf("%f", &num1);

printf("\nEnter second number: ");

scanf("%f", &num2);

printf("\nEnter third number: ");

scanf("%f", &num3);

average = (num1 + num2 + num3) / 3;

printf("\nThe average is: %f\n", average);

if ((num1>=num2)&&(num1>=num3)){

printf("\nThe max is: %f\n", num1);}

else if((num2>=num1)&&(num2>=num3)){

printf("\nThe max is: %f\n", num2);}

else if((num3>=num1)&&(num3>=num2)){

printf("\nThe max is: %f\n", num3);}

if((num1<=num2)&&(num1<=num3)){

printf("\nThe minimum is: %f\n", num1);}

else if((num2<=num1)&&(num2<=num3)){

printf("\nThe minimum is: %f\n", num2);}

else if((num3<=num1)&&(num3<=num2)){

printf("\nThe minimum is: %f\n", num3);}

product=(num1\*num2\*num3);

printf("\nThe product is: %f\n", product);

return(EXIT\_SUCCESS);

}

Task 3:

#include <stdio.h>

#include <stdlib.h>

int main()

{

float sum;

int i, n;

float nums[20];

float product;

float average;

printf("\n Welcome to my average of sum calculator: ");

printf("\nEnter the number of numbers (n < 20): ");

scanf("%d", &n);

for (i = 0; i < n; i++)

{

printf("\nEnter the %d-th number: ", i+1);

scanf("%f", &nums[i]);

}

sum = 0;

product = 1;

for (i = 0; i < n; i++)

{

sum += nums[i];

product\*= nums[i];

}

average=sum/n;

printf("\n The average is %f\n", average);

printf("\n the product is%f\n",product);

printf("\n Welcome to my average of sum calculator%f\n",sum);

return(EXIT\_SUCCESS);

}