S A

UNIVERSITY

Subject

Programming and Data Structures using C

Assignment 3

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Q1. Display multiple variables Sample Variables :
a+ c, x + c,dx + x,
a + x, s + b, ax + b, s + c, ax + c, ax + ux
Declaration :
int a = 125, b = 12345;
long ax = 1234567890;
short s = 4043;
float x = 2.13459;
double dx = 1.1415927;
char c = 'W';
unsigned long ux = 2541567890

```
#include <stdio.h>

int main()
{
    int a = 125, b = 12345;
    long ax = 1234567890;
    short s = 4043;
    float x = 2.13459;
    double dx = 1.1415927;
    char c = 'W';
    unsigned long ux = 2541567890;

    printf("a+b = %d",a+b);
    printf("\na+c = %d   ==> letter will be converted in to ASCII and sum with
integer.",a+c);
    printf("\nx+c = %f",x+c);
    printf("\ndx+x = %lf",dx+x);
    printf("\na+x = %f",a+x);
    printf("\ns+b = %i",s+b);
    printf("\nax+b = %li",ax+b);
    printf("\ns+c = %i",s+c);
    printf("\nax+c = %li",ax+c);
    printf("\nax+ux = %li",ax+ux);


    return 0;
}
```

Output

```
a+b = 12470
a+c = 212   ==> letter will be converted in to ASCII and sum with integer.
x+c = 89.134590
dx+x = 3.276183
a+x = 127.134590
s+b = 16388
ax+b = 1234580235
s+c = 4130
ax+c = 1234567977
ax+ux = 3776135780
```

Q2. Convert specified days into years, weeks and days.

```
#include <stdio.h>

int main()
{
    int d,y,w,d1;
    printf("Enter the Days:");
    scanf("%d",&d);

    y=d/365;
    w=(d-(y*365))/7;
    d1=(d-((y*365)+(w*7)));
    printf("y:%d , w: %d , d: %d ",y,w,d1);

    return 0;
}
```

Output

```
Enter the Days:1947
y:5 , w: 17 , d: 3
```

Q3. Accepts two item’s weight (floating points' values) and number of purchase (floating points' values) and calculate the average value of the items.

```
#include <stdio.h>

float main()
{

float w1, w2, c1, c2, avg;
    printf("Enter the Weight's Item's (Resp.): ");
scanf("%f %f",&w1,&w2);
printf("Enterd the number of purchased Item's (Resp.) ");
scanf("%f %f", &c1 ,&c2);
    avg = ((w1*c1)+(w2*c2))/(c1+c2);
printf("\nAverage Value = %f\n", avg);

    return 0;
}
```

Output

```
Enter the Weight's Item's (Resp.): 23
78
Enterd the number of purchased Item's (Resp.) 12
56

Average Value = 68.294121
```

Q4. Create enumerated data type for 7 days and display their values in integer constants.

```
#include <stdio.h>

float main()
{

enum w{mo,tu,we='a',th,fr=-1,sa,su};
printf(" mo: %d \n tu: %d\n we:%d   value in integer \n we:%c value in char\n th:%d
value in integer\n th:%c value in char\n fr=%d \n sa:%d \n su:%d
",mo,tu,we,we,th,th,fr,sa,su);

    return 0;
}
```

Output

```
mo: 0
tu: 1
we:97  value in integer
we:a value in char
th:98 value in integer
th:b value in char
fr=-1
sa:0
su:1
```

Q5. Converts Centigrade to Fahrenheit.

```
#include <stdio.h>

float main()
{

float f;
printf("Enter the Fahrenheit degree ");
scanf("%f",&f);
f=(f-32)*5/9;
printf("The   Centigrade value of given Fahrenheit degree is \n %.2f Degree",f);
     return 0;
}
```

Output

```
Enter the Fahrenheit degree 128.5
The  Centigrade value of given Fahrenheit degree is
 53.61 Degree
```

Q6. Takes minutes as input, and display the total number of hours and minutes.

```
#include <stdio.h>

float main()
{

int m,h,m1;
printf("Enter the Minutes : ");
scanf("%d",&m);
h=m/60;
m1=(m-h*60);
printf("h: %d, m: %d   ",h,m1);
    return 0;
}
```

Output

```
Enter the Minutes : 143
h: 2, m: 23
```

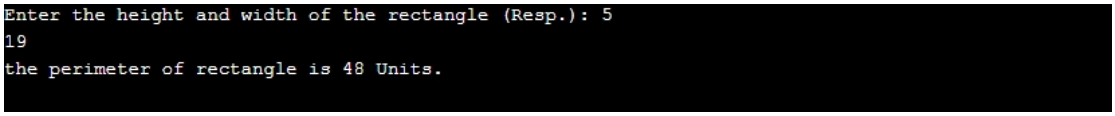
Q7. Prints the perimeter of a rectangle to take its height and width as input.

```
#include <stdio.h>

float main()
{

int h, w,p;
printf("Enter the height and width of the rectangle (Resp.): ");
scanf("%d %d",&h,&w);
p=2*(h+w);
printf("the perimeter of rectangle is %d Units.",p);
    return 0;
}
```

Output



Q8. By using +, /, %=, >=, ! operators.

```
#include <stdio.h>

int main() {

	int a=10, b=5, c;

	printf("a+b = %d \n",a+b);
	printf("a/b = %d \n",a/b);


	printf("a = %d \n", b%a);

	printf("%d != %d is %d \n", a, c, a != b);
	printf("%d >= %d is %d \n", a, b, a >= b);

	return 0;
}
```

Output

Q9. By using &, |, >>, ?:, || operators.

```
#include <stdio.h>
int main() {
	int a =6, b = 15, c=121, result;
	printf("a&b = %d \n", a&b); printf("alb = %d \n", a|b);

	printf("Right shift by %d:%d \n", a, a>>2);
	result = (a == b) || (c> b); printf("(a == b) || (c> b) is %d \n", result);
	result = ((a==7)?(3):(2));
	printf("The value of 'result' variable is : %d", result);
	return 0;
}
```

Output

Q10. Find the Size of int, float, double and char

```
#include <stdio.h>

float main()
{

printf("Size of Int is %lu Bytes\n",sizeof(int));
printf("size of Float is %lu Bytes\n",sizeof(float));
printf("size of Double is %lu Bytes\n",sizeof(double));
printf("size of Char is %lu Bytes\n",sizeof(char));

    return 0;
}
```

Output

```
Size of Int is 4 Bytes
size of Float is 4 Bytes
size of Double is 8 Bytes
size of Char is 1 Bytes
```