

Answer of Assignment 3 – 28.12.2020

**SUBJECT- PROGRAMMING AND DATA STRUCTURE USING C
(PDSC)**

LECTURE-M. Thangavel

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1. 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;

Ans:-

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

```
int main(){
```

```
int a = 125, b = 12345;
```

```
long ax = 1234567890;
```

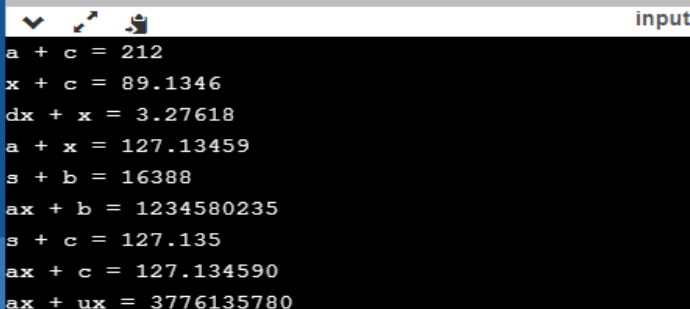
```
short s = 4043;
```

```
float x = 2.13459;
```

```
double dx = 1.1415927;
char c = 'W';
unsigned long ux = 2541567890;
printf("a + c = %d \n", a + c);
printf("x + c = %g \n", x + c);
printf("dx + x = %g \n", dx + x);
printf("a + x = %.5f \n", a + x);
printf("s + b = %d \n", s + b);
printf("ax + b = %d \n", ax + b);
printf("s + c = %g \n", s + c);
printf("ax + c = %f \n", ax + c);
printf("ax + ux = %ld \n", ax + ux);
return 0;
}
```

Output:-

```
8
9  #include<stdio.h>
10 int main(){
11  int a = 125, b = 12345;
12  long ax = 1234567890;
13  short s = 4043;
14  float x = 2.13459;
15  double dx = 1.1415927;
16  char c = 'W';
17  unsigned long ux = 2541567890;
18  printf("a + c = %d \n", a + c);
19  printf("x + c = %g \n", x + c);
20  printf("dx + x = %g \n", dx + x);
21  printf("a + x = %.5f \n", a + x);
22  printf("s + b = %d \n", s + b);
23  printf("ax + b = %d \n", ax + b);
24  printf("s + c = %g \n", s + c);
25  printf("ax + c = %f \n", ax + c);
26  printf("ax + ux = %ld \n", ax + ux);
27  return 0;
28 }
29
30
```



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

Ans:-

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

```
int main(){
```

```
const int year = 365 , week = 7;
```

```
int day , result , result2;
```

```
printf("Enter number of days");
```

```
scanf("%d",&day);
```

```
result = day / year ;
```

```
result2 = day / week;
```

```
printf("Input days is equal to :: \n years = %d \n weeks = %d \n days = %d",result,result2,day);
```

```
return 0;
```

```
}
```

Output :

```
3      Online C Compiler.
4      Code, Compile, Run and Debug C program online.
5      Write your code in this editor and press "Run" button to compile and execute it.
6
7      *****/
8
9      #include<stdio.h>
10     int main(){
11
12     const int year = 365 , week = 7;
13     int day , result , result2;
14
15     printf("Enter number of days");
16     scanf("%d",&day);
17
18     result = day / year ;
19     result2 = day / week;
20
21     printf("Input days is equal to :: \n years = %d \n weeks = %d \n days = %d",result,result2,day);
22
23     return 0;
24 }
25
```

input

```
Enter number of days8
Input days is equal to ::
years = 0
weeks = 1
days = 8
```

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

Ans:-

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

```
int main()
```

```
{
```

```
enum days{sun,mon,tue,wed,thu,fri,sat};
```

```
printf("sun = %d \n mon = %d \n tue = %d \n wed = %d \n thu = %d \n fri = %d \n sat = %d",sun,mon,tue,wed,thu,fri,sat);
```

```
return 0;
```

```
}
```

Output:-

```
1  /***** Online C Compiler.
2
3      Code, Compile, Run and Debug C program online.
4      Write your code in this editor and press "Run" button to compile and execute it.
5
6      *****/
7
8  #include<stdio.h>
9  int main(){
10     enum days{sun,mon,tue,wed,thu,fri,sat};
11
12     printf("sun = %d \n mon = %d \n tue = %d \n wed = %d \n thu = %d \n fri = %d \n sat = %d",sun,mon,tue,wed,thu,fri,sat);
13
14     return 0;
15 }
16
17
```

input

```
sun = 0
mon = 1
tue = 2
wed = 3
thu = 4
fri = 5
sat = 6
```

3. Converts Centigrade to Fahrenheit.

Ans:-

```
#include<stdio.h>

int main(){

float cel , fah , result ;

printf("Input temperature in celsius :: ");

scanf("%f",&cel);

result = (cel * 1.8) + 32 ;

printf("Celsius :: %g C \n Fahrenheit :: %g F",cel,result);

return 0;

}
```

Output:-

```
8
9 #include<stdio.h>
10 int main(){
11
12 float cel , fah , result ;
13
14 printf("Input temperature in celsius :: ");
15 scanf("%f",&cel);
16
17 result = (cel * 1.8) + 32 ;
18
19 printf("Celsius :: %g C \n Fahrenheit :: %g F",cel,result);
20
21 return 0;
22 }
23
```

input

```
Input temperature in celsius :: 98
Celsius :: 98 C
Fahrenheit :: 208.4 F
```

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

Ans:-

```
#include<stdio.h>

int main(){

float min , hours ;

printf("Input Minutes :: ");

scanf("%f",&min);

hours = min / 60 ;

printf("%g minute = %g hour",min,hours);

return 0;

}
```

Output:

```
2
3                                     Online C Comp
4                                     Code, Compile, Run and De
5 Write your code in this editor and press
6
7 *****
8
9 #include<stdio.h>
10 int main(){
11 float min , hours ;
12 printf("Input Minutes :: ");
13 scanf("%f",&min);
14 hours = min / 60 ;
15 printf("%g minute = %g hour",min,hours);
16 return 0;
17 }
18
```

input

```
Input Minutes :: 78
78 minute = 1.3 hour
...Program finished with exit code 0
```

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

Ans-

```
#include<stdio.h>

int main(){

float height , width ,result ;

printf("Input height and width of a rectangle :: ");

scanf("%f%f",&height,&width);

result = 2 * (height + width);

printf("perimeter of a rectangle is = %g ",result);

return 0;

}
```

Output:

```
3 Online C Compiler.
4 Code, Compile, Run and Debug C progr
5 Write your code in this editor and press "Run" butto
6
7 *****
8
9 #include<stdio.h>
10 int main(){
11 float height , width ,result ;
12 printf("Input height and width of a rectangle :: ");
13 scanf("%f%f",&height,&width);
14 result = 2 * (height + width);
15 printf("perimeter of a rectangle is = %g ",result);
16 return 0;
17 }
18
```

input

```
Input height and width of a rectangle :: 4
5
perimeter of a rectangle is = 18
```

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

Ans:-

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

```
int main(){
```

```
int a = 12 , b = 6 ;
```

```
printf("using '+' a + b = %d \n",a + b);
```

```
printf("using '/' a / b = %d \n",a / b);
```

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

```
printf("using '>=' a >= b = %d \n",a >= b);
```

```
printf("using '!' a ! b = %d",a != b);
```

```
return 0;
```

```
}
```

Output:


```
3 Online C Compiler.
4 Code, Compile, Run and Debug C
5 Write your code in this editor and press "Run"
6
7 *****
8
9 #include<stdio.h>
10 int main(){
11 int a = 12 , b = 6 ;
12 printf("using '+' a + b = %d \n",a + b);
13 printf("using '/' a / b = %d \n",a / b);
14 printf("using %d \n",a %= b);
15 printf("using '>=' a >= b = %d \n",a >= b);
16 printf("using '!' a ! b = %d",a != b);
17 return 0;
18 }
19
20
21
```

input

```
using '+' a + b = 18
using '/' a / b = 2
using 0
using '>=' a >= b = 0
using '!' a ! b = 1
```

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

Ans:-

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

```
int main(){
```

```
int a = 12 , b = 6 ;
```

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

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

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

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

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

```
return 0;
```

```
}
```

Output:

```
1  /*****
2
3
4      Online
5      Code, Compile, Run
6      Write your code in this editor and
7
8  *****/
9  #include<stdio.h>
10 int main(){
11     int a = 12 , b = 6 ;
12     printf("a & b = %d \n",a & b);
13     printf("a | b = %d \n",a | b);
14     printf("a >> b = %d \n",a >> b);
15     printf("a ?: b = %d \n",a ?: b);
16     printf("a || b = %d \n",a || b);
17     return 0;
18 }
19
```

```
a & b = 4
a | b = 14
a >> b = 0
a ?: b = 12
a || b = 1
```

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

Ans:-

```
#include<stdio.h>

int main(){

int a ;

float b ;

double c ;

char d ;

printf("size of int :: %d bytes \n",sizeof(a));
printf("size of float :: %d bytes \n",sizeof(b));
printf("size of double :: %d bytes \n",sizeof(c));
printf("size of char :: %d bytes \n",sizeof(d));

return 0;

}
```

Output:

```
3 Online C Compiler.
4 Code, Compile, Run and Debug C program
5 Write your code in this editor and press "Run" button
6
7 *****
8
9 #include<stdio.h>
10 int main(){
11     int a ;
12     float b ;
13     double c ;
14     char d ;
15     printf("size of int :: %d bytes \n",sizeof(a));
16     printf("size of float :: %d bytes \n",sizeof(b));
17     printf("size of double :: %d bytes \n",sizeof(c));
18     printf("size of char :: %d bytes \n",sizeof(d));
19     return 0;
20 }
21
```

input

```
size of int :: 4 bytes
size of float :: 4 bytes
size of double :: 8 bytes
size of char :: 1 bytes
```

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

Ans:-

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

```
int main()
```

```
{
```

```
    float w1, c1, w2, c2, tc, average;
```

```
    printf("Weight of Item1: ");
```

```
    scanf("%f", &w1);
```

```
    printf("No.of item1: ");
```

```
    scanf("%f", &c1);
```

```
    printf("Weight of Item2: ");
```

```
    scanf("%f", &w2);
```

```
    printf("No. of item2: ");
```

```
scanf("%f", &c2);

tc=c1+c2;

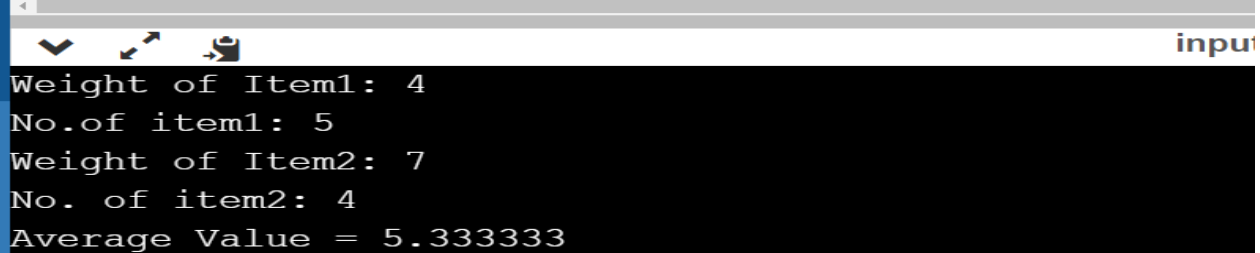
average = ((w1 * c1) + (w2 * c2)) / tc;

printf("Average Value = %f\n",average );

return 0;
```

Output:-

```
8
9  #include <stdio.h>
10 int main()
11 {
12     float w1, c1, w2, c2, tc,average;
13     printf("Weight of Item1: ");
14     scanf("%f", &w1);
15     printf("No.of item1: ");
16     scanf("%f", &c1);
17     printf("Weight of Item2: ");
18     scanf("%f", &w2);
19     printf("No. of item2: ");
20     scanf("%f", &c2);
21     tc=c1+c2;
22     average = ((w1 * c1) + (w2 * c2)) / tc;
23     printf("Average Value = %f\n",average );
24     return 0;
```



A terminal window with a dark background. The title bar shows standard window controls and the text "input". The output of the program is displayed as follows:

```
Weight of Item1: 4
No.of item1: 5
Weight of Item2: 7
No. of item2: 4
Average Value = 5.333333
```