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**P20101036**

Programming language

Lab “ 7 ”

## TASK 1:

Copy the previous code into your file and test it. Then, add more lines of code to do the following:

- Update t to point to c. Use a pointer dereference to change the value of c to 555.
- Change the value of c again using a direct assignment. Verify that the pointer t still points to the value by printing the result of dereferencing it.

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

```
#include <conio.h>
```

```
main ()
```

```
{
```

```
    int a=42 , b= 7 , c= 999 ;
```

```
    int *t=&a;
```

```
    int *u=NULL;
```

```
    printf("%d %d \n",a,*t);
```

```
    c=b;
```

```
    u=t;
```

```
    printf("%d %d \n",c,*u);
```

```
    a=8;
```

```
    b=8;
```

```
    printf("%d %d \n",b,c,*t,*u);
```

```
    *t=123;
```

```
    printf("%d %d \n",a,b,c,*t,*u);
```

```
    t=&c;
```

```
    *t=555;
```

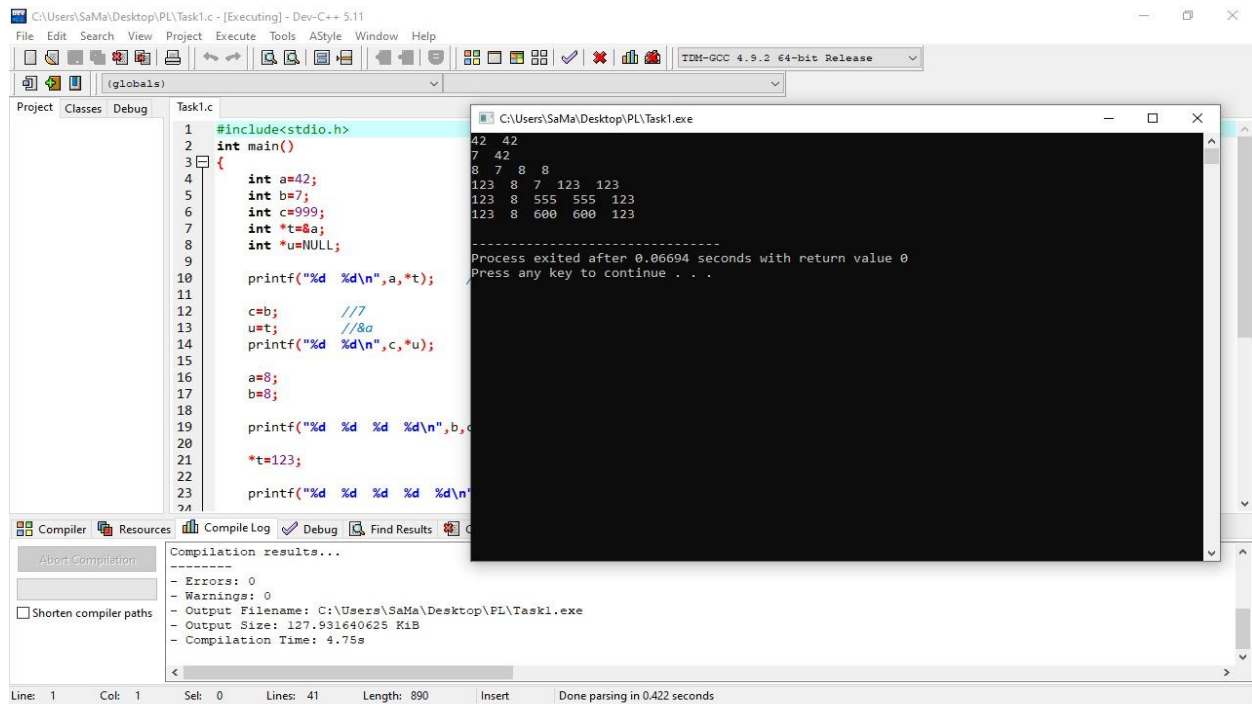
```
    printf("%d %d \n",a,b,c,*t,*u);
```

```
    c=600;
```

```
    printf("%d %d \n",a,b,c,*t,*u);
```

```
    return (0);
```

```
}
```



## Task: 2

The Fibonacci numbers are a famous sequence of numbers. They begin with 0 and 1, and then the next value in the sequence is the sum of the previous two values.

0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765

(fib[8] is 21 -- remember to start counting from 0!)

### Write a program that calculates the Fibonacci sequence.

- Input n, which is the number of integers to generate.
- Declare an array, initialize it with only the first two Fibonacci numbers, then
- calculate the rest.
- Display the sequence for n=10 and n=20

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

```
int main()
```

```
{
```

```
    int n,i,fab,j=0;
```

```
    printf("Enter no. of elements: ");
```

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

```
    int arr[n];
```

```
    if(n>2)
```

```
{
```

```
    arr[0]=0;
```

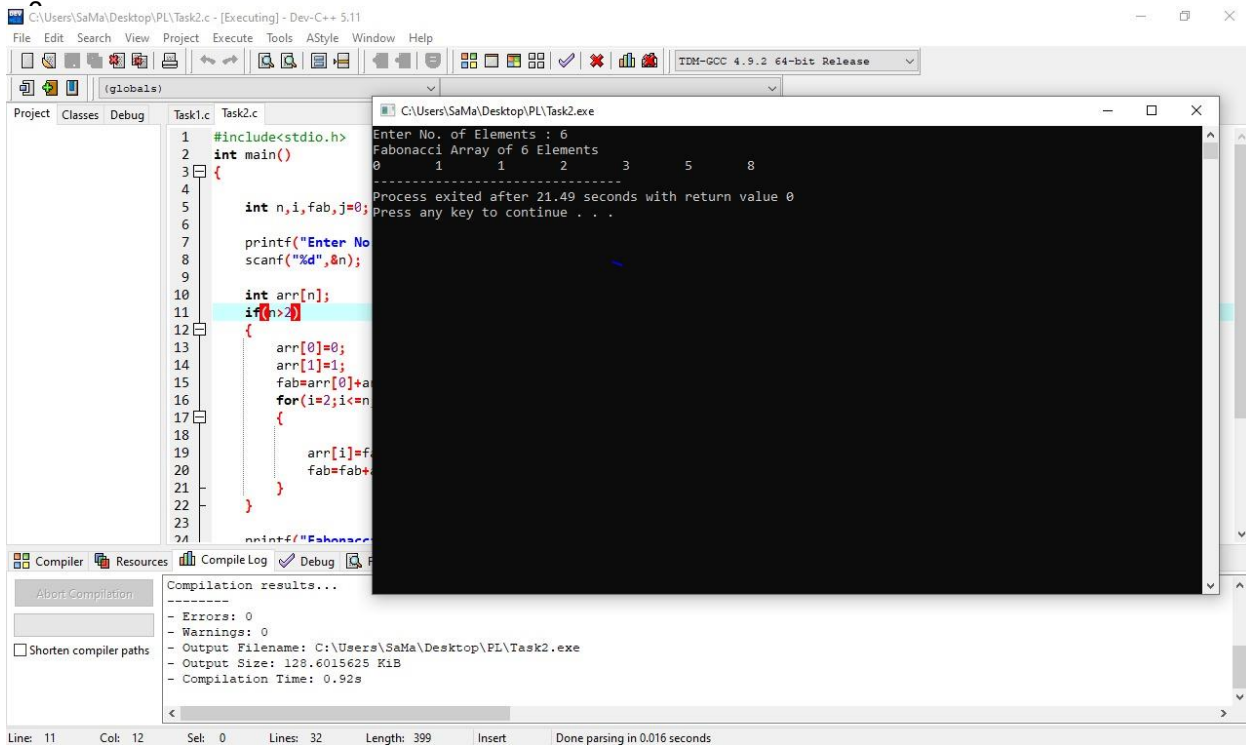
```
    arr[1]=1;
```

```

        fab=arr[0]+arr[1];
        for(i=2;i<=n;i++)
        {
            arr[i]=fab;
            fab=fab+arr[i-1];
        }
    }
    printf("Fabonacci array of %d elements \n",n);
    for(i=0;i<=n;i++)
    {
        printf("%d \t",arr[i]);

    }
    return (0);
}

```



### Task: 3

Write a program to take salaries of n employees and m departments of an organization and store them into n x m array and the print the 2D array result.

```

#include<stdio.h>
int main()
{

```

```

int emp,dep,i,j;
printf("Enter no. of employees: ");
scanf("%d",&emp);
printf(" Enter no. of depart: ");
scanf("%d",&dep);

int arr[dep][emp];

for(i=0;i<dep;i++)
{
    for(j=0;j<emp;j++)
    {
        printf("enter the salary of Dep %d and Emp %d",i+1,j+1);
        scanf("%d",&arr[i][j]);
    }
}

printf("Salaries of Employees\n\n");
for(i=0;i<dep;i++)
{
    for(j=0;j<emp;j++)
    {
        printf("%d\t\t",arr[i][j]);
    }
    printf("\n");
}

```

The screenshot shows a C++ IDE with the following components:

- Code Editor:** Displays the source code for `Task3.c`. The code is as follows:
 

```

1 #include<stdio.h>
2 int main()
3 {
4     int emp,dep,i,j;
5     printf("Enter No. of Employ");
6     scanf("%d",&emp);
7     printf("Enter No. of Depart");
8     scanf("%d",&dep);
9
10    int arr[dep][emp];
11
12    for(i=0;i<dep;i++)
13    {
14        for(j=0;j<emp;j++)
15        {
16            printf("Enter Salary of Dep %d and Emp %d",i+1,j+1);
17            scanf("%d",&arr[i][j]);
18        }
19    }
20
21    printf("Salaries of Employees\n\n");
22
23    for(i=0;i<dep;i++)
24    {
25        for(j=0;j<emp;j++)
26        {
27            printf("%d\t\t",arr[i][j]);
28        }
29        printf("\n");
30    }
31 }
      
```
- Compiler:** Shows the compilation results:
 

```

Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\SaMa\Desktop\PL\Task3.exe
- Output Size: 130.4423828125 KiB
- Compilation Time: 0.63s
      
```
- Console Window:** Displays the program's output:
 

```

Enter No. of Employees : 3
Enter No. of Departments : 3
Enter Salary of Dep 1 and Emp 1 10000
Enter Salary of Dep 1 and Emp 2 20000
Enter Salary of Dep 1 and Emp 3 30000
Enter Salary of Dep 2 and Emp 1 12000
Enter Salary of Dep 2 and Emp 2 24000
Enter Salary of Dep 2 and Emp 3 312300
Enter Salary of Dep 3 and Emp 1 12300
Enter Salary of Dep 3 and Emp 2 212700
Enter Salary of Dep 3 and Emp 3 350000
Salaries of Employees
10000      80000      50000
12000      45000      12300
12300      12700      56000
-----
Process exited after 42.12 seconds with return value 0
Press any key to continue . . .
      
```