

Structured Programming Lab (Summer-2022)

Lecture 04

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221-35-909

Problem 01:

```
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
int main()
{
    int a,b;
    scanf("%d %d",&a,&b);
    if(a>b)
        printf("%d",a);
    else
        printf("%d",b);

    return 0;
}
```

Output:

```
100 200
200
Process returned 0 (0x0)   execution time : 4.647 s
Press any key to continue.
```

Problem 02:

```
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
int main()
{
    int a,f,j;
    printf("Give Age input Arif / Fahmid / Joy \n");
    scanf("%d %d %d",&a,&f,&j);
    if(a<f)
    {
        if(a<j)
            printf("Arif %d\n",a);

        else
            printf("Joy %d\n",j);
    }
    else{
        if(f<j)
            printf("Fahmid %d \n",f);
        else
            printf("Joy %d\n",j);
    }
    return 0;
}
```

Output:

```
Give Age input Arif / Fahmid / Joy
20 10 30
Fahmid 10

Process returned 0 (0x0)   execution time : 5.866 s
Press any key to continue.
```

Problem 03:

```
/* Simanta kumar Roy
221-35-909
*/

#include<stdio.h>
int main()
{
    int n;
    scanf("%d", &n);
    if(n%2==0)
        printf("%d is Even", n);
    else
        printf("%d is Odd", n);

    return 0;
}
```

Output:

```
57
57 is Odd
Process returned 0 (0x0)   execution time : 4.311 s
Press any key to continue.
```

Problem 04:

```
/* Simanta kumar Roy
221-35-909
*/

#include<stdio.h>
int main()
{
    int y;
    scanf("%d", &y);
    if(y%4==0) {
        if(y%400==0 || y%100!=0) {
            printf("leap year !");
        }
        else
            printf("Not a leap year !");
    }
    else
        printf("Not a leap year !");

    return 0;
}
```

Output:

```
2004
leap year !
Process returned 0 (0x0)   execution time : 3.230 s
Press any key to continue.
```

Problem 05:

```
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
int main()
{
    char c;
    scanf("%c",&c);
    if((c>='a' && c<='z') || (c>='A' && c<='Z'))
        printf("Alphabet");
    else
        printf("Not Alphabet");

    return 0;
}
```

Output:

```
+
Not Alphabet
Process returned 0 (0x0)   execution time : 6.648 s
Press any key to continue.
```

Problem 06:

```
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
int main()
{
    int a,b,c,d,e;
    scanf("%d%d%d%d%d",&a,&b,&c,&d,&e);
    float p = (a+b+c+d+e)/5.0;
    if(p>=90)
        printf("A");
    else if(p>=80)
        printf("B");
    else if(p>=70)
        printf("C");
    else if(p>=60)
        printf("D");
    else if(p<40)
        printf("F");
    return 0;
}
```

Output:

```
90 90 90 90 90
A
Process returned 0 (0x0)   execution time : 5.734 s
Press any key to continue.
```

Problem 07:

```
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
int main()
{
    int a,b,c;
    scanf("%d%d%d",&a,&b,&c);
    if((a+b+c)==180)
        printf("YES IT IS ! \n");
    else
        printf("NO ! \n");

    return 0;
}
```

Output:

```
90 45 45
YES IT IS !

Process returned 0 (0x0)   execution time : 4.461 s
Press any key to continue.
```

Problem 08:

```
/* Simanta kumar Roy
   221-35-909
*/
#include<stdio.h>
int main()
{
    int x1, y1, x2, y2, x3, y3;
    double ab, bc, ac, abc;
    printf("GIVE INPUT : x1/y1/x2/y2... \n"); scanf("%d%d%d%d%d%d", &x1, &y1, &x2, &y2, &x3, &y3);
    ab = sqrt(pow(x2-x1,2)+pow(y2-y1,2));
    bc = sqrt(pow(x3-x2,2)+pow(y3-y2,2));
    ac = sqrt(pow(x3-x1,2)+pow(y3-y1,2));
    abc = ab+bc;

    if(abc==ac)
    {
        printf("All the three points fall on one straight line.\n");
    }
    else
        printf("All the three points are not present on one straight line.");

    return 0;
}
```

Output:

```
GIVE INPUT : x1/y1/x2/y2...
1 2 1 2 1 2
All the three points fall on one straight line.

Process returned 0 (0x0)   execution time : 6.937 s
Press any key to continue.
```

Problem 09:

```
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
int main()
{
    int cost,sell;
    scanf("%d%d",&cost,&sell);
    if(cost<sell)
        printf("He made Profit %d \n",sell-cost);
    else
        printf("He made loss %d \n",cost-sell);

    return 0;
}
```

Output:

```
30 90
He made Profit 60

Process returned 0 (0x0)   execution time : 8.657 s
Press any key to continue.
```

Problem 10:

```
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
#include<math.h>
int main()
{
    int a,b,c;
    scanf("%d%d%d",&a,&b,&c);
    double area,s;
    s = (a+b+c)/2;
    area = sqrt(s*(s-a)*(s-b)*(s-c));
    if(a+b+c>area)
        printf("Area > Perimeter\n");
    else
        printf("Perimeter > Area\n");

    return 0;
}
```

Output:

```
1 2 3
Area > Perimeter

Process returned 0 (0x0)   execution time : 3.731 s
Press any key to continue.
```

Problem 11:

```
/* Simanta kumar Roy
   221-35-909
*/

#include<stdio.h>
int main()
{
    int a,b;
    char c;
    scanf("%d %c %d",&a,&c,&b);
    switch(c)
    {
        case '+':
            printf("%d\n",a+b);
            break;
        case '-':
            printf("%d\n",a-b);
            break;
        case '*':
            printf("%d\n",a*b);
            break;
        case '/':
            printf("%0.3lf\n",a/b);
            break;
        default:
            printf("Give Valid Oparator.\n");
            break;
    }
    return 0;
}
```

Output:

```
10+3
13

Process returned 0 (0x0)   execution time : 5.063 s
Press any key to continue.
```

Problem 12:

```
#include<stdio.h>
int main()
{
    int u;
    double taka;
    scanf("%d",&u);           // Simanta Kumar Roy
    if(u<=200)                // 221-35-909
    {
        taka = u*0.5 ;
    }
    else if(u<=400)
    {
        taka = (u-200)*0.65;
        taka+=100;
    }
    else if(u<=600)
    {
        taka = (u-400)*0.80;
        taka +=230;
    }
    else if(u>600)
    {
        taka = (u-600);
        taka+=390;
    }
    printf("%0.2lf\n",taka);

    return 0;
}
```

Output:

```
201
100.65

Process returned 0 (0x0)   execution time : 2.357 s
Press any key to continue.
```