

Εισαγωγή στον Προγραμματισμό Λύσεις Ασκήσεων 2^{ου} Εργαστηρίου

Pre1

```
#include <iostream>
using namespace std;

int main()
{
    double a, max, min;
    int i;

    max=0.0;
    min=1.0;

    for (i = 1; i<=8; i++)
    {
        cout<<"Give a number: " ;
        cin>>a;

        if ((0.0 <= a) && (a <= 1.0))
        {
            if (a>max)
                max = a;
            if (a<min)
                min = a;
        }
    }

    if (max == 0.0 && min== 1.0)
        cout<<"\nNo numbers between [0-1]."<<endl;
    else
        cout<<"MAX= "<<max<<" , MIN= "<<min<<endl;

    system("PAUSE");
    return 0;
}
```

Pre2

```
#include <iostream>
using namespace std;

int main()
{
    int passes=0, student=0, failures=0, result=1;
    double posostoPass, posostoFail;

    while (result!=0)
    {
        do
        {
            cout<<"Give a result (1=pass,2=fail,0=quit): ";
            cin>>result;
        } while ((result!=1) && (result!=2) && (result!=0));

        if (result == 1)
        { passes++;
          student++; }
        if (result == 2)
        { failures++;
          student++; }

    }

    if (student!=0)
    { cout<<"Passes= "<<passes<<", Failures= "<<failures<<endl;
      posostoPass = passes *100 / static_cast<double>(student);
      posostoFail = failures *100 / static_cast<double>(student);
      cout<<"Per cent Passes= "<<posostoPass<<"%, Per cent Failures=
"<<posostoFail<<"%. \n"; }
    else
        cout<<"No input. \n";

    system("PAUSE");
    return 0;
}
```

Pre3

```
#include <iostream>
using namespace std;
```

```
int main()
{   int x, i, j;

    cout<<"Give the number of lines: ";
    cin>>x;
```

```
//1o Dentraki
    for(i=1;i<=x;i++)
    {
        for(j=1;j<=i;j++)
            cout <<"*";
        cout << endl;
    }
```

```
    cout<<" \n";
```

```
//2o Dentraki
```

```
    for(i=1;i<=x;i++)
    {
        for(j=x;j>=i;j--)
            cout <<"*";
        cout << endl;
    }
```

```
    cout<<" \n";
```

```
//3o Dentraki
```

```
    for(i=1;i<=x;i++)
    { for(j=1;j<i;j++)
        cout <<" ";
        for(j=x;j>=i; j--)
            cout <<"*";
        cout << endl; }
```

```
    cout<<" \n";
```

```
//4o Dentraki
```

```
for(i=1;i<=x;i++)
{ for(j=x;j>i; j--)
    cout <<" ";
  for(j=1;j<=i;j++)
    cout <<"*";
  cout << endl; }

system("PAUSE");
return 0;
}
```

Problem1

```
#include <iostream>
#include <cmath>
using namespace std;

int main()
{
    int i, n;
    double a, p = 500.0, r = 0.02;

    do {
        cout<< "Give the number of years: ";
        cin>>n; }
    while (n<5 || n>15);

    for(i = 1; i <= n; i++)
    {
        a = p*pow((1.0 + r), i);
        cout<< i << "\t" << a;
        cout<<endl;
    }
    system("PAUSE");
    return 0;
}
```

Problem2

```
#include <iostream>
using namespace std;

int main()
{
    int exam, total, i;
    double avg;
    total = 0;

    for(i = 1; i <= 6; i++)
    {
        do {
            cout<<"Give exam: ";
            cin>> exam;
        }
        while( (exam<0) || (exam > 100) );

        total += exam;
    }

    avg = total/6.0;
    cout<<"Average is: "<<avg<<endl;

    system("PAUSE");
    return 0;
}
```

Problem3

```
#include <iostream>
using namespace std;

int main()
{
    int x, i, j;

    cout<<"Give the number of lines: ";
    cin>>x;

    for(i=1;i<=x;i++)
    { for(j=x;j>i; j--)
        cout <<" ";
        for(j=1;j<=i;j++)
            cout <<"*";
        for(j=1;j<i;j++)
            cout <<"*";
        cout << endl;

    }

    system("PAUSE");
    return 0;
}
```

Problem4

```
#include <iostream>
using namespace std;

int main()
{
    int sum, new_choco, coupon, n;

    cout<<"Give the amount: ";
    cin>>n;

    sum = n;

    sum = n + (n/7);
    new_choco = n / 7;
    coupon = (n % 7) + new_choco;

    while (coupon >= 7)
    {
        sum = sum + (coupon/7);
        new_choco = coupon / 7;
        coupon = (coupon % 7) + new_choco;
    }

    cout << "Chocolates: " << sum << " and Coupons: " << coupon <<
endl;

    system("PAUSE");
    return 0;
}
```