ΠΡΟΤΕΙΝΟΜΕΝΕΣ
ΛΥΣΕΙΣ ΑΣΚΗΣΕΩΝ
Πακέτα *(Packages)*

ΑΣΚΗΣΗ-1η (Πακέτα)

Στον φάκελο Shapes:

(1) Emvadon.java

```
package Shapes;
public interface Emvadon
  { float computeEmvadon(float x, float y);}
```
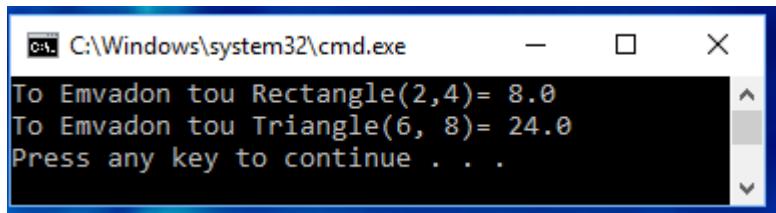
(2) Triangle.java

```
package Shapes;
public class Triangle implements Emvadon {
public float computeEmvadon(float x, float y)
{return(x * y/2);}}
```

(3) Rectangle.java

```
package Shapes;
public class Rectangle implements Emvadon {
public float computeEmvadon(float x, float y)
{return(x * y);}}
```

Στον αρχικό φάκελο *(root)*:

```
import Shapes.*;
class InterfaceEmvadon {
  public static void main(String args[]){
    Rectangle rect = new Rectangle();
    Triangle tri = new Triangle();
     Emvadon emv;
     emv = rect;
      System.out.println("To Emvadon tou Rectangle(2,4)= "+ emv.computeEmvadon(2,4));
       emv = tri;
      System.out.println("To Emvadon tou Triangle(6, 8)= "+ emv.computeEmvadon(6,8));}}
```

```
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To Emvadon tou Rectangle(2,4)= 8.0
To Emvadon tou Triangle(6, 8)= 24.0
Press any key to continue . . .
```

ΑΣΚΗΣΗ-2�η (Πακέτα)

Στον φάκελο Anadromi:

(1)   Paragontiko.java

```java
package Anadromi;
public class Paragontiko
{
public static int paragontiko(int n){
     if (n==1)
        return 1;
     else if (n==0)
        return 0;
     else return n*paragontiko(n-1);
}}
```

(2)   Fibonacci.java

```java
package Anadromi;
public class Fibonacci
{
public static int fibonacci(int n){
  if (n==1)
     return 1;
  else if (n==0)
     return 0;
  else return fibonacci(n-1)+fibonacci(n-2);
}}
```

(3) PalidromaStrings.java

```java
package Anadromi;
public class PalidromaStrings
{
public static boolean palString(String s){
  if(s.length()==0 || s.length()==1)
    return true;
  if(s.charAt(0)== s.charAt(s.length()-1))
    return palString(s.substring(1, s.length()-1));
  else
    return false;
}}
```

(4) ProtoiArithmoi.java

```java
package Anadromi;
public class ProtoiArithmoi
{
  public static boolean  prwtoi(int n,int d){
  if(d<=1) return true;
    if(n%d==0)
      return false;
  return prwtoi(n,d-1);
} }
```

(5) Hanoi.java

```java
package Anadromi;
public class Hanoi
{
 public static void hanoi(int n, char source, char storage, char destination){
  if(n==1)
    System.out.println(source+" -> "+destination);
  else{
    hanoi(n-1,source,destination,storage);
    System.out.println(source+" -> "+destination);
    hanoi(n-1,storage,source,destination); }
}}
```

```java
package Anadromi;
public class MenouEpilogon
{
 public static void menou(){
    System.out.println();
    System.out.println("**********Menou epilogwn**********");
    System.out.println("1)Paragontiko");
    System.out.println("2)Fibonacci");
    System.out.println("3)Palindroma Strings");
    System.out.println("4)Prwtoi arithmoi");
    System.out.println("5)Pyrgoi Hanoi");
    System.out.println("6)Telos programmatos");
    System.out.println("********************************\n");
}}
```

Στον αρχικό φάκελο *(root)*:

```java
import Anadromi.*;
public class TestAnadromi
{
 public static void main(String[] args) {

    UserInput user = new UserInput();
    int select;

    do{
     MenouEpilogon.menou();

     do{
       System.out.print("Dwse arithmo epiloghs : ");
       select = user.getInt();
       if(select < 1 || select > 6)
         System.out.println("Doste sosto ar. epilogis :/ \n");
     }while(select<1 || select>7);

     System.out.println("***********************");

     switch(select){
       case 1:{
         System.out.println();
         System.out.println("1)Paragontiko.");
         int parag;
         System.out.print("\nDwse arithmo gia ypologismo tou paragontikou : ");
         parag = user.getInt();
         System.out.println();
```

```java
          System.out.println("To paragontiko tou: "+parag+"! =
                                  "+Paragontiko.paragontiko(parag));
          break;
    }
    case 2:{
       System.out.println();
       System.out.println("2)Fibonacci.");
       int fibo;
       System.out.print("\nDwse arithmo thesis gia ypologismo tou antistoihou Fibbonacci : ");
       fibo = user.getInt();
       System.out.println();
       System.out.println("O arithmos Fibonacci sti thesi: "+fibo+" einai o
                                  "+Fibonacci.fibonacci(fibo));
       break;
    }

    case 3:{
        System.out.println();
        System.out.println("6)Palidroma Strings.");
           String s;
           System.out.print("\nDwse sumvoloseira : ");
           s = user.getString();
           if(PalidromaStrings.palString(s)){
        System.out.println();
        System.out.println("\nPalindromo : "+s);}
         else {
            System.out.println();
            System.out.println("\nDen einai palindromo : "+s);}
            break;
    }

    case 4:{
        System.out.println();
        System.out.println("4)Prwtoi arithmoi.");
        int prwt;
        System.out.print("\nDwse orio gia euresh prwtwn arithmwn : ");
        prwt = user.getInt();

      for(int i=1; i<=prwt; i++)
        if(ProtoiArithmoi.prwtoi(i,i-1)) {
                         System.out.println();
           System.out.println(i+" true");}
        else {
                      System.out.println();
           System.out.println(i+" false");}
        break;
    }

    case 5:{
       System.out.println();
       System.out.println("5)Pyrgoi Hanoi.");
       int diskoi;
       System.out.print("\nDwse arithmo diskwn : ");
       diskoi = user.getInt();
       Hanoi.hanoi(diskoi,'A','B','C');
       break;
```

```
        }

    default:{ System.out.println("\nTelos programmatos.");
        break;
    }
    }

    }while(select!=6);
  }
}
```

```
C:\Windows\system32\cmd.exe                       —    □    ×

**********Menou epilogwn**********
1)Paragontiko
2)Fibonacci
3)Palindroma Strings
4)Prwtoi arithmoi
5)Pyrgoi Hanoi
6)Telos programmatos
**********************************

Dwse arithmo epiloghs : 1
**************************

1)Paragontiko.

Dwse arithmo gia ypologismo tou paragontikou : 4

To paragontiko tou: 4! = 24

**********Menou epilogwn**********
1)Paragontiko
2)Fibonacci
3)Palindroma Strings
4)Prwtoi arithmoi
5)Pyrgoi Hanoi
6)Telos programmatos
**********************************

Dwse arithmo epiloghs :
```