

## Monitor.ads

```
package Monitor is

  protected Access_Control is
    procedure Add (Amount:in Integer);
    procedure Subtract (Amount:in Integer);
    function Result return Integer;
  private
    Value:Integer:=0;
  end Access_Control;
end Monitor;
```

## Monitor.adb

```
package body Monitor is

  protected body Access_Control is
    procedure Add(Amount: in Integer) is
    begin
      Value:=Value+Amount;
    end Add;
    procedure Subtract (Amount:in Integer) is
    begin
      Value:=Value-Amount;
    end Subtract;
    function Result return Integer is
    begin
      return Value;
    end Result;
  end Access_Control;

end;
```

```
with Ada.Integer_Text_IO;
use Ada.Integer_Text_IO;

with Monitor; use Monitor;

procedure Dado_Partilhado is
    -- N:Integer:=1; o objecto protegido deixa de ser declarado aqui
a: integer;
    task Incrementa_10;

    task body Incrementa_10 is
    begin
        for I in 1..10 loop
            -- N:=N+1; -- já não se acede directamente à variável partilhada
            Access_Control.Add(1); -- o acesso é feito através do monitor
        end loop;
    end Incrementa_10;

    task Decrementa_10;

    task body Decrementa_10 is
    begin
        for I in 1..10 loop
            --N:=N-1;
            Access_Control.Subtract(1);
        end loop;
    end Decrementa_10;

begin
    while not (Incrementa_10'Terminated and Decrementa_10'Terminated) loop
        null;
    end loop;
    a:=Access_Control.Result;
    Put(a);
end Dado_Partilhado;
```

