

Fondamenti di Informatica e Laboratorio

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Exercise (6 points)

Write a recursive function in language C with the following interface

```
int UgualiCons(int a[],int n);
```

that considers the portion of the array `a` between index 0 and `n` and returns

- 1 if there are two consecutive elements in the array that are equal
- 0 otherwise.

E.g., if `a={1,2,0,1,0,1,1,0}`, then `UgualiCons(a,7)=1`, because `a[5]=a[6]`, while `UgualiCons(a,4)=0` because in the portion between 0 and 4 there are no consecutive elements that are equal (there are `a[0]=a[3]`, but they are not consecutive).

After that, show how the following program (that invokes the function defined previously) is executed, using the activation records.

```
void p(int A[], int n, int *f)
{
    int i=4;
    for (i=0;i<n;i++)
        if (*f<A[i])
        {
            (*f)++;
            A[i]++;
        }
    n = UgualiCons(A,*f);
}

main()
{
    int A[4]={1,3,2,4},n=3,f=0;
    p(A,n,&f);
}
```

Solution

```

int UgualiCons(int a[],int n)
{
    if (n<=0)
        return 0;
    if (a[n]==a[n-1])
        return 1;
    else return UgualiCons(a,n-1);
}

```

