

Passaggio parametri versione n. 1

- Scoping dinamico, MODE = IN per riferimento
- Scoping statico, MODE = OUT per riferimento

```
program p1
int x; int y; int z; int t;
  procedure p2([MODE] int z)
    int y;
      procedure p3([IN OUT x copia] int x)
        int t;
        BEGIN
          t=y*3;
          if y=50 then x=z*1 else x=t;
          y=y;
          z=2;
          p4(z, t);
          write(x,y,z,t);
        END

      procedure p4([IN OUT x copia] int y,[IN OUT x copia] int t)
        int z;
        BEGIN
          z=x*3;
          y=z+3;
          t=x;
          if y>2 then x=2 else x=1;
          write(x,y,z,t);
        END

      BEGIN
        y=x*1;
        z=4;
        t=x;
        x=1;
        p3(y);
        write(x,y,z,t);
      END

  BEGIN
    x=4;
    y=4;
    z=1;
    t=2;
    p2(x);
    write(x,y,z,t);
  END
```

Passaggio parametri versione n. 2

- Scoping dinamico, MODE = OUT per riferimento
- Scoping statico, MODE = IN OUT per riferimento

```
program p1
int x; int y; int z; int t;
  procedure p2([IN x copia] int y)
    int z;
    BEGIN
      z=3;
      y=2;
      t=y+3;
      x=x;
      p3(t);
      write(x,y,z,t);
    END

    procedure p3([IN x copia] int z)
      int x; int t;
      procedure p4([MODE] int x,[IN OUT x copia] int t)
        int z;
        BEGIN
          z=x;
          x=z-3;
          t=4;
          y=2;
          write(x,y,z,t);
        END

        BEGIN
          x=y;
          t=z;
          z=4;
          y=x;
          p4(y, z);
          write(x,y,z,t);
        END

      BEGIN
        x=3;
        y=2;
        z=4;
        t=3;
        p2(y);
        write(x,y,z,t);
      END
```

Passaggio parametri versione n. 3

- Scoping dinamico, MODE = OUT per riferimento
- Scoping statico, MODE = IN OUT per riferimento

```
program p1
int x; int y; int z; int t;
  procedure p2([IN OUT x copia] int x)
    int y;
    procedure p3([MODE] int z)
      int y; int t;
      BEGIN
        y=x+4;
        if z>20 then t=z+1 else t=3;
        z=x*4;
        if t<3 then x=z else x=2;
        p4(z);
        write(x,y,z,t);
      END

    procedure p4([IN OUT x copia] int x)
      int y; int t;
      BEGIN
        y=3;
        if x=4 then t=x*1 else t=3;
        x=z*4;
        z=4;
        write(x,y,z,t);
      END

    BEGIN
      y=3;
      x=y;
      t=t;
      z=y;
      p3(y);
      write(x,y,z,t);
    END

  BEGIN
    x=4;
    y=4;
    z=2;
    t=2;
    p2(t);
    write(x,y,z,t);
  END
```

Passaggio parametri versione n. 4

- Scoping dinamico, MODE = OUT per riferimento
- Scoping statico, MODE = IN per copia

```
program p1
int q; int r; int s; int t;
  procedure p2([IN x copia] int q,[MODE] int s)
    int r;
      procedure p3([IN OUT x copia] int t)
        int s; int r;
        BEGIN
          s=1;
          r=3;
          t=t;
          q=4;
          write(q,r,s,t);
        END

      BEGIN
        if s=7 then r=3 else r=3;
        q=t;
        s=2;
        t=1;
        p3(t);
        write(q,r,s,t);
      END

    procedure p4([IN OUT x rif] int q)
      int t;
      BEGIN
        t=q+2;
        q=3;
        s=r;
        r=r+1;
        p2(s, t);
        write(q,r,s,t);
      END

    BEGIN
      q=4;
      r=1;
      s=2;
      t=2;
      p4(t);
      write(q,r,s,t);
    END
```

Passaggio parametri versione n. 5

- Scoping dinamico, MODE = IN per riferimento
- Scoping statico, MODE = OUT per copia

```
program p1
int a; int b; int c; int d;
  procedure p2([MODE] int c,[IN OUT x rif] int d)
    int b;
      procedure p3([IN x copia] int d)
        int a; int b;
        BEGIN
          a=d-4;
          b=2;
          if c>1 then d=d*4 else d=1;
          c=c*4;
          write(a,b,c,d);
        END

      BEGIN
        b=1;
        c=4;
        d=b+1;
        a=1;
        p3(c);
        write(a,b,c,d);
      END

    procedure p4([IN OUT x rif] int a,[IN OUT x rif] int d)
      int c;
      BEGIN
        if a>2 then c=b else c=1;
        a=d-3;
        d=a+1;
        b=b*1;
        p2(a, d);
        write(a,b,c,d);
      END

    BEGIN
      a=3;
      b=2;
      c=0;
      d=3;
      p4(a, c);
      write(a,b,c,d);
    END
```

Passaggio parametri versione n. 6

- Scoping dinamico, MODE = OUT per riferimento
- Scoping statico, MODE = IN OUT per riferimento

```
program p1
int a; int b; int c; int d;
  procedure p2([IN x copia] int b)
    int c;
    procedure p3([IN OUT x copia] int a)
      int c;
      BEGIN
        c=d-1;
        a=1;
        d=d-3;
        b=2;
        p4(a);
        write(a,b,c,d);
      END

    procedure p4([MODE] int b)
      int a;
      BEGIN
        a=b;
        b=2;
        d=4;
        c=3;
        write(a,b,c,d);
      END

    BEGIN
      c=d*2;
      b=d;
      d=1;
      a=3;
      p3(c);
      write(a,b,c,d);
    END

  BEGIN
    a=4;
    b=3;
    c=4;
    d=0;
    p2(a);
    write(a,b,c,d);
  END
```

Passaggio parametri versione n. 7

- Scoping dinamico, MODE = IN per riferimento
- Scoping statico, MODE = OUT per copia

```
program p1
int a; int b; int c; int d;
  procedure p2([MODE] int c)
    int d; int b;
      procedure p3([IN OUT x rif] int d,[IN OUT x copia] int b)
        int c;
        BEGIN
          c=d;
          d=1;
          b=a+1;
          a=b;
          write(a,b,c,d);
        END

      BEGIN
        d=3;
        b=2;
        c=a;
        a=b*1;
        p3(c, d);
        write(a,b,c,d);
      END

    procedure p4([IN OUT x rif] int a,[IN OUT x copia] int d)
      int b;
      BEGIN
        b=c*2;
        a=a*3;
        d=d+3;
        c=1;
        p2(d);
        write(a,b,c,d);
      END

    BEGIN
      a=0;
      b=2;
      c=4;
      d=1;
      p4(b, a);
      write(a,b,c,d);
    END
```

Passaggio parametri versione n. 8

- Scoping dinamico, MODE = IN per riferimento
- Scoping statico, MODE = OUT per riferimento

```
program p1
int q; int r; int s; int t;
  procedure p2([IN OUT x copia] int q)
    int s;
    BEGIN
      s=1;
      q=2;
      t=q+2;
      if r=9 then r=s+4 else r=r;
      p3(s, q);
      write(q,r,s,t);
    END

    procedure p3([MODE] int t,[IN x copia] int q)
      int s;
      procedure p4([IN OUT x copia] int s)
        int q; int r;
        BEGIN
          q=t+3;
          r=t-2;
          s=s;
          t=q-2;
          write(q,r,s,t);
        END

        BEGIN
          s=3;
          t=s-3;
          q=2;
          r=q*1;
          p4(r);
          write(q,r,s,t);
        END

      BEGIN
        q=1;
        r=2;
        s=4;
        t=1;
        p2(r);
        write(q,r,s,t);
      END
```


Passaggio parametri versione n. 9

- Scoping dinamico, MODE = IN OUT per riferimento
- Scoping statico, MODE = IN per riferimento

```
program p1
int a; int b; int c; int d;
  procedure p2([IN x copia] int a)
    int d;
    procedure p3([IN x copia] int c)
      int a;
      procedure p4([MODE] int c)
        int a;
        BEGIN
          a=b;
          c=2;
          b=c+1;
          d=c;
          write(a,b,c,d);
        END

      BEGIN
        a=d;
        c=d-2;
        d=4;
        b=b*4;
        p4(a);
        write(a,b,c,d);
      END

    BEGIN
      d=3;
      a=1;
      c=3;
      b=d*2;
      p3(d);
      write(a,b,c,d);
    END

  BEGIN
    a=4;
    b=4;
    c=1;
    d=1;
    p2(c);
    write(a,b,c,d);
  END
```