

Mavzu: Tarmoqlanuvchi dasturlar tuzish

Ishdan maqsad: Paskal dasturlash muhitida tarmoqlanuvchi dasturlar tuzish bo'yicha ko'nikmalar hosil qilish.

Uslubiy ko'rsatmalar

Shartsiz o'tish operatori (goto) "...ga o'tish" degan ma'noni anglatadi va u biror operator bajarilgandan keyin navbatdagi operatorni bajarishga emas balki boshqa biror belgi yordamida belgilangan operatorni bajarishda ishlatiladi. Eslatib o'tamiz, belgi raqam yoki harf simvolidan iborat bo'lishi mumkin.

Мисол : GOTO 999;

GOTO EndBlock;

Goto operatori ishlatilganda belgi ta'sir qiladigan joy bu faqat shu operator yozilgan blok bo'lishi mumkin. Boshqarishni boshqa blokka uzatish man etiladi.

Shartli operatorlar.

Turbo Pascal tilida ikkita shartli operatorlar mavjud : IF va CASE. IF shartli operatori , operatorlarning bajarilish jarayonining tabiiy holatini o'zgartiradigan eng ko'p vositalardan biri. U quyidagi ko'rinishlardan biriga ega bo'lishi mumkin:

IF <shart> THEN <operator1> ELSE <operator2>;

IF <shart> THEN <operator>;

Birinchi holatda , agar ifoda qiymati haqiqat bo'lsa , <operator1>bajariladi , agar haqiqat emas bo'lsa <operator2>bajariladi. Ikkinchi holatda - agar ifoda natijasi True bulsa , <operator>bajariladi, agar False bo'lsa - IF operatoridan keyingi operator bajariladi. IF operatorlari joylashtirilgan bo'lishi mumkin .

Misol. Quyidagi funksiyaning qiymatini hisoblash uchun dastur yozing :

$$y = \begin{cases} \sqrt{x}/2 & \text{agar } x \geq 1 \\ e^{1/3 \ln x} / 3 & \text{agar } 0 < x < 1 \\ e^{1/4 \ln |x|} / 4 & \text{agar } x < 0 \end{cases}$$

Bu misol shartli o'tish operatoridan foydalanishni namoyish etadi.

program misol_2;

var

y,x:real;

begin

readln(x);

if x>=1

then y:=sqrt(x)/2

else if x>0

then y:=exp(1/3*ln(x))/3

else y:=exp(1/4*ln(abs(x)))/4;

writeln(y:5:2);

end.

Topshiriq:

IF THEN yoki GOTO operatorlari yordamida funksiyani hisoblash dasturini tuzing.

№		№	
1	$y = \begin{cases} \sqrt[3]{x^2 + a^2}, & \text{agar } x^2 + a^2 < 4 \\ x + a, & \text{agar } x^2 + a^2 = 4 \\ \ln x, & \text{agar } x^2 + a^2 > 4 \end{cases}$	8	$y = \begin{cases} x^2 - x, & \text{agar } x < a \\ a^{x-1}, & \text{agar } x = a \\ x^2 - 2a, & \text{agar } x > a \end{cases}$

2	$y = \begin{cases} \sin^2 x, \text{agar } x < \pi/4 \\ \sin(\operatorname{tg} x), \text{agar } x = \pi/4 \end{cases}$	9	$y = \begin{cases} \operatorname{tg} x + a^x, \text{agar } x < a \\ 0,5\sqrt{1+a^2}, \text{agar } x = a \\ \ln \sin x , \text{agar } x > a \end{cases}$
3	$y = \begin{cases} 3x^2 + 4\sqrt{a-x}, \text{agar } a > x \\ \sin\sqrt{3a+x}, \text{agar } a = x \\ e^{\sqrt{x+a}}, \text{agar } a < x \end{cases}$	10	$y = \begin{cases} 4,7x + 1,3^x, \text{agar } x < 1 \\ 0,5x\sqrt{1+x^2}, \text{agar } x = a \\ \ln \sin x , \text{agar } x > 1 \end{cases}$
4	$y = \begin{cases} a \sin wt, \text{agar } a - wt < 1 \\ a \cos wt, \text{agar } a - wt = 1 \\ a \operatorname{tg} wt, \text{agar } a - wt > 1 \end{cases}$	11	$y = \begin{cases} ax^3 + 3\ln x+1,2 , \text{agar } ax < 1 \\ 2ax + 3a^2x^2, \text{agar } ax = 1 \\ e^{\sqrt{ax+\sin x}}, \text{agar } ax > 1 \end{cases}$
5	$y = \begin{cases} \sin\sqrt{x}, \text{agar } x = \pi/2 \\ \operatorname{tg}\sqrt{x+1}, \text{agar } x > \pi/2 \\ \sin(\cos x), \text{agar } x < \pi/2 \end{cases}$	12	$y = \begin{cases} x + 3a^2 + \cos x, \text{agar } a < x \\ \sin 2a - x^2 , \text{agar } a = x \\ x^2 + \operatorname{ctg} x^3, \text{agar } a > x \end{cases}$
6	$y = \begin{cases} \sqrt[5]{x-\pi} + \sin \pi/2, \text{agar } x = \pi/2 \\ \operatorname{arctg}\sqrt{x+1}, \text{agar } x > \pi/2 \\ \sin(\cos x), \text{agar } x < \pi/2 \end{cases}$	13	$y = \begin{cases} 4x + 4,3\sin x, \text{agar } x < 1 \\ 2\sin x + x^3 + 1, \text{agar } x = 2 \\ 1,5x - x^2, \text{agar } 0 \leq x < 2 \end{cases}$
7	$y = \begin{cases} 3^{x-1}, \text{agar } x > 1 \\ (x-1)^3, \text{agar } x < 1 \\ 0, \text{agar } x = 1 \end{cases}$	14	$y = \begin{cases} x^a + \ln x+a , a \cdot x < 2 a \\ x^2 + e^{x-a}, \text{если } x = 2 a \\ a^x + \sin\sqrt{x-a}, \text{если } x > 2 a \end{cases}$

Misol:

$y = \begin{cases} \sqrt{x}, \text{ agar } x \geq 1 \\ \ln x, \text{ agar } 0 < x < 1 \\ e^x, \text{ agar } x \leq 0 \end{cases}$ PROGRAM Tarmoq; VAR X,Y:REAL; BEGIN READLN(X); IF X>=1 THEN Y:=SQRT(X) ELSE IF (X>0) AND (X<1) THEN Y:=LN (X) ELSE Y:=EXP (X); Writeln('Y=',Y); END.	$y = \begin{cases} \frac{\sin x}{x^2+1}, \text{agar } x < -1 \\ \operatorname{arctg}^2 x + e^{\sqrt[3]{x}}, \text{agar } -1 \leq x \leq 1 \\ \ln(x+1,8), \text{agar } x > 1 \end{cases}$ Dastur: Program tarmoq; Label 1,2,3; var x,y:real; begin Write('X=');Readln(x) ; if x>-1 then goto 1; if x<1 then goto 2' y:=sqr(arctan(x))+exp(ln(x)/3); goto3; 1: y:=sin(x)/sqr(x)+1); goto 3; 2: y:=ln(x+1,8); 3: Writeln('X=' ,x, ' Y=',y); end.
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