

\FORMULA $A=(x \text{ nxor } y)*z$

\nastroyka shemy

link l1:ct

link l2:rdm

link l3:rdd

link ewh:10 \mladshiy razriad starshego adresa

link M: z,z,z,z,z,z,z,z,14,13,12,11

link ra:3,2,1,0

link rb:3,2,1,0

\dannye

dw 0: 0fff9h \x=-7

dw 1h: 5 \y

dw 2h: 4 \z

dw 13h: 0 \addr x

dw 93h: 3 \adresa molodshyh rozryadiv resultatu

dw 5h: 1

dw 6h: 2

\programma

dw 000Ah: 0000110000010011% \mov1 r15, dev_i

dw 000Ch: 0010110000000101% \writei addr y (vstanovlennya registru danih pristroyu vvodu)

dw 000Eh: 0001010000010011% \nxor r15, dev_i

dw 0010h: 0010110000000110% \writei addr z

dw 0012h: 0001110000010011% \mul r15, dev_i

dw 0014h: 0010010010010011% \mov2 dev_o, r15, r10 (zapis resultatu u 2 susidni komirki pamyati)

dw 0016h: 0011010000000000% \end

\mikroprogramma

ORG 0h {cjp nz, res;}

ORG 1h {cjp nz,mov1;}

ORG 2h {cjp nz,nxorr;}

ORG 3h {cjp nz,mul;}

ORG 4h {cjp nz,mov2;}

ORG 5h {cjp nz, writei;}

ORG 6h {cjp nz,end;}

\ustanovka nachalnogo adresa

res {and r13, r13, z;}

{or r13, r13, 000Ah;}

\chtenie comandy

begin {ewh; oey; xor nil, r13, r13;}

{ewl; oey; or nil, r13, z;}

{cjp rdm, cp; r; or r14, bus_d, z;}

\raspakovka comandy

\proverka formata (odnoadresna - kod 0)

{and nil, r14, 8000h; load rm, flags;}

{cjp not rm_z, end;}

\proverka tipa adresazyi (nepryama - kod 1)

{and nil, r14, 0400h; load rm, flags;}

{cjp rm_z, end;}

\vybir adresy operanda v r11 (z RD pristroyu vvody/vivodu, adresa yakogo - v r14)

{ewl;oey; or nil,r14,z;}

{cjp rdm, cp; r;or r11,bus_d,z;}

\vybor operanda v r12 iz OP za adresoyu v r11

{ewl;oey; or nil,r11,z;}

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{cjp rdm,cp;r;or r12,bus_d,z;}
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\zagruzka adresa registra v RB

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{oey;or nil,r14,z;load rb;load ra;}
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\perekhod po kodu operaciji

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{oey;or nil, r14,z;jmap;}
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\mikroprogramy komand

\-----mov1-----

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mov1 {or r15,r12,z;cjp nz,formadd;}
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\-----mul-----

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mul {or nil,r12,z; cjp not zo,notnul;}
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{xor r15,r15,r15;cjp nz,formadd;}
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notnul {or r11,r12,z;} \r11 - mnozchnik
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{or r1,r15,z;} \r1, r0 - mnozhene
```

```
{xor r15, r15;} \r15, r10 - rezultat
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cycle {and nil, r11, 1; load rm, flags;}
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{cjp rm_z, mulnext;}
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{add r15, r15, r1, z; load rm, flags;}
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{add r10, r10, r0, rm_c;}
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mulnext {or sll, r1, z;}
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```
{or sl.25, r0, z;}
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```
{or srl, r11, z;load rm, flags;}
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```
{cjp not rm_z,cycle;}
```

```
{cjp nz,formadd;}
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\-----nxor-----

nxorr {nxor r15,r15,r12;cjp nz,formadd;}

\-----mov2-----

mov2 {oey; or nil,r15,z;w;cjp rdm,cp;} \molodschi rosryadi

{add r11, r11, z, nz;}

{ewl;oey; or nil,r11,z;}

{oey; or nil,r10,z;w;cjp rdm,cp;} \starschi rozryadi

{cjp nz,formadd;}

\-----writei-----

writei {xor r2, r2;}

{or r2, 0013h;}

{ewl; oey; or nil,r2,z;}

{cjp rdm, cp;oey; or nil,r11,z;w;}

{cjp nz,formadd;}

\formir sled adresa i na wyborku komandy

formadd{add r13,r13,2,z;}

{cjp nz,begin;}

\-----end-----

\konec programmy

end {}