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1 Turbo Assembler Version 2.0 12/15/08 00:39:13 Page 1
2 ASM_KST9.ASM
3
4 1 ;
5 2 ; Kestutis Stankevicius, II-06/3
6 3 ; Asemblerinis programavimas
7 4 ;
8 5 ; 9 Auditorijos darbas:
9 6 ;
10 7 ; x=a-b kur a,b ivedami skaiciai, reikia naudoti proceduras
11 8 ;
12 9 0000 stekas SEGMENT STACK
13 10 0000 0100*(??) DB 256 DUP (?) ; isskiriame atmintyje 256 baitus
14 11 0100 stekas ENDS
15 12
16 13 = 000D CR EQU 13
17 14 = 000A LF EQU 10
18 15 ; konstantos
19 16 = 002B plus EQU '+'
20 17 = 002D minus EQU '-'
21 18
22 19 0000 duomenys SEGMENT
23 20 ; aprasome kintamuosius
24 21 0000 04 ?? 04*(??) ivsr DB 4, ?, 4 DUP(?)
25 22 0006 0D 0A 49 76 65 73 6B+ pra1 DB CR, LF, 'Iveskite skaiciu a: ','$'
26 23 69 74 65 20 73 6B 61+
27 24 69 63 69 75 20 61 3A+
28 25 20 24
29 26 001D 0D 0A 49 76 65 73 6B+ pra2 DB CR, LF, 'Iveskite skaiciu b: ','$'
30 27 69 74 65 20 73 6B 61+
31 28 69 63 69 75 20 62 3A+
32 29 20 24
33 30 0034 0D 0A 20 pra3 DB CR, LF, ' '
34 31 0037 0D 0A 20 20 52 65 7A+ DB CR, LF, ' Rezultatas: a-b=','$'
35 32 75 6C 74 61 74 61 73+
36 33 3A 20 61 2D 62 3D 24
37 34
38 35 004C 0D 0A 4B 6C 61 69 64+ klaidpr DB CR, LF, 'klaida!'
39 36 61 21
40 37
41 38 0055 00 a DB 0
42 39 0056 00 b DB 0
43 40
44 41 0057 04*(20) 24 x DB 4 DUP (' '), '$'
45 42
46 43 005C 0A desimt DB 10
47 44
48 45 005D duomenys ENDS
49 46
50 47 0000 programa SEGMENT
51 48 ASSUME CS:programa, DS:duomenys, SS:stekas
52 49
53 50 ; Procedura IVEDIMAS
54 51 0000 Ivedimas PROC
55 52 0000 BA 0000r LEA DX, ivsr
56 53 0003 B4 0A MOV AH, 0Ah
57 54 0005 CD 21 INT 21h
58 55 0007 C3 RET
59 56 0008 Ivedimas ENDP
60 57
61 58 ; Procedura KONVERTUOTI
62 59 0008 Konvertuoti PROC
63 60
64 61 0008 8A 0E 0001r MOV CL, ivsr+1 ; ciklu skaicius
65 62 000C B5 00 MOV CH, 0
66 63 000E B4 00 MOV AH, 0
67 64 0010 BE 0002r LEA SI, ivsr+2
68 65 0013 8A 3C MOV BH, [SI]
69 66 ;
70 67 0015 E8 001A CALL Tikrinimas
71 68
72 69 0018 8A C7 MOV AL, BH

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73      70 001A FE C9      DEC CL
74      71 001C 80 F9 00    CMP CL, 0
75      72 001F 74 10      JE Return
76      73
77      74 0021 46          ciklas: INC SI
78      75 0022 8A 3C      MOV BH, [SI]
79      76
80      77 0024 E8 000B      CALL Tikrinimas
81      78
82      79 0027 F6 26 005Cr    MUL desimt
83      80 002B 02 C7      ADD AL, BH
84      81 002D 70 11      JO Klaida1
85      82 002F E2 F0      LOOP ciklas
86      83 0031      Return:
87      84 0031 C3      RET
88      85 0032      Konvertuoti ENDP
89      86
90      87      ; Procedura TIKRINIMAS
91      88 0032      Tikrinimas PROC
92      89
93      90 0032 80 FF 30      CMP BH, 30h
94      91 0035 7C 09      JL Klaida1
95      92 0037 80 FF 39      CMP BH, 39h
96      93 003A 7F 04      JG Klaida1
97      94 003C 80 EF 30      SUB BH, 30h
98      95 003F C3      RET
99      96 0040      Tikrinimas ENDP
100     97
101     98      ; I Klaida
102     99 0040 E9 008B      Klaida1: JMP Klaida
103    100
104    101      ; Procedura SPAUSDINTI
105    102 0043      Spausdinti PROC
106    103
107    104      ; kuriam rezultata
108    105 0043 B4 00      MOV AH, 0
109    106      ; sveika dalis
110    107 0045 F6 36 005Cr    DIV desimt
111    108 0049 88 26 005Ar    MOV x+3,AH
112    109 004D 80 06 005Ar 30  ADD x+3,30h
113    110 0052 B4 00      MOV AH, 0
114    111
115    112 0054 F6 36 005Cr    DIV desimt
116    113 0058 88 26 0059r    MOV x+2,AH
117    114 005C 80 06 0059r 30  ADD x+2,30h
118    115 0061 B4 00      MOV AH, 0
119    116
120    117 0063 F6 36 005Cr    DIV desimt
121    118 0067 88 26 0058r    MOV x+1,AH
122    119 006B 80 06 0058r 30  ADD x+1,30h
123    120
124    121      ; pranesimas3
125    122 0070 B4 09      MOV AH, 09h
126    123 0072 BA 0034r      LEA DX, pra3
127    124 0075 CD 21      INT 21h
128    125
129    126      ; spausdinimas
130    127 0077 B4 09      MOV AH, 09h
131    128 0079 BA 0057r      LEA DX, x
132    129 007C CD 21      INT 21h
133    130
134    131 007E C3      RET
135    132 007F      Spausdinti ENDP
136    133
137    134 007F      START:
138    135      ; pradzia
139    136 007F B8 0000s      MOV AX, duomenys
140    137 0082 8E D8      MOV DS, AX
141    138
142    139      ; isvalyti ekrana
143    140 0084 B8 0002      MOV AX, 0002h
144    141 0087 CD 10      INT 10h

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145      142
146      143                ; pranesimas1
147      144 0089 B4 09      MOV AH, 09h
148      145 008B BA 0006r   LEA DX, pra1
149      146 008E CD 21      INT 21h
150      147
151      148                ; Ivedimas a
152      149 0090 E8 FF6D     CALL Ivedimas
153      150 0093 E8 FF72     CALL Konvertuoti
154      151 0096 A2 0055r   MOV a, AL
155      152
156      153                ; pranesimas2
157      154 0099 B4 09      MOV AH, 09h
158      155 009B BA 001Dr   LEA DX, pra2
159      156 009E CD 21      INT 21h
160      157
161      158                ; Ivedimas b
162      159 00A0 E8 FF5D     CALL Ivedimas
163      160 00A3 E8 FF62     CALL Konvertuoti
164      161 00A6 A2 0056r   MOV b, AL
165      162
166      163                ; a-b
167      164 00A9 28 06 0055r SUB a, AL ; a-b
168      165                ; Rezultata pervedam atgal i AL
169      166 00AD A0 0055r   MOV AL,a
170      167
171      168                ; tikrinam ar neigiamas
172      169 00B0 3C 00      CMP AL, 0
173      170 00B2 7C 0C      JL Neigiamas
174      171                ; Parodom, kad teigiamas
175      172 00B4 B7 2B      MOV BH, plus
176      173 00B6 88 3E 0057r MOV x, BH
177      174
178      175                ; Spausdiname
179      176 00BA E8 FF86     CALL Spausdinti
180      177
181      178                ; sokam i Pabaiga
182      179 00BD EB 16 90   JMP Pabaiga
183      180
184      181                ; Perdarome i Neigiamas:
185      182 00C0                Neigiamas:
186      183 00C0 B7 2D      MOV BH, minus
187      184 00C2 88 3E 0057r MOV x, BH
188      185                ; * (-1) AL
189      186 00C6 F6 D8      NEG AL
190      187                ; Spausdiname
191      188 00C8 E8 FF78     CALL Spausdinti
192      189                ; sokam i Pabaiga
193      190 00CB EB 08 90   JMP Pabaiga
194      191
195      192 00CE                klaida:
196      193
197      194 00CE B4 09      MOV AH, 09h
198      195 00D0 BA 004Cr   LEA DX, klaidpr
199      196 00D3 CD 21      INT 21h
200      197
201      198 00D5                Pabaiga:
202      199                ; paspausti bet koki klavisa
203      200 00D5 B4 07      MOV AH, 07h
204      201 00D7 CD 21      INT 21h
205      202
206      203                ; iseiti is programos
207      204 00D9 B4 4C      MOV AH, 4ch
208      205 00DB CD 21      INT 21h
209      206
210      207 00DD                programa ENDS
211      208
212      209                END START

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Symbol Table

Symbol	Name	Type	Value
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217
218 ??DATE          Text      "12/15/08"
219 ??FILENAME      Text      "ASM_KST9"
220 ??TIME          Text      "00:39:13"
221 ??VERSION       Number    0200
222 @CPU            Text      0101H
223 @CURSEG          Text      PROGRAMA
224 @FILENAME        Text      ASM_KST9
225 @WORDSIZE        Text      2
226 A               Byte      DUOMENYS:0055
227 B               Byte      DUOMENYS:0056
228 CIKLAS           Near      PROGRAMA:0021
229 CR               Number    000D
230 DESIMT           Byte      DUOMENYS:005C
231 IVEDIMAS         Near      PROGRAMA:0000
232 IVSR             Byte      DUOMENYS:0000
233 KLAIDA           Near      PROGRAMA:00CE
234 KLAIDA1          Near      PROGRAMA:0040
235 KLAIDPR          Byte      DUOMENYS:004C
236 KONVERTUOTI     Near      PROGRAMA:0008
237 LF               Number    000A
238 MINUS            Number    002D
239 NEIGIAMAS        Near      PROGRAMA:00C0
240 PABAIGA          Near      PROGRAMA:00D5
241 PLIUS            Number    002B
242 PRA1             Byte      DUOMENYS:0006
243 PRA2             Byte      DUOMENYS:001D
244 PRA3             Byte      DUOMENYS:0034
245 RETURN           Near      PROGRAMA:0031
246 SPAUSDINTI       Near      PROGRAMA:0043
247 START            Near      PROGRAMA:007F
248 TIKRINIMAS       Near      PROGRAMA:0032
249 X               Byte      DUOMENYS:0057
250
251 Groups & Segments      Bit Size Align  Combine Class
252
253 DUOMENYS              16  005D Para      none
254 PROGRAMA              16  00DD Para      none
255 STEKAS                16  0100 Para      Stack
256

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