Exercício 05:

Escrever um programa para escrever na memória RAM as letras maiúsculas do alfabeto.

| 0x0200 | A | B | C | D | E | F | G | Н |
|--------|---|---|---|---|---|---|---|---|
| 0x0208 | 1 | C | K | L | M | N | 0 | P |
| 0x0210 | Q | R | S | T | U | V | W | X |
| 0x0218 | Y | Z | | | | | | |

TE124-Microcontroladores:

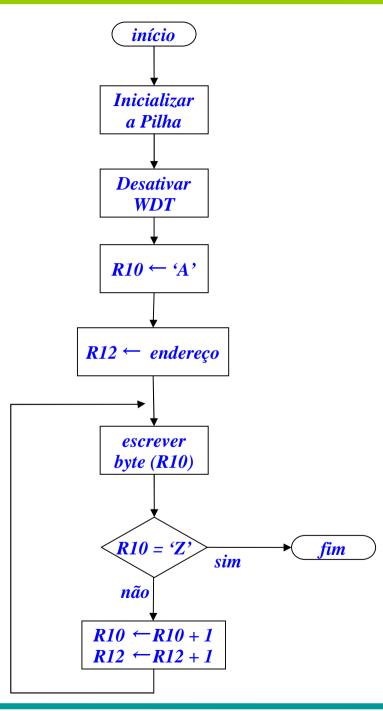
Assembly MSP430

| 0 0 000 NVL (null) 1 1 001 SVH (start of heading) 3 3 2 0 0 40 4#32; Space 2 2 002 STX (start of text) 3 4 22 0 024 4#32; " 66 41 101 4#55; A 97 61 141 4#97; B 3 3 003 ETX (end of text) 3 5 23 043 4#35; # 67 43 103 4#67; C 99 63 143 4#99; C 4 4 004 ETX (end of transmission) 5 5 005 ENQ (enquiry) 3 7 25 045 4#35; # 68 44 104 4#68; D 100 64 144 4#100; d 6 6 006 ACK (acknowledge) 3 8 26 046 4#36; C 70 46 106 4#70; F 102 66 146 4#100; f 7 7 007 EEL (bell) 3 9 27 047 4#39; ' 71 47 107 4#71; G 103 67 147 4#103; g 8 8 010 ES (backspace) 4 0 28 050 4#40; C 72 48 110 4#72; H 104 68 150 4#104; h 10 A 012 LF (NL line feed, new line) 11 B 013 VT (vertical tab) 12 C 014 FF (NF form feed, new page) 13 D 015 CR (carriage return) 14 E 016 30 (shift out) 15 F 017 SI (shift in) 16 10 020 DLE (data link escape) 17 11 021 DC1 (device control 1) 18 12 022 DC2 (device control 1) 19 13 03 DC3 (device control 2) 19 13 03 DC3 (device control 3) 20 14 024 DC4 (device control 4) 21 15 025 NAK (negative acknowledge) 23 17 027 ETB (end of trans. block) 24 18 030 CAN (cancel) 25 19 031 EX (escape) 26 1A 032 SUB (substitute) 27 1B 033 ESC (escape) 28 10 056 ESR (record separator) 29 10 058 ESR (record separator) 30 10 10 058 ESR (record separator) 30 10 10 058 ESR (record separator) 30 12 058 ESR (record separator) 30 12 070 4#63; 2 95 5F 137 4#95; | Dec Hx Oct Char | Dec | Нх | Oct | Html | Chr | Dec | Нх | Oct | Html | Chr | Dec | Нх | Oct | Html Chr |
|--|--|-----|------------|-----|----------------|-------------|-----|------------|-----|-------------------|-----|-----|----|-----|----------------------|
| 2 2 002 STX (start of text) 3 3 003 ETX (end of text) 4 4 004 EOT (end of transmission) 5 5 005 ENQ (enquiry) 6 6 006 ACK (acknowledge) 7 7 007 BEL (bell) 8 8 010 BS (backspace) 9 9 011 TAB (horizontal tab) 10 A 012 LF (NL line feed, new line) 11 B 013 VT (vertical tab) 12 C 014 FF (NP form feed, new page) 13 D 015 CR (carriage return) 14 E 016 SO (shift out) 15 F 017 SI (shift in) 16 10 020 DLE (data link escape) 17 11 021 DC1 (device control 1) 18 11 021 DC1 (device control 1) 19 12 DC2 (device control 1) 19 13 023 DC3 (device control 1) 19 13 024 DC4 (device control 1) 19 13 025 DC3 (device control 1) 19 13 027 CFTS (end of trans. block) 25 19 031 EM (end of medium) 25 5 005 ENQ (enquiry) 26 1A 032 SUB (substitute) 27 18 033 ESC (escape) 28 1C 034 FS (file separator) 29 1D 035 GS (group separator) 20 1C 034 FS (file separator) 20 1 | 0 0 000 <mark>NUL</mark> (null) | 32 | 20 | 040 | | Space | 64 | 40 | 100 | <u>&</u> #64; | 0 | 96 | 60 | 140 | & # 96; |
| 3 3 003 ETX (end of text) 4 4 004 ePOT (end of transmission) 5 5 005 ENQ (enquiry) 37 25 045 e#37; % 6 6 006 ACK (acknowledge) 8 8 010 BS (backspace) 9 9 011 TAB (horizontal tab) 1 10 A 012 LF (NL line feed, new line) 1 11 B 013 VT (vertical tab) 1 2 20 014 FF (NP form feed, new page) 1 3 2 015 s#40; 4 2 2 054 s#40; 4 2 2 054 s#40; 4 2 2 055 s#40; 5 2 0 1 1 6 5 6 5 1 1 1 1 1 1 1 0 1 0 1 0 1 1 1 1 1 1 1 | l l 001 <mark>SOH</mark> (start of heading) | 33 | 21 | 041 | ۵#33; | ļ | 65 | 41 | 101 | ۵#65; | A | 97 | 61 | 141 | ۵#97; <mark>a</mark> |
| 4 4 004 EOT (end of transmission) 36 24 044 4#36; \$ 68 44 104 6#68; D 100 64 144 6#100; d 5 5 005 ENQ (enquiry) 37 25 045 6#37; \$ 69 45 105 6#68; E 101 65 145 6#101; e 6 6 006 ACK (acknowledge) 38 26 046 6#30; \$ 70 46 106 6#70; F 102 66 146 6#102; f 7 7 007 BEL (bell) 39 27 047 6#30; \$ 71 47 107 6#71; \$ 102 66 146 6#102; f 9 9 011 TAB (horizontal tab) 41 29 051 6#41; D 73 49 111 6#73; I 105 69 151 6#105; i 10 A 012 LF (NIL line feed, new line) 42 2A 052 6#42; T 74 4A 112 6#74; J 105 69 151 6#105; i 11 B 013 VT (vertical tab) 42 2B 053 6#40; T 75 4B 113 6#77; K 107 6B 153 6#106; J 11 B 013 VT (vertical tab) 45 2D 055 6#46; T 77 4D 115 6#77; K 100 6B 155 6#100; D 11 TAB (carriage return) 45 2D 055 6#46; T 77 4D 115 6#77; K 100 6B 155 6#100; D 11 TAB (acknowledge) 48 3D 056 6#46; T 78 4E 116 6#78; N 100 6E 156 6#100; D 11 TAB (acknowledge) 48 3D 056 6#46; T 78 4E 116 6#78; N 100 6E 156 6#110; D 15 F 017 SI (shift in) 47 2F 057 6#47; / 79 4F 117 6#79; O 111 6F 157 6#111; O 11 10 10 10 10 10 10 10 10 10 10 10 10 | 2 2 002 STX (start of text) | 34 | 22 | 042 | @#3 4 ; | rr | 66 | 42 | 102 | <u>@</u> #66; | В | 98 | 62 | 142 | ۵#98; <mark>b</mark> |
| 5 5 005 EMQ (enquiry) 6 6 6 006 ACK (acknowledge) 7 7 007 BEL (bell) 8 8 010 BS (backspace) 9 9 011 TAB (horizontal tab) 10 A 012 LF (NL line feed, new line) 11 B 013 VT (vertical tab) 12 C 014 FF (NP form feed, new page) 13 D 015 CR (carriage return) 14 E 016 SO (shift out) 15 F 017 SI (shift in) 16 10 020 DLE (data link escape) 17 10 020 DLE (device control 1) 18 10 021 DC1 (device control 2) 19 11 021 DC1 (device control 3) 20 14 024 DC4 (device control 4) 21 15 025 MAK (negative acknowledge) 21 17 027 FTB (end of trems. block) 22 16 034 FS (file separator) 23 16 036 FS (group separator) 24 16 036 FS (group separator) 25 10 036 FS (group separator) 26 16 036 FS (group separator) 26 16 036 CF (group separator) 27 2 48 100 6470; F 102 66 146 64103; g 70 447 107 6471; G 103 67 147 64103; g 70 447 107 6471; G 103 67 147 64103; g 70 447 107 6471; G 103 67 147 64103; g 104 64 105 64103; g 104 64 105 64104; h 102 67 147 6470; h 102 67 147 64703; g 102 67 147 6470; h 102 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 102 67 147 6470; h 102 67 147 6470; h 102 67 147 6470; h 102 67 147 64703; g 102 67 147 6470; h 102 67 147 64703; g 102 67 147 64705; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 67 147 64703; g 103 67 147 6470; h 102 | 3 3 003 ETX (end of text) | 35 | 23 | 043 | # | # | 67 | 43 | 103 | C | C | | | | |
| 6 6 006 ACK (acknowledge) | 4 4 004 <mark>EOT</mark> (end of transmission) | 36 | | | | | 68 | 44 | 104 | D | D | | | | |
| 7 7 007 BEL (bell) 39 27 047 4#39; 71 47 107 4#71; 6 103 67 147 4#103; 9 8 8 010 BS (backspace) 40 28 050 4#40; 72 48 110 472; H 104 68 150 4#104; h 105 69 151 4#105; i 10 A 012 LF (NL line feed, new line) 42 2A 052 4#42; 74 4A 112 4#74; I 105 69 151 4#105; i 11 B 013 VT (vertical tab) 43 2B 053 4#43; + 75 4B 113 4#75; K 107 6B 153 4#107; k 12 C 014 FF (NP form feed, new page) 44 2C 054 4#44; 76 4C 114 4#76; L 108 6C 154 4#108; i 11 B 015 CR (carriage return) 45 2D 055 4#45; - 77 4D 115 4#76; L 108 6C 154 4#108; i 11 G 10 020 DLE (data link escape) 48 30 060 4#48; 0 79 4F 117 4#79; 0 111 6F 157 4#111; 0 16 10 020 DLE (data link escape) 48 30 060 4#48; 0 80 50 120 4#80; P 112 70 160 4#112; P 17 11 021 DC1 (device control 1) 49 31 061 4#49; 1 81 51 121 4#81; 0 113 71 161 4#113; q 114 022 DC2 (device control 2) 50 32 062 4#50; 2 82 52 122 4#82; R 114 72 162 4#114; E 19 13 023 DC3 (device control 4) 52 34 064 4#52; 4 84 54 124 4#84; T 116 74 164 4#116; E 21 15 025 NAK (negative acknowledge) 53 35 065 4#55; 5 85 55 125 4#86; U 118 76 166 4#116; E 21 16 026 SVM (synchronous idle) 54 36 066 4#56; 8 85 55 125 4#80; V 118 76 166 4#116; V 23 17 027 ETB (end of trans. block) 55 37 067 4#55; 7 87 57 127 4#80; V 118 76 166 4#119; W 24 18 030 CAN (cancel) 57 39 071 4#55; 9 89 59 131 4#89; Y 121 79 171 4#121; Y 26 1A 032 SUB (substitute) 58 3A 072 4#56; 8 90 5A 132 4#90; Z 122 7A 172 4#122; Z 27 1B 033 ESC (escape) 59 3B 073 4#59; 9 91 5B 133 4#91; [123 7B 173 4#122; Z 27 1B 035 ESC (escape) 59 3B 073 4#59; 9 91 5B 133 4#91; [125 7D 175 6#122;] 28 1D 035 GS (group separator) 61 3D 075 4#66; > 94 5E 136 4#94; 1 126 7E 176 4#126; ~ | | 37 | | | | | 69 | | | | | | | | |
| 8 8 010 BS (backspace) 40 28 050 & #40; (72 48 110 & #72; H 104 68 150 & #104; h 9 9 011 TAE (horizontal tab) 41 29 051 & #41;) 73 49 111 & #73; I 105 69 151 & #105; i 10 A 012 LF (NL line feed, new line) 42 2A 052 & #42; * 74 4A 112 & #74; J 106 6A 152 & #106; j 11 B 013 VT (vertical tab) 42 2B 053 & #43; + 75 4B 113 & #75; K 107 6B 153 & #107; k 12 C 014 FF (NF form feed, new page) 44 2C 054 & #44; , 76 4C 114 & #76; L 108 6C 154 & #108; l 13 D 015 CR (carriage return) 45 2D 055 & #45; - 77 4D 115 & #77; M 109 6D 155 & #109; m 14 E 016 SO (shift out) 46 2E 056 & #46; . 78 4E 116 & #78; M 110 6E 156 & #110; n 15 F 017 SI (shift in) 47 2F 057 & #47; / 79 4F 117 & #79; O 111 6F 157 & #111; O 16 10 020 DLE (data link escape) 43 00 060 & #48; O 80 50 120 & #80; P 112 70 160 & #112; P 17 11 021 DC1 (device control 1) 49 31 061 & #49; 1 81 51 121 & #81; O 113 71 161 & #113; O 18 022 DC2 (device control 2) 50 32 062 & #50; 2 82 52 122 & #80; P 112 70 160 & #112; P 13 023 DC3 (device control 4) 52 34 064 & #55; 3 30 66 & #55; 5 125 & #85; U 117 75 165 & #116; E 2 15 025 NAK (negative acknowledge) 53 35 065 & #53; 5 85 51 125 & #88; U 117 75 165 & #116; E 2 15 025 NAK (negative acknowledge) 53 35 065 & #55; 5 85 51 125 & #88; U 117 75 165 & #116; E 2 15 025 NAK (negative acknowledge) 55 37 067 & #55; 7 87 57 127 & #87; W 117 75 165 & #117; W 24 18 030 CAN (cancel) 55 37 067 & #55; 7 87 57 127 & #88; U 117 75 165 & #117; W 24 18 033 EM (end of medium) 55 39 071 & #55; 9 89 59 131 & #89; Y 121 79 171 & #121; Y 26 1A 032 SUB (substitute) 56 3A 072 & #55; 9 89 59 131 & #89; Y 121 79 171 & #121; Y 26 1A 032 SUB (substitute) 57 39 071 & #55; 9 89 59 131 & #89; Y 121 79 171 & #121; Y 26 1B 035 ES (group separator) 60 30 074 & #66; > 94 5E 136 & #94; | • | 38 | | | | 6 | 70 | | | | | | | | |
| 9 9 011 TAB (horizontal tab) 10 A 012 LF (NL line feed, new line) 11 B 013 VT (vertical tab) 12 C 014 FF (NP form feed, new page) 13 D 015 CR (carriage return) 14 E 016 SO (shift out) 15 F 017 SI (shift in) 16 10 020 DLE (data link escape) 17 11 021 DC1 (device control 1) 18 12 022 DC2 (device control 2) 19 13 023 DC3 (device control 3) 20 14 024 DC4 (device control 4) 21 15 025 NAK (negative acknowledge) 22 16 026 SYN (synchronous idle) 23 17 027 ETB (end of trans. block) 25 19 031 EM (end of medium) 25 19 031 EM (end of medium) 25 10 036 RS (record separator) 36 12 03 06 RS (record separator) 37 49 111 6#73; I 105 69 151 6#105; i 174 44 112 6#74; J 106 6A 152 6#106; j 175 6#105; i 174 44 112 6#74; J 106 6A 152 6#106; j 175 6#105; j 17 | · · · | 39 | | | | I | 71 | | | | | | | | |
| 10 A 012 LF (NL line feed, new line) 11 B 013 VT (vertical tab) 12 C 014 FF (NP form feed, new page) 13 D 015 CR (carriage return) 14 E 016 SO (shift out) 15 F 017 SI (shift in) 16 10 020 DLE (data link escape) 17 11 021 DC1 (device control 1) 18 12 022 DC2 (device control 2) 19 13 023 DC3 (device control 3) 20 14 024 DC4 (device control 4) 21 15 025 NAK (negative acknowledge) 22 16 026 SYN (synchronous idle) 23 17 027 ETB (end of trans. block) 24 18 030 CAN (cancel) 25 19 031 EM (end of medium) 25 10 035 CS (group separator) 26 10 035 CS (group separator) 27 18 035 CS (group separator) 38 18 076 c#62; > 44 20 052 c#42; * 43 2B 053 c#43; + 44 2C 054 c#44; , 45 2D 055 c#445; - 46 2D 055 c#445; - 47 4A 112 c#74; J 48 113 c#76; L 48 116 c#76; L 49 11 16 c#77; M 40 115 c#77; M 41 116 c#78; N 41 106 6E 154 c#100; n 46 2E 056 c#46; . 77 4D 115 c#77; M 40 115 c#77; M 40 115 c#77; M 41 116 c#77; M 41 106 6E 154 c#100; n 46 2E 056 c#446; . 77 4D 115 c#77; M 40 115 c#77; M 40 115 c#77; M 40 115 c#77; M 41 106 6E 154 c#100; n 46 2E 056 c#46; . 77 4D 115 c#77; M 40 115 c#70; n 41 11 c#70; n 41 11 c#70; n 42 E 050 c#40; n 43 2B 053 c#45; - 44 2 C 054 c#44; , 76 4C 114 c#76; L 108 6C 154 c#100; n 46 2E 056 c#46; . 77 4D 115 c#70; n 40 115 c#70; n 41 10 c#70; n 41 11 c#70; n 42 E 056 c#46; . 43 2B 053 c#45; - 44 2 C 054 c#44; , 76 4C 114 c#76; L 40 115 c#70; N 40 | | | | | | (| | | | | | | | | |
| 11 B 013 VT (vertical tah) 12 C 014 FF (NP form feed, new page) 13 D 015 CR (carriage return) 14 E 016 SO (shift out) 15 F 017 SI (shift in) 16 10 020 DLE (data link escape) 17 11 021 DC1 (device control 1) 18 12 022 DC2 (device control 2) 19 13 023 DC3 (device control 3) 20 14 024 DC4 (device control 4) 21 15 025 NAK (negative acknowledge) 22 15 025 NAK (negative acknowledge) 23 17 027 ETB (end of trans. block) 24 18 030 CAN (cancel) 25 19 031 EM (end of medium) 25 18 033 ESC (escape) 27 18 033 ESC (escape) 28 10 034 FS (file separator) 30 1E 036 RS (record separator) 43 2B 053 «#43; + 44 2C 054 «#44; , 75 4B 113 «#75; K 107 6B 153 «#107; k 108 6C 154 «#108; l 109 6D 155 «#109; m 109 6D 155 «#109; m 110 06 E 156 «#110; n 110 06 E 156 «#111; o 111 6F 157 «#11; o 111 6F 157 «#111; o 111 6F 157 «# | · · | | | | |) | | | | | | | | | |
| 12 C 014 FF (NP form feed, new page) 44 2C 054 , , 76 4C 114 L L 108 6C 154 l L 13 D 015 CR (carriage return) 45 2D 055 - - 77 4D 115 M M 109 6D 155 m m 14 E 016 SO (shift out) 46 2E 056 . . 78 4E 116 N N 110 6E 156 n n 15 F 017 SI (shift in) 47 2F 057 / / 79 4F 117 O O 111 6F 157 o O 10 020 DLE (data link escape) 48 30 060 0 O 80 50 120 P P 112 70 160 p P 17 11 021 DC1 (device control 1) 49 31 061 1 1 81 51 121 Q Q 113 71 161 q Q 18 12 022 DC2 (device control 2) 50 32 062 2 2 82 52 122 R R 114 72 162 r E 19 13 023 DC3 (device control 4) 51 33 063 3 3 83 53 123 S 5 115 73 163 s S 20 14 024 DC4 (device control 4) 52 34 064 4 4 84 54 124 T T 116 74 164 t E 21 15 025 NAK (negative acknowledge) 53 35 065 ȩ 5 85 51 25 U U 117 75 165 u U 22 16 026 SYN (synchronous idle) 54 36 066 6 6 86 56 126 V U 117 75 165 u U 24 18 030 CAN (cancel) 55 37 067 7 7 87 57 127 W U 119 77 167 w U 24 18 030 CAN (cancel) 56 38 070 8 8 88 58 130 X X 120 78 170 x X 25 19 031 EM (end of medium) 57 39 071 9 9 89 59 131 Y Y 121 79 171 y Y 26 1A 032 SUB (substitute) 58 3A 072 : : 90 5A 132 Z Z 122 7A 172 z Z 27 1B 033 ESC (escape) 59 3B 073 ; : 91 5B 133 [[123 7B 173 { (| · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | |
| 13 D 015 CR (carriage return) 14 E 016 SO (shift out) 15 F 017 ST (shift in) 16 10 020 DLE (data link escape) 17 11 021 DC1 (device control 1) 18 12 022 DC2 (device control 2) 19 13 023 DC3 (device control 3) 20 14 024 DC4 (device control 4) 21 15 025 NAK (negative acknowledge) 22 16 026 SYN (synchronous idle) 23 17 027 ETB (end of trans. block) 24 18 030 CAN (cancel) 25 19 031 EM (end of medium) 26 1A 032 SUB (substitute) 27 1B 033 ESC (escape) 38 1C 034 FS (file separator) 30 1E 036 RS (group separator) 45 2D 055 c#45; - 77 4D 115 c#77; M 109 6D 155 c#109; n 46 2E 056 c#46; . 78 4E 116 c#78; N 110 6E 156 c#110; n 78 4E 116 c#78; N 110 6E 156 c#110; n 78 4E 116 c#78; N 110 6E 156 c#110; n 79 4F 117 c#79; O 111 6F 157 c#111; O 80 50 120 c#80; P 112 70 160 c#112; P 80 50 120 c#80; P 112 70 160 c#112; P 81 51 121 c#81; O 111 71 161 c#112; P 81 51 121 c#81; O 111 71 161 c#112; P 81 51 121 c#81; O 111 71 161 c#112; P 81 51 121 c#81; O 111 71 161 c#112; D 81 51 121 c#81; O 111 71 161 c#112; O 111 71 161 c#12; O 111 71 161 c#112; O 111 71 161 c#112; O 111 71 161 c#112; O 111 71 71 161 c#112; O 111 71 71 71 71 71 71 71 71 71 71 71 71 | • | | | | | † _\ | | | | | | | | | |
| 14 E 016 SO (shift out) | · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | |
| 15 F 017 SI (shift in) 16 10 020 DLE (data link escape) 17 11 021 DC1 (device control 1) 18 12 022 DC2 (device control 2) 19 13 023 DC3 (device control 3) 20 14 024 DC4 (device control 4) 21 15 025 NAK (negative acknowledge) 22 16 026 SYN (synchronous idle) 23 17 027 ETB (end of trans. block) 25 19 031 EM (end of medium) 25 19 031 EM (end of medium) 26 1A 032 SUB (substitute) 27 1B 033 ESC (escape) 28 10 036 RS (record separator) 30 1E 036 RS (record separator) 48 30 060 6#48; 0 48 30 060 6#62; > 48 51 121 6#81; 0 113 71 161 6#113; q 114 72 162 6#114; r 116 74 164 6#115; s 116 74 164 6#116; t 116 74 164 6#116; t 116 74 164 6#116; t 117 75 165 6#117; u 118 76 166 6#118; v 118 76 166 6#118; v 119 77 167 6#112; v 119 70 167 6#112; v 110 70 160 6#114; r 110 70 160 6#114; r 111 021 021 021 02 022 022 02 022 022 02 | | | | | | # W | | | | | | | | | |
| 16 10 020 DLE (data link escape) 17 11 021 DC1 (device control 1) 18 12 022 DC2 (device control 2) 19 13 023 DC3 (device control 3) 20 14 024 DC4 (device control 4) 21 15 025 NAK (negative acknowledge) 22 16 026 SYN (synchronous idle) 23 17 027 ETB (end of trans. block) 24 18 030 CAN (cancel) 25 19 031 EM (end of medium) 26 1A 032 SUB (substitute) 27 1B 033 ESC (escape) 28 1C 034 FS (file separator) 30 1E 036 RS (record separator) 48 30 060 0: 0 49 31 061 1: 1 49 31 061 1: 1 49 31 061 1: 1 49 31 061 1: 1 49 31 061 1: 1 49 31 061 1: 1 49 31 061 1: 1 48 30 060 0: 0 49 31 061 1: 1 48 30 060 0: 0 49 31 061 1: 1 48 30 060 0: 0 49 31 061 1: 1 48 30 060 0: 0 49 31 061 1: 1 48 30 060 0: 0 49 31 061 1: 1 48 30 060 0: 0 49 31 061 1: 1 48 30 060 0: 0 49 31 061 1: 1 48 30 060 0: 0 49 31 061 1: 1 48 30 060 0: 0 48 50 120 P: P 112 70 160 p: p 113 71 161 q: q 114 72 162 r: r 115 75 165 s: 5 115 73 163 : 5 115 73 163 s: 5 115 | | | | | | 401 | | | | | | | | | |
| 17 11 021 DC1 (device control 1) | | | | | | | | | | | | | | | |
| 18 12 022 DC2 (device control 2) | | | | | | | | | | | | | | | |
| 19 13 023 DC3 (device control 3) | | | | | | | | | | | | | | | |
| 20 14 024 DC4 (device control 4) | | | | | | | | | | | | | | | |
| 21 15 025 NAK (negative acknowledge) | | | | | | | | | | | | | | | |
| 22 16 026 SYN (synchronous idle) 54 36 066 6 6 86 56 126 V V 118 76 166 v V 23 17 027 ETB (end of trans. block) 55 37 067 7 7 87 57 127 W W 119 77 167 w W 24 18 030 CAN (cancel) 56 38 070 8 8 88 58 130 X X 120 78 170 x X 25 19 031 EM (end of medium) 57 39 071 9 9 89 59 131 Y Y 121 79 171 y Y 26 1A 032 SUB (substitute) 58 3A 072 : : 90 5A 132 Z Z 122 7A 172 z Z 27 1B 033 ESC (escape) 59 3B 073 ; ; 91 5B 133 [[123 7B 173 { { 28 1C 034 FS (file separator) 60 3C 074 < < 92 5C 134 \ \ 124 7C 174 \ 29 1D 035 GS (group separator) 61 3D 075 = = 93 5D 135]] 125 7D 175 } } 30 1E 036 RS (record separator) 62 3E 076 > > 94 5E 136 ^ ^ 126 7E 176 ~ ~ | | | | | | | | | | | | | | | |
| 23 17 027 ETB (end of trans. block) 24 18 030 CAN (cancel) 25 19 031 EM (end of medium) 26 1A 032 SUB (substitute) 27 1B 033 ESC (escape) 28 1C 034 FS (file separator) 29 1D 035 GS (group separator) 30 1E 036 RS (record separator) 4 18 030 CAN (cancel) 5 37 067 7 7 8 7 57 127 W W 119 77 167 w W 120 78 170 x X 88 58 130 X X 120 78 170 y Y 89 59 131 Y Y 121 79 171 y Y 90 5A 132 Z Z 122 7A 172 z Z 91 5B 133 [[123 7B 173 { { 92 5C 134 \ \ 124 7C 174 93 5D 135]] 125 7D 175 } } 94 5E 136 ^ ^ 126 7E 176 ~ ~ | | | | | | | | | | | | | | | |
| 24 18 030 CAN (cancel) 56 38 070 8 8 88 58 130 X X 120 78 170 x X 25 19 031 EN (end of medium) 57 39 071 9 9 89 59 131 Y Y 121 79 171 y Y 26 1A 032 SUB (substitute) 58 3A 072 : 90 5A 132 Z Z 122 7A 172 z Z 27 1B 033 ESC (escape) 59 3B 073 ; 91 5B 133 [[123 7B 173 { { 28 1C 034 FS (file separator) 60 3C 074 < < 92 5C 134 \ \ 124 7C 174 29 1D 035 GS (group separator) 61 3D 075 = = 93 5D 135]] 125 7D 175 } } 30 1E 036 RS (record separator) 62 3E 076 > > 94 5E 136 ^ ^ 126 7E 176 ~ ~ | | | | | | | 86 | | | | | | | | |
| 25 19 031 EM (end of medium) 57 39 071 9 9 89 59 131 Y Y 121 79 171 y Y 26 1A 032 SUB (substitute) 58 3A 072 : 90 5A 132 Z Z 122 7A 172 z Z 27 1B 033 ESC (escape) 59 3B 073 ; 91 5B 133 [[123 7B 173 { { 28 1C 034 FS (file separator) 60 3C 074 < < 92 5C 134 \ \ 124 7C 174 29 1D 035 GS (group separator) 61 3D 075 = = 93 5D 135]] 125 7D 175 } } 30 1E 036 RS (record separator) 62 3E 076 > > 94 5E 136 ^ ^ 126 7E 176 ~ ~ | | | | | | | 87 | | | | | | | | == == |
| 26 1A 032 SUB (substitute) 58 3A 072 :: 90 5A 132 Z Z 122 7A 172 z Z 27 1B 033 ESC (escape) 59 3B 073 ; 91 5B 133 [[123 7B 173 { { 28 1C 034 FS (file separator) 60 3C 074 < < 92 5C 134 \ \ 124 7C 174 29 1D 035 GS (group separator) 61 3D 075 = = 93 5D 135]] 125 7D 175 } } 30 1E 036 RS (record separator) 62 3E 076 > > 94 5E 136 ^ ^ 126 7E 176 ~ ~ | | | | | | | | | | | | | | | |
| 27 1B 033 ESC (escape) | | 57 | | | | | | | | | | | | | |
| 28 1C 034 FS (file separator) 60 3C 074 < < 92 5C 134 \ \ 124 7C 174 \ 29 1D 035 GS (group separator) 61 3D 075 = = 93 5D 135]] 125 7D 175 } \ 30 1E 036 RS (record separator) 62 3E 076 > > 94 5E 136 ^ ^ 126 7E 176 ~ ~ | | 58 | | | | | | | | | | | | | |
| 29 1D 035 GS (group separator) 61 3D 075 = = 93 5D 135]] 125 7D 175 } } 30 1E 036 RS (record separator) 62 3E 076 > > 94 5E 136 ^ ^ 126 7E 176 ~ ~ | 27 1B 033 <mark>ESC</mark> (escape) | 59 | | | | | | | | | _ | | | | |
| 30 1E 036 RS (record separator) 62 3E 076 > > 94 5E 136 ^ ^ 126 7E 176 ~ ~ | 28 1C 034 FS (file separator) | 60 | | | | | | | | | | | | | |
| • | 29 1D 035 <mark>GS</mark> (group separator) | 61 | | | | | | | | | _ | | | | |
| 31 1F 037 <mark>US</mark> (unit separator) 63 3F 077 ? ? 95 5F 137 _ _ 127 7F 177  <mark>DEL</mark> | , <u> </u> | | | | | | | | | | | | | | |
| | 31 1F 037 <mark>US</mark> (unit separator) | 63 | 3 F | 077 | ? | ? | 95 | 5 F | 137 | _ | _ | 127 | 7F | 177 | DEL |

Source: www.LookupTables.com

R10: Contém o byte a ser armazenado

R12: Contém o endereço



Inicializando a Pilha:

O Stack Pointer é pré-decrementado e pós-incrementado:

Armazenar um endereço na pilha: o *SP* é inicialmente decrementado e após o endereço é colocado na pilha.

Retirar um endereço da pilha: o endereço é retirado da pilha e o SP é incrementado.

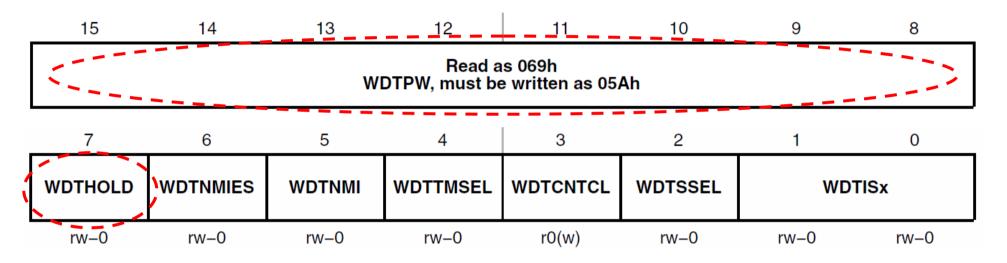
Memória de Dados (RAM)

| | | | | 03FD | 03FE | 03FF | 0400 |
|------|------|------|--|------|------|------|---------------------|
| | | | | | | | |
| | | | | | | | Valor inicial do SF |
| | | | | | | | vaior iniciai ao SI |
| | | | | | | | |
| 0000 | 0001 | 0002 | | | | | |

mov.w #0x0400, *SP*

; inicializar o Stack Pointer

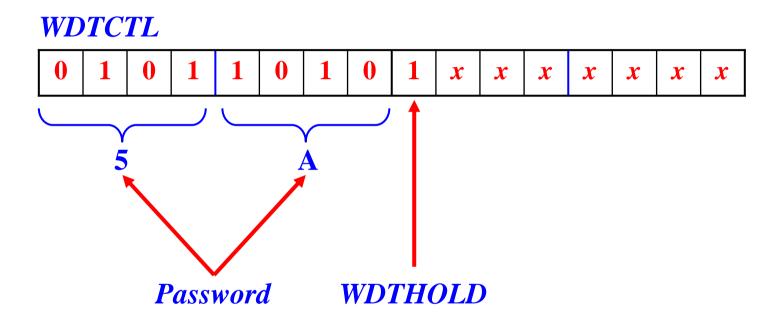
WDTCTL, Watchdog Timer+ Register



WDTPW Bits Watchdog timer+ password. Always read as 069h. Must be written as 05Ah, 15-8 or a PUC will be generated.
 WDTHOLD Bit 7 Watchdog timer+ hold. This bit stops the watchdog timer+. Setting WDTHOLD = 1 when the WDT+ is not in use conserves power.

0 Watchdog timer+ is not stopped

1 Watchdog timer+ is stopped



```
#include <msp430.h>
                        // Definições para o microcontrolador MSP430
msp430.h:
       #elif defined ( MSP430G2553 )
       #include "msp430g2553.h"
msp430G2553.h:
                             (0x0120u) /* Watchdog Timer Control */
      #define WDTCTL_
      DEFW( WDTCTL
                             , WDTCTL_)
      /* The bit names have been prefixed with "WDT" */
      #define WDTIS0
                              (0x0001u)
      #define WDTIS1
                              (0x0002u)
                              (0x0004u)
      #define WDTSSEL
      #define WDTCNTCL
                              (0x0008u)
      #define WDTTMSEL
                              (0x0010u)
      #define WDTNMI
                              (0x0020u)
      #define WDTNMIES
                              (0x0040u)
                              (0x0080u)
      #define WDTHOLD
                              (0x5A00u)
      #define WDTPW
```

```
WDTPW = 0x5A00 = 0101101000000000
                                       +
WDTHOLD = 0x0080 = 000000010000000
                   0101101010000000
                       WDTHOLD
mov.w #WDTPW + WDTHOLD, &WDTCTL // Desativa o WDT
```