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1. **Pengertian Kode ASCII**

ASCII (*American Standard Code for Information Interchange*) merupakan Kode Standar Amerika untuk pertukaran Informasi atau sebuah standar internasional dalam pengkodean huruf dan simbol seperti Unicode dan Hex tetapi ASCII lebih bersifat universal.

1. **Tabel Kode ASCII**

|  |  |  |  |
| --- | --- | --- | --- |
| **Nilai ANSI ASCII**  **(Desimal)** | **Nilai Unicode (Heksa**  **Desimal)** | **Biner** | **Karakter** |
| **0** | 00 | 00000000 | NUL |
| **1** | 01 | 00000001 | SOH |
| **2** | 02 | 00000010 | STX |
| **3** | 03 | 00000011 | ETX |
| **4** | 04 | 00000100 | EOT |
| **5** | 05 | 00000101 | ENQ |
| **6** | 06 | 00000110 | ACK |
| **7** | 07 | 00000111 | BEL |
| **8** | 08 | 00001000 | BS |
| **9** | 09 | 00001001 | HT |
| **10** | 0A | 00001010 | LF |
| **11** | 0B | 00001011 | VT |
| **12** | 0C | 00001100 | FF |
| **13** | 0D | 00001101 | CR |
| **14** | 0E | 00001110 | SO |
| **15** | 0F | 00001111 | SI |
| **16** | 10 | 00010000 | DLE |
| **17** | 11 | 00010001 | DC1 |

|  |  |  |  |
| --- | --- | --- | --- |
| **18** | 12 | 00010010 | DC2 |
| **19** | 13 | 00010011 | DC3 |
| **20** | 14 | 00010100 | DC4 |
| **21** | 15 | 00010101 | NAK |
| **22** | 16 | 00010110 | SYN |
| **23** | 17 | 00010111 | ETB |
| **24** | 18 | 00011000 | CAN |
| **25** | 19 | 00011001 | EM |
| **26** | 1A | 00011010 | SUB |
| **27** | 1B | 00011011 | ESC |
| **28** | 1C | 00011100 | FS |
| **29** | 1D | 00011101 | GS |
| **30** | 1E | 00011110 | RS |
| **31** | 1F | 00011111 | US |
| **32** | 20 | 00100000 | space |
| **33** | 21 | 00100001 | ! |
| **34** | 22 | 00100010 | " |
| **35** | 23 | 00100011 | # |
| **36** | 24 | 00100100 | $ |
| **37** | 25 | 00100101 | % |
| **38** | 26 | 00100110 | & |
| **39** | 27 | 00100111 | ' |
| **40** | 28 | 00101000 | ( |
| **41** | 29 | 00101001 | ) |
| **42** | 2A | 00101010 | \* |
| **43** | 2B | 00101011 | + |
| **44** | 2C | 00101100 | , |
| **45** | 2D | 00101101 | - |
| **46** | 2E | 00101110 | . |
| **47** | 2F | 00101111 | / |

|  |  |  |  |
| --- | --- | --- | --- |
| **48** | 30 | 00110000 | 0 |
| **49** | 31 | 00110001 | 1 |
| **50** | 32 | 00110010 | 2 |
| **51** | 33 | 00110011 | 3 |
| **52** | 34 | 00110100 | 4 |
| **53** | 35 | 00110101 | 5 |
| **54** | 36 | 00110110 | 6 |
| **55** | 37 | 00110111 | 7 |
| **56** | 38 | 00111000 | 8 |
| **57** | 39 | 00111001 | 9 |
| **58** | 3A | 00111010 | : |
| **59** | 3B | 00111011 | ; |
| **60** | 3C | 00111100 | < |
| **61** | 3D | 00111101 | = |
| **62** | 3E | 00111110 | > |
| **63** | 3F | 00111111 | ? |
| **64** | 40 | 01000000 | @ |
| **65** | 41 | 01000001 | A |
| **66** | 42 | 01000010 | B |
| **67** | 43 | 01000011 | C |
| **68** | 44 | 01000100 | D |
| **69** | 45 | 01000101 | E |
| **70** | 46 | 01000110 | F |
| **71** | 47 | 01000111 | G |
| **72** | 48 | 01001000 | H |
| **73** | 49 | 01001001 | I |
| **74** | 4A | 01001010 | J |
| **75** | 4B | 01001011 | K |
| **76** | 4C | 01001100 | L |
| **77** | 4D | 01001101 | M |

|  |  |  |  |
| --- | --- | --- | --- |
| **78** | 4E | 01001110 | N |
| **79** | 4F | 01001111 | O |
| **80** | 50 | 01010000 | P |
| **81** | 51 | 01010001 | Q |
| **82** | 52 | 01010010 | R |
| **83** | 53 | 01010011 | S |
| **84** | 54 | 01010100 | T |
| **85** | 55 | 01010101 | U |
| **86** | 56 | 01010110 | V |
| **87** | 57 | 01010111 | W |
| **88** | 58 | 01011000 | X |
| **89** | 59 | 01011001 | Y |
| **90** | 5A | 01011010 | Z |
| **91** | 5B | 01011011 | [ |
| **92** | 5C | 01011100 | \ |
| **93** | 5D | 01011101 | ] |
| **94** | 5E | 01011110 | ^ |
| **95** | 5F | 01011111 | \_ |
| **96** | 60 | 01100000 | ` |
| **97** | 61 | 01100001 | a |
| **98** | 62 | 01100010 | b |
| **99** | 63 | 01100011 | c |
| **100** | 64 | 01100100 | d |
| **101** | 65 | 01100101 | e |
| **102** | 66 | 01100110 | f |
| **103** | 67 | 01100111 | g |
| **104** | 68 | 01101000 | h |
| **105** | 69 | 01101001 | i |
| **106** | 6A | 01101010 | j |
| **107** | 6B | 01101011 | k |

|  |  |  |  |
| --- | --- | --- | --- |
| **108** | 6C | 01101100 | l |
| **109** | 6D | 01101101 | m |
| **110** | 6E | 01101110 | n |
| **111** | 6F | 01101111 | o |
| **112** | 70 | 01110000 | p |
| **113** | 71 | 01110001 | q |
| **114** | 72 | 01110010 | r |
| **115** | 73 | 01110011 | s |
| **116** | 74 | 01110100 | t |
| **117** | 75 | 01110101 | u |
| **118** | 76 | 01110110 | v |
| **119** | 77 | 01110111 | w |

1. **Daftar Perintah Bahasa Assembly:**

|  |  |
| --- | --- |
| **Instruksi** | **Keterangan Singkatan** |
| **ACALL** | **Absolute Call** |
| **ADD** | **Add** |
| **ADDC** | **Add with Carry** |
| **AJMP** | **Absolute Jump** |
| **ANL** | **AND Logic** |
| **CJNE** | **Compare and Jump if Not Equal** |
| **CLR** | **Clear** |
| **CPL** | **Complement** |
| **DA** | **Decimal Adjust** |
| **DEC** | **Decrement** |
| **DIV** | **Divide** |
| **DJNZ** | **Decrement and Jump if Not Zero** |
| **INC** | **Increment** |
| **JB** | **Jump if Bit Set** |
| **JBC** | **Jump if Bit Set and Clear Bit** |
| **JC** | **Jump if Carry Set** |
| **JMP** | **Jump to Address** |

|  |  |
| --- | --- |
| **JNB** | **Jump if Not Bit Set** |
| **JNC** | **Jump if Carry Not Set** |
| **JNZ** | **Jump if Accumulator Not Zero** |
| **JZ** | **Jump if Accumulator Zero** |
| **LCALL** | **Long Call** |
| **LJMP** | **Long Jump** |
| **MOV** | **Move from Memory** |
| **MOVC** | **Move from Code Memory** |
| **MOVX** | **Move from Extended Memory** |
| **MUL** | **Multiply** |
| **NOP** | **No Operation** |
| **ORL** | **OR Logic** |
| **POP** | **Pop Value From Stack** |
| **PUSH** | **Push Value Onto Stack** |
| **RET** | **Return From Subroutine** |
| **RETI** | **Return From Interrupt** |
| **RL** | **Rotate Left** |
| **RLC** | **Rotate Left through Carry** |
| **RR** | **Rotate Right** |
| **RRC** | **Rotate Right through Carry** |
| **SETB** | **Set Bit** |
| **SJMP** | **Short Jump** |
| **SUBB** | **Subtract With Borrow** |
| **SWAP** | **Swap Nibbles** |
| **XCH** | **Exchange Bytes** |
| **XCHD** | **Exchange Digits** |
| **XRL** | **Exclusive OR Logic** |