.486  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |.486 | 4 |directive |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
Data1 segment use16  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |data1 | 5 |data segment |  
| 2 |segment | 7 |segment directive |  
| 3 |use16 | 5 |segment encoding |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 3 | 1 |  
=========================================================================================  
  
String db 'String'  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |string | 6 |user identifier |  
| 2 |db | 2 |type byte |  
| 3 |'string' | 8 |string |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 2 | 1 | 3 | 1 | 0 | 0 |  
=========================================================================================  
  
Val db 101b  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |val | 3 |user identifier |  
| 2 |db | 2 |type byte |  
| 3 |101b | 4 |binary |  
=========================================================================================  
| Label | Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 2 | 1 | 3 | 1 | 0 | 0 |  
=========================================================================================  
  
Vw dw 1234d  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |vw | 2 |user identifier |  
| 2 |dw | 2 |type 2 bytes |  
| 3 |1234d | 5 |decimal |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 2 | 1 | 3 | 1 | 0 | 0 |  
=========================================================================================  
  
Vd dd 0d7856fdah  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |vd | 2 |user identifier |  
| 2 |dd | 2 |type 4 bytes |  
| 3 |0d7856fdah | 10 |hexadecimal |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 2 | 1 | 3 | 1 | 0 | 0 |  
=========================================================================================

Data1 ends  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |data1 | 5 |data segment |  
| 2 |ends | 4 |end of segment |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 0 | 0 |  
=========================================================================================  
  
Data2 segment use16  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |data2 | 5 |data segment |   
| 2 |segment | 7 |segment directive |  
| 3 |use16 | 5 |segment encoding |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 3 | 1 |  
=========================================================================================  
  
Var dw 123  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |var | 3 |user identifier |  
| 2 |dw | 2 |type 2 bytes |  
| 3 |123 | 3 |decimal |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 2 | 1 | 3 | 1 | 0 | 0 |  
=========================================================================================  
  
QWERTY dd 67ff89h  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |qwerty | 6 |user identifier |  
| 2 |dd | 2 |type 4 bytes |  
| 3 |67ff89h | 7 |hexadecimal |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 2 | 1 | 3 | 1 | 0 | 0 |  
=========================================================================================  
  
Zxcv db 89h  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |zxcv | 4 |user identifier |  
| 2 |db | 2 |type byte |  
| 3 |89h | 3 |hexadecimal |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 2 | 1 | 3 | 1 | 0 | 0 |  
=========================================================================================  
  
Data2 ends  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |data2 | 5 |data segment |  
| 2 |ends | 4 |end of segment |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 0 | 0 |  
=========================================================================================  
  
Code1 segment use16  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |code1 | 5 |code segment |  
| 2 |segment | 7 |segment directive |  
| 3 |use16 | 5 |segment encoding |  
=========================================================================================  
| Label | Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 3 | 1 |  
=========================================================================================  
  
Assume cs : Code1 , ds : Data1 , gs : Data2  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |assume | 6 |assume |  
| 2 |cs | 2 |segment register |  
| 3 |: | 1 |character |  
| 4 |code1 | 5 |code segment |  
| 5 |, | 1 |character |  
| 6 |ds | 2 |segment register |  
| 7 |: | 1 |character |  
| 8 |data1 | 5 |data segment |  
| 9 |, | 1 |character |  
| 10 |gs | 2 |segment register |  
| 11 |: | 1 |character |  
| 12 |data2 | 5 |data segment |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
begin :  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |begin | 5 |user identifier |  
| 2 |: | 1 |character |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 0 | 0 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
nop  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |nop | 3 |instruction |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
nop  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |nop | 3 |instruction |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 0 | 0 | 0 | 0 |  
=========================================================================================

nop  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |nop | 3 |instruction |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
imul bl  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |imul | 4 |instruction |  
| 2 |bl | 2 |8-bit register |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 0 | 0 |  
=========================================================================================  
  
mul byte ptr gs : [ ebx + ecx ]  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |mul | 3 |instruction |  
| 2 |byte | 4 |identifier type byte |  
| 3 |ptr | 3 |identifier type definition |  
| 4 |gs | 2 |segment register |  
| 5 |: | 1 |character |  
| 6 |[ | 1 |character |  
| 7 |ebx | 3 |32-bit address register |  
| 8 |+ | 1 |character |  
| 9 |ecx | 3 |32-bit address register |  
| 10 |] | 1 |character |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 9 | 0 | 0 |  
=========================================================================================  
  
idiv bl  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |idiv | 4 |instruction |  
| 2 |bl | 2 |8-bit register |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 0 | 0 |  
=========================================================================================  
  
or byte ptr ds : [ edx + esi ] , 111b  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |or | 2 |instruction |  
| 2 |byte | 4 |identifier type byte |  
| 3 |ptr | 3 |identifier type definition |  
| 4 |ds | 2 |segment register |  
| 5 |: | 1 |character |  
| 6 |[ | 1 |character |  
| 7 |edx | 3 |32-bit address register |  
| 8 |+ | 1 |character |  
| 9 |esi | 3 |general purpose registers |  
| 10 |] | 1 |character |  
| 11 |, | 1 |character |  
| 12 |111b | 4 |binary |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 9 | 12 | 1 |  
=========================================================================================  
  
sub dword ptr [ ebx + ecx ] , eax  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |sub | 3 |instruction |  
| 2 |dword | 5 |identifier type 4 bytes |  
| 3 |ptr | 3 |identifier type definition |  
| 4 |[ | 1 |character |  
| 5 |ebx | 3 |32-bit address register |  
| 6 |+ | 1 |character |  
| 7 |ecx | 3 |32-bit address register |  
| 8 |] | 1 |character |  
| 9 |, | 1 |character |  
| 10 |eax | 3 |32-bit data register |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 7 | 10 | 1 |  
=========================================================================================  
  
cmp eax , gs : QWERTY  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |cmp | 3 |instruction |  
| 2 |eax | 3 |32-bit data register |  
| 3 |, | 1 |character |  
| 4 |gs | 2 |segment register |  
| 5 |: | 1 |character |  
| 6 |qwerty | 6 |user identifier |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 1 | 1 | 2 | 1 | 0 | 0 |  
=========================================================================================  
  
Jmp short label1  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |jmp | 3 |instruction |  
| 2 |short | 5 |distance definition |  
| 3 |label1 | 6 |user identifier |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 1 | 1 | 2 | 1 | 0 | 0 |  
=========================================================================================  
  
label1 :  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |label1 | 6 |user identifier |  
| 2 |: | 1 |character |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 0 | 0 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
cmp al , String  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |cmp | 3 |instruction |  
| 2 |al | 2 |8-bit register |  
| 3 |, | 1 |character |  
| 4 |string | 6 |user identifier |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 1 | 1 | 2 | 1 | 0 | 0 |  
=========================================================================================

jnb short label2  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |jnb | 3 |instruction |  
| 2 |short | 5 |distance definition |  
| 3 |label2 | 6 |user identifier |  
=========================================================================================  
| Label | Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 1 | 1 | 2 | 1 | 0 | 0 |  
=========================================================================================  
  
adc al , byte ptr [ edx + esi ]  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |adc | 3 |instruction |  
| 2 |al | 2 |8-bit register |  
| 3 |, | 1 |character |  
| 4 |byte | 4 |identifier type byte |  
| 5 |ptr | 3 |identifier type definition |  
| 6 |[ | 1 |character |  
| 7 |edx | 3 |32-bit address register |  
| 8 |+ | 1 |character |  
| 9 |esi | 3 |general purpose registers |  
| 10 |] | 1 |character |  
=========================================================================================  
|Label| Mnemonic code | Operand 1| Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 4 | 7 |  
=========================================================================================  
  
jmp label1  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |jmp | 3 |instruction |  
| 2 |label1 | 6 |user identifier |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 1 | 1 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
label2 :  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |label2 | 6 |user identifier |  
| 2 |: | 1 |character |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 0 | 0 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
cmp al , bl  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |cmp | 3 |instruction |  
| 2 |al | 2 |8-bit register |  
| 3 |, | 1 |character |  
| 4 |bl | 2 |8-bit register |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 4 | 1 |  
=========================================================================================

jnb label2  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |jnb | 3 |instruction |  
| 2 |label2 | 6 |user identifier |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 1 | 1 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
nop  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |nop | 3 |instruction |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
nop  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |nop | 3 |instruction |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 0 | 0 | 0 | 0 |  
=========================================================================================  
  
Code1 ends  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |code1 | 5 |code segment |  
| 2 |ends | 4 |end of segment |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 0 | 1 | 1 | 2 | 1 | 0 | 0 |  
=========================================================================================  
  
end begin  
=========================================================================================  
| No | Lexeme | Length | Type |  
=========================================================================================  
| 1 |end | 3 |end directive |  
| 2 |begin | 5 |user identifier |  
=========================================================================================  
|Label| Mnemonic code | Operand 1 | Operand 2 |  
=========================================================================================  
| 1 | 1 | 1 | 0 | 0 | 0 | 0 |  
=========================================================================================