

C:\CPEN3710\VS2015Template\lottery.lst

Microsoft (R) Macro Assembler Version 14.00.24210.0
lottery (lottery.asm)

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```
title lottery (lottery.asm)

; Name: Brandon Hough
; CPEN 3710-0
; Date: November 14, 2018

; This program will simulate a drawing of the Mega Millions lottery.
; User will select 5 white balls (non-duplicates) and one yellow ball
; for a chance to win the jackpot

; import Irvine32 library
include Irvine32.inc
C ; Include file for Irvine32.lib          (Irvine32.inc)
C
C ;OPTION CASEMAP:NONE                ; optional: make identifiers case-sensitive
C
C INCLUDE SmallWin.inc                ; MS-Windows prototypes, structures, and constants
C .NOLIST
C .LIST
C
C INCLUDE VirtualKeys.inc
C ; VirtualKeys.inc
C .NOLIST
C .LIST
C
C
C .NOLIST
C .LIST
C

; import Macros library
include Macros.inc
C .NOLIST
C .LIST
C

; macro that will create a random number, number is required
randomNumberGen macro number:req
    mov eax, number          ; get random 0 to number
    call RandomRange
    inc eax
endm

; macro when a duplicate number is entered
duplicateNumber macro
    mWriteString OFFSET message8          ; prints 'You can not enter duplicates!'
    call crlf                             ; character return
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                                endm

00000000                                .data

                                ; structure of users numbers
00000018                                usersBalls struct
00000000 00000000                                whiteBall1 DWORD ?      ; stores first white ball number
00000004 00000000                                whiteBall2 DWORD ?      ; stores second white ball number
00000008 00000000                                whiteBall3 DWORD ?      ; stores third white ball number
0000000C 00000000                                whiteBall4 DWORD ?      ; stores forth white ball numbera
00000010 00000000                                whiteBall5 DWORD ?      ; stores fifth white ball number
00000014 00000000                                yellowBall DWORD ?     ; stores yellow ball number
                                usersBalls ends

                                ; initializing user input structures
00000000 00000000                                userPicks usersBalls <>
                                00000000
                                00000000
                                00000000
                                00000000
                                00000000

                                ; structure of lottery winning numbers
00000018                                winningBalls struct
00000000 00000000                                whiteBall1 DWORD ?      ; stores first white ball number
00000004 00000000                                whiteBall2 DWORD ?      ; stores second white ball number
00000008 00000000                                whiteBall3 DWORD ?      ; stores third white ball number
0000000C 00000000                                whiteBall4 DWORD ?      ; stores forth white ball numbera
00000010 00000000                                whiteBall5 DWORD ?      ; stores fifth white ball number
00000014 00000000                                yellowBall DWORD ?     ; stores yellow ball number
                                winningBalls ends

                                ; initializing winnng lottery number structures
00000018 00000000                                winningPicks winningBalls <>
                                00000000
                                00000000
                                00000000
                                00000000
                                00000000

                                ; initilize each messaage printed to screen
00000030 4D 65 67 61 20                                message1 BYTE 'Mega Millions drawing results: ',0
                                4D 69 6C 6C 69
                                6F 6E 73 20 64
                                72 61 77 69 6E
                                67 20 72 65 73
                                75 6C 74 73 3A
                                20 00
00000050 57 68 69 74 65                                message2 BYTE 'White balls ',0
                                20 62 61 6C 6C
                                73 20 00

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0000005D 20 2E 2E 2E 20      message3 BYTE ' ... ',0
          00
00000063 59 65 6C 6C 6F      message4 BYTE 'Yellow ball ',0
          77 20 62 61 6C
          6C 20 00
00000070 59 6F 75 20 63      message8 BYTE 'You can not enter duplicates! Renter last ball choice!',0
          61 6E 20 6E 6F
          74 20 65 6E 74
          65 72 20 64 75
          70 6C 69 63 61
          74 65 73 21 20
          52 65 6E 74 65
          72 20 6C 61 73
          74 20 62 61 6C
          6C 20 63 68 6F
          69 63 65 21 00

; initilize each prompt printed to screen
000000A7 50 6C 65 61 73      prompt1 BYTE 'Please enter your first white number: ',0
          65 20 65 6E 74
          65 72 20 79 6F
          75 72 20 66 69
          72 73 74 20 77
          68 69 74 65 20
          6E 75 6D 62 65
          72 3A 20 00
000000CE 50 6C 65 61 73      prompt2 BYTE 'Please enter your second white number: ',0
          65 20 65 6E 74
          65 72 20 79 6F
          75 72 20 73 65
          63 6F 6E 64 20
          77 68 69 74 65
          20 6E 75 6D 62
          65 72 3A 20 00
000000F6 50 6C 65 61 73      prompt3 BYTE 'Please enter your third white number: ',0
          65 20 65 6E 74
          65 72 20 79 6F
          75 72 20 74 68
          69 72 64 20 77
          68 69 74 65 20
          6E 75 6D 62 65
          72 3A 20 00
0000011D 50 6C 65 61 73      prompt4 BYTE 'Please enter your forth white number: ',0
          65 20 65 6E 74
          65 72 20 79 6F
          75 72 20 66 6F
          72 74 68 20 77
          68 69 74 65 20
          6E 75 6D 62 65
          72 3A 20 00
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00000144 50 6C 65 61 73      prompt5 BYTE 'Please enter your fifth white number: ',0
          65 20 65 6E 74
          65 72 20 79 6F
          75 72 20 66 69
          66 74 68 20 77
          68 69 74 65 20
          6E 75 6D 62 65
          72 3A 20 00
0000016B 50 6C 65 61 73      prompt6 BYTE 'Please enter your yellow number: ',0
          65 20 65 6E 74
          65 72 20 79 6F
          75 72 20 79 65
          6C 6C 6F 77 20
          6E 75 6D 62 65
          72 3A 20 00

0000018D 00000000      matchedWhiteBalls DWORD 0          ; initial matched balls count of 0
00000191 00000000      yellowBallMatch DWORD 0          ; initial matched yellow ball found count of 0

00000000      .code
00000000      main proc
00000000      E8 00000000 E      call Randomize          ; re-seed generator with curr time

                                mWriteString OFFSET message1          ; print 'Mega Millions drawing results: ' to console
00000005      52          1      push edx
00000006      BA 00000030 R      1      mov edx,OFFSET OFFSET message1
0000000B      E8 00000000 E      1      call WriteString
00000010      5A          1      pop  edx

00000011      getRandomW1:
                                randomNumberGen 70          ; get a random number from 0 to 70
00000011      B8 00000046      1      mov eax, 70          ; get random 0 to number
00000016      E8 00000000 E      1      call RandomRange
0000001B      40          1      inc  eax
0000001C      A3 00000018 R      mov winningPicks.whiteBall1, eax      ; move random number into winning structure
00000021      E8 00000000 E      call WriteDec          ; write first random number to the
→ screen
                                mWriteSpace          ; insert a space
00000195      1      .data
00000195      00000001 [      1      ??0000 BYTE 1 DUP(' '),0
                                20
                                ] 00

00000026      1      .code
00000026      52          1      push  edx
00000027      BA 00000195 R      1      mov  edx,OFFSET ??0000
0000002C      E8 00000000 E      1      call  WriteString
00000031      5A          1      pop   edx

00000032      getRandomW2:
                                randomNumberGen 70          ; get a random number from 0 to 70
00000032      B8 00000046      1      mov eax, 70          ; get random 0 to number

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00000037 E8 00000000 E      1      call RandomRange
0000003C 40                      1      inc eax

0000003D 3B 05 00000018 R      cmp eax, winningPicks.whiteBall1    ; compare second winning number to first
00000043 74 ED                      je getRandomW2                      ; if they are equal get another second ball number

00000045 A3 0000001C R      mov winningPicks.whiteBall2, eax    ; move random number into winning structure
0000004A E8 00000000 E      call WriteDec                      ; write second random number to the
→ screen

                                mWriteSpace                      ; insert a space

00000197                      1 .data
00000197 00000001 [      1 ??0001 BYTE 1 DUP(' '),0
        20
        ] 00

0000004F                      1 .code
0000004F 52                      1      push    edx
00000050 BA 00000197 R      1      mov     edx,OFFSET ??0001
00000055 E8 00000000 E      1      call    WriteString
0000005A 5A                      1      pop     edx

0000005B                      getRandomW3:
                                randomNumberGen 70                ; get a random number from 0 to 70
0000005B B8 00000046      1      mov eax, 70                ; get random 0 to number
00000060 E8 00000000 E      1      call RandomRange
00000065 40                      1      inc eax

00000066 3B 05 00000018 R      cmp eax, winningPicks.whiteBall1    ; compare third winning number to first
0000006C 74 ED                      je getRandomW3                      ; if they are equal get another third ball number

0000006E 3B 05 0000001C R      cmp eax, winningPicks.whiteBall2    ; compare third winning number to second
00000074 74 E5                      je getRandomW3                      ; if they are equal get another third ball number

00000076 A3 00000020 R      mov winningPicks.whiteBall3, eax    ; move random number into winning structure
0000007B E8 00000000 E      call WriteDec                      ; write third random number to the
→ screen

                                mWriteSpace                      ; insert a space

00000199                      1 .data
00000199 00000001 [      1 ??0002 BYTE 1 DUP(' '),0
        20
        ] 00

00000080                      1 .code
00000080 52                      1      push    edx
00000081 BA 00000199 R      1      mov     edx,OFFSET ??0002
00000086 E8 00000000 E      1      call    WriteString
0000008B 5A                      1      pop     edx

0000008C                      getRandomW4:
                                randomNumberGen 70                ; get a random number from 0 to 70
0000008C B8 00000046      1      mov eax, 70                ; get random 0 to number
00000091 E8 00000000 E      1      call RandomRange
00000096 40                      1      inc eax

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00000097 3B 05 00000018 R      cmp eax, winningPicks.whiteBall1 ; compare forth winning number to first
0000009D 74 ED                  je getRandomW4                    ; if they are equal get another forth ball number

0000009F 3B 05 0000001C R      cmp eax, winningPicks.whiteBall2 ; compare forth winning number to second
000000A5 74 E5                  je getRandomW4                    ; if they are equal get another forth ball number

000000A7 3B 05 00000020 R      cmp eax, winningPicks.whiteBall3 ; compare forth winning number to third
000000AD 74 DD                  je getRandomW4                    ; if they are equal get another forth ball number

000000AF A3 00000024 R          mov winningPicks.whiteBall4, eax ; move random number into winning structure
000000B4 E8 00000000 E          call WriteDec                    ; write forth random number to the →
→ screen

                                mWriteSpace                                ; insert a space

0000019B                                1 .data
0000019B 00000001 [            1 ??0003 BYTE 1 DUP(' '),0
                                20
                                ] 00

000000B9                                1 .code
000000B9 52                        1      push    edx
000000BA BA 0000019B R          1      mov     edx,OFFSET ??0003
000000BF E8 00000000 E          1      call    WriteString
000000C4 5A                        1      pop     edx

000000C5                                getRandomW5:
                                randomNumberGen 70                        ; get a random number from 0 to 70
000000C5 B8 00000046            1      mov     eax, 70 ; get random 0 to number
000000CA E8 00000000 E          1      call    RandomRange
000000CF 40                        1      inc     eax

000000D0 3B 05 00000018 R      cmp eax, winningPicks.whiteBall1 ; compare fifth winning number to first
000000D6 74 ED                  je getRandomW5                    ; if they are equal get another fifth ball number

000000D8 3B 05 0000001C R      cmp eax, winningPicks.whiteBall2 ; compare fifth winning number to second
000000DE 74 E5                  je getRandomW5                    ; if they are equal get another fifth ball number

000000E0 3B 05 00000020 R      cmp eax, winningPicks.whiteBall3 ; compare fifth winning number to third
000000E6 74 DD                  je getRandomW5                    ; if they are equal get another fifth ball number

000000E8 3B 05 00000024 R      cmp eax, winningPicks.whiteBall4 ; compare fifth winning number to forth
000000EE 74 D5                  je getRandomW5                    ; if they are equal get another fifth ball number

000000F0 A3 00000028 R          mov winningPicks.whiteBall5, eax ; move random number into winning structure
000000F5 E8 00000000 E          call WriteDec                    ; write fifth random number to the →
→ screen

                                mWriteSpace                                ; insert a space

0000019D                                1 .data
0000019D 00000001 [            1 ??0004 BYTE 1 DUP(' '),0
                                20
                                ] 00

000000FA                                1 .code

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000000FA 52          1      push    edx
000000FB BA 0000019D R    1      mov     edx,OFFSET ??0004
00000100 E8 00000000 E    1      call    WriteString
00000105 5A          1      pop     edx

                                mWriteString OFFSET message2          ; print 'White balls ' to console
00000106 52          1      push    edx
00000107 BA 00000050 R    1      mov     edx,OFFSET OFFSET message2
0000010C E8 00000000 E    1      call    WriteString
00000111 5A          1      pop     edx
                                mWriteString OFFSET message3          ; print ' ... ' to console
00000112 52          1      push    edx
00000113 BA 0000005D R    1      mov     edx,OFFSET OFFSET message3
00000118 E8 00000000 E    1      call    WriteString
0000011D 5A          1      pop     edx
                                mWriteString OFFSET message4          ; print 'Yellow ball ' to console
0000011E 52          1      push    edx
0000011F BA 00000063 R    1      mov     edx,OFFSET OFFSET message4
00000124 E8 00000000 E    1      call    WriteString
00000129 5A          1      pop     edx

                                randomNumberGen 25                      ; get a random number from 0 to 70
0000012A B8 00000019    1      mov     eax, 25          ; get random 0 to number
0000012F E8 00000000 E    1      call    RandomRange
00000134 40          1      inc     eax
00000135 A3 0000002C R    1      mov     winningPicks.yellowBall, eax          ; move random number into winning structure
0000013A E8 00000000 E    1      call    WriteDec          ; write yellow ball random number to the
→screen
                                mWriteSpace          ; insert a space
0000019F          1      .data
0000019F 00000001 [    1      ??0005 BYTE 1 DUP(' '),0
                                20
                                ] 00
0000013F          1      .code
0000013F 52          1      push    edx
00000140 BA 0000019F R    1      mov     edx,OFFSET ??0005
00000145 E8 00000000 E    1      call    WriteString
0000014A 5A          1      pop     edx
0000014B E8 00000000 E    1      call    crlf          ; character return

00000150          promptW1:
                                mWriteString OFFSET prompt1          ; print 'Please enter your first white number: ' to console
00000150 52          1      push    edx
00000151 BA 000000A7 R    1      mov     edx,OFFSET OFFSET prompt1
00000156 E8 00000000 E    1      call    WriteString
0000015B 5A          1      pop     edx
0000015C E8 00000000 E    1      call    ReadDec          ; read user input from console, stores in eax

                                ; if invalid input is entered then eax = 0
                                .IF(eax == 0 || eax > 70)
00000161 0B C0          *      or     eax, eax

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00000163 74 05      *      je  @C0002
00000165 83 F8 46  *      cmp   eax, 046h
00000168 76 13      *      jbe   @C0001
0000016A      *@C0002:
                                mWriteLn 'Invalid Input! Enter a number between 1-70'
000001A1      2      .data
000001A1 49 6E 76 61 6C 2      ??0006 BYTE 'Invalid Input! Enter a number between 1-70',0
                                69 64 20 49 6E
                                70 75 74 21 20
                                45 6E 74 65 72
                                20 61 20 6E 75
                                6D 62 65 72 20
                                62 65 74 77 65
                                65 6E 20 31 2D
                                37 30 00
0000016A      2      .code
0000016A 52      2      push   edx
0000016B BA 000001A1 R 2      mov    edx,OFFSET ??0006
00000170 E8 00000000 E 2      call   WriteString
00000175 5A      2      pop    edx
00000176 E8 00000000 E 1      call   Crlf
0000017B EB D3      jmp    promptW1      ; prompt user for another first white ball number
                                .ENDIF
0000017D      *@C0001:
0000017D A3 00000000 R      mov    userPicks.whiteBall1, eax      ; move users first white ball number into variable →
→ whiteBall1
00000182      promptW2:
                                mWriteString OFFSET prompt2      ; print 'Please enter your second white number: ' to →
→ console
00000182 52      1      push   edx
00000183 BA 000000CE R 1      mov    edx,OFFSET OFFSET prompt2
00000188 E8 00000000 E 1      call   WriteString
0000018D 5A      1      pop    edx
0000018E E8 00000000 E      call   ReadDec      ; read user input from console, stores in eax
                                ; if invalid input is entered then eax = 0
                                .IF(eax == 0 || eax > 70)
00000193 0B C0      *      or    eax, eax
00000195 74 05      *      je    @C0005
00000197 83 F8 46  *      cmp   eax, 046h
0000019A 76 13      *      jbe   @C0004
0000019C      *@C0005:
                                mWriteLn 'Invalid Input! Enter a number between 1-70'
000001CC      2      .data
000001CC 49 6E 76 61 6C 2      ??0007 BYTE 'Invalid Input! Enter a number between 1-70',0
                                69 64 20 49 6E
                                70 75 74 21 20
                                45 6E 74 65 72
                                20 61 20 6E 75

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        6D 62 65 72 20
        62 65 74 77 65
        65 6E 20 31 2D
        37 30 00
0000019C          2          .code
0000019C 52          2          push    edx
0000019D BA 000001CC R    2          mov     edx,OFFSET ??0007
000001A2 E8 00000000 E    2          call    WriteString
000001A7 5A          2          pop     edx
000001A8 E8 00000000 E    1          call    Crlf
000001AD EB D3          jmp     promptW2          ; prompt user for another second white ball number
                                .ENDIF
000001AF          *@C0004:
000001AF A3 00000004 R          mov     userPicks.whiteBall2, eax          ; move users second white ball number into variable →
→whiteBall2
                                .IF(eax == userPicks.whiteBall1)          ; if first ball = second ball
000001B4 3B 05 00000000 R *    cmp     eax, userPicks . whiteBall1
000001BA 75 07          *    jne     @C0007
000001BC E8 00000414          call    printDuplicates          ; then go to sub-proc print duplicates
000001C1 EB BF          jmp     promptW2          ; prompt user for another second white →
→ball
                                .ENDIF
000001C3          *@C0007:
000001C3          promptW3:
                                mWriteString OFFSET prompt3          ; print 'Please enter your third white number: ' to console
000001C3 52          1          push    edx
000001C4 BA 000000F6 R    1          mov     edx,OFFSET OFFSET prompt3
000001C9 E8 00000000 E    1          call    WriteString
000001CE 5A          1          pop     edx
000001CF E8 00000000 E          call    ReadDec          ; read user input from console, stores in eax
                                ; if invalid input is entered then eax = 0
                                .IF(eax == 0 || eax > 70)
000001D4 0B C0          *    or     eax, eax
000001D6 74 05          *    je     @C000A
000001D8 83 F8 46          *    cmp     eax, 046h
000001DB 76 13          *    jbe     @C0009
000001DD          *@C000A:
                                mWriteLn 'Invalid Input! Enter a number between 1-70'
000001F7          2          .data
000001F7 49 6E 76 61 6C    2          ??0008 BYTE 'Invalid Input! Enter a number between 1-70',0
        69 64 20 49 6E
        70 75 74 21 20
        45 6E 74 65 72
        20 61 20 6E 75
        6D 62 65 72 20

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62 65 74 77 65
65 6E 20 31 2D
37 30 00

000001DD          2          .code
000001DD 52          2          push    edx
000001DE BA 000001F7 R    2          mov     edx,OFFSET ??0008
000001E3 E8 00000000 E    2          call    WriteString
000001E8 5A          2          pop     edx
000001E9 E8 00000000 E    1          call    Crlf
000001EE EB D3          jmp     promptW3          ; prompt user for another third white ball number
                                .ENDIF

000001F0          *@C0009:

000001F0 A3 00000008 R          mov     userPicks.whiteBall3, eax          ; move users third white ball number into variable →
→ whiteBall3

                                ; if the third user number ball is equal to any previous ball, call print duplicates sub proc
                                .IF(eax == userPicks.whiteBall1 || eax == userPicks.whiteBall2)
000001F5 3B 05 00000000 R *    cmp     eax, userPicks . whiteBall1
000001FB 74 08          *          je     @C000D
000001FD 3B 05 00000004 R *    cmp     eax, userPicks . whiteBall2
00000203 75 07          *          jne     @C000C
00000205          *@C000D:
00000205 E8 000003CB          call    printDuplicates

0000020A EB B7          jmp     promptW3          ; prompt for another first white ball →
→ number

                                .ENDIF

0000020C          *@C000C:

0000020C          promptW4:
                                mWriteString OFFSET prompt4          ; print 'Please enter your forth white number: ' to console
0000020C 52          1          push    edx
0000020D BA 0000011D R    1          mov     edx,OFFSET OFFSET prompt4
00000212 E8 00000000 E    1          call    WriteString
00000217 5A          1          pop     edx
00000218 E8 00000000 E          call    ReadDec          ; read user input from console, stores in eax

                                ; if invalid input is entered then eax = 0
                                .IF(eax == 0 || eax > 70)
0000021D 0B C0          *          or     eax, eax
0000021F 74 05          *          je     @C0010
00000221 83 F8 46          *          cmp     eax, 046h
00000224 76 13          *          jbe     @C000F
00000226          *@C0010:
                                mWriteLn 'Invalid Input! Enter a number between 1-70'
00000222          2          .data
00000222 49 6E 76 61 6C    2          ??0009 BYTE 'Invalid Input! Enter a number between 1-70',0
                                69 64 20 49 6E
                                70 75 74 21 20

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45 6E 74 65 72
20 61 20 6E 75
6D 62 65 72 20
62 65 74 77 65
65 6E 20 31 2D
37 30 00

00000226          2          .code
00000226 52          2          push    edx
00000227 BA 00000222 R 2          mov     edx,OFFSET ??0009
0000022C E8 00000000 E 2          call    WriteString
00000231 5A          2          pop     edx
00000232 E8 00000000 E 1          call    Crlf
00000237 EB D3          jmp     promptW4          ; prompt user for another forth white ball number
                                .ENDIF

00000239          *@C000F:

00000239 A3 0000000C R          mov     userPicks.whiteBall4, eax          ; move users forth white ball number into variable →
→ whiteBall4

                                ; if the forth user number ball is equal to any previous ball, call print duplicates sub proc
                                .IF(eax == userPicks.whiteBall1 || eax == userPicks.whiteBall2 || eax == userPicks.whiteBall3)
0000023E 3B 05 00000000 R *      cmp     eax, userPicks . whiteBall1
00000244 74 10          *      je     @C0013
00000246 3B 05 00000004 R *      cmp     eax, userPicks . whiteBall2
0000024C 74 08          *      je     @C0013
0000024E 3B 05 00000008 R *      cmp     eax, userPicks . whiteBall3
00000254 75 07          *      jne    @C0012
00000256          *@C0013:
00000256 E8 0000037A          call    printDuplicates

0000025B EB AF          jmp     promptW4          ; prompt for another first white ball →
→ number
                                .ENDIF

0000025D          *@C0012:

0000025D          promptW5:
                                mWriteString OFFSET prompt5          ; print 'Please enter your fifth white number: ' to console
0000025D 52          1          push    edx
0000025E BA 00000144 R 1          mov     edx,OFFSET OFFSET prompt5
00000263 E8 00000000 E 1          call    WriteString
00000268 5A          1          pop     edx
00000269 E8 00000000 E          call    ReadDec          ; read user input from console, stores in eax

                                ; if invalid input is entered then eax = 0
                                .IF(eax == 0 || eax > 70)
0000026E 0B C0          *      or     eax, eax
00000270 74 05          *      je     @C0017
00000272 83 F8 46          *      cmp     eax, 046h
00000275 76 13          *      jbe    @C0016
00000277          *@C0017:

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0000024D          2          mWriteLn 'Invalid Input! Enter a number between 1-70'
0000024D 49 6E 76 61 6C      2          .data
                                ??000A BYTE 'Invalid Input! Enter a number between 1-70',0
                                69 64 20 49 6E
                                70 75 74 21 20
                                45 6E 74 65 72
                                20 61 20 6E 75
                                6D 62 65 72 20
                                62 65 74 77 65
                                65 6E 20 31 2D
                                37 30 00

00000277          2          .code
00000277 52                2          push    edx
00000278 BA 0000024D R      2          mov     edx,OFFSET ??000A
0000027D E8 00000000 E      2          call   WriteString
00000282 5A                2          pop     edx
00000283 E8 00000000 E      1          call   Crlf
00000288 EB D3                jmp     promptW5          ; prompt user for another fifth white ball number
                                .ENDIF

0000028A          *@C0016:

0000028A A3 00000010 R      mov     userPicks.whiteBall5, eax          ; move users fifth white ball number into variable

                                ; if the fifth user number ball is equal to any previous ball, call print duplicates sub proc
                                .IF(eax == userPicks.whiteBall1 || eax == userPicks.whiteBall2 || eax == userPicks.whiteBall3 →
→ || eax == userPicks.whiteBall4)
0000028F 3B 05 00000000 R *    cmp     eax, userPicks . whiteBall1
00000295 74 18                *    je     @C001A
00000297 3B 05 00000004 R *    cmp     eax, userPicks . whiteBall2
0000029D 74 10                *    je     @C001A
0000029F 3B 05 00000008 R *    cmp     eax, userPicks . whiteBall3
000002A5 74 08                *    je     @C001A
000002A7 3B 05 0000000C R *    cmp     eax, userPicks . whiteBall4
000002AD 75 07                *    jne    @C0019
000002AF          *@C001A:
000002AF E8 00000321          call   printDuplicates

000002B4 EB A7                jmp     promptW5          ; prompt for another first white ball →
→ number

                                .ENDIF

000002B6          *@C0019:

000002B6          promptY1:
                                mWriteString OFFSET prompt6          ; print 'Please enter your yellow number: ' to console
000002B6 52                1          push    edx
000002B7 BA 0000016B R      1          mov     edx,OFFSET OFFSET prompt6
000002BC E8 00000000 E      1          call   WriteString
000002C1 5A                1          pop     edx
000002C2 E8 00000000 E      call   ReadDec          ; read user input from console, stores in eax

                                ; if invalid input is entered then eax = 0

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000002C7 0B C0      *      or     eax, eax
000002C9 74 05      *      je     @C001F
000002CB 83 F8 19    *      cmp     eax, 019h
000002CE 76 13      *      jbe     @C001E
000002D0      *@C001F:
                                mWriteLn 'Invalid Input! Enter a number between 1-25'
00000278      2      .data
00000278 49 6E 76 61 6C 2      ??000B BYTE 'Invalid Input! Enter a number between 1-25',0
                                69 64 20 49 6E
                                70 75 74 21 20
                                45 6E 74 65 72
                                20 61 20 6E 75
                                6D 62 65 72 20
                                62 65 74 77 65
                                65 6E 20 31 2D
                                32 35 00
000002D0      2      .code
000002D0 52      2      push     edx
000002D1 BA 00000278 R 2      mov     edx,OFFSET ??000B
000002D6 E8 00000000 E 2      call    WriteString
000002DB 5A      2      pop     edx
000002DC E8 00000000 E 1      call    Crlf
000002E1 EB D3      jmp     promptY1      ; prompt user for another yellow ball number
                                .ENDIF
000002E3      *@C001E:
000002E3 A3 00000014 R      mov     userPicks.yellowBall, eax      ; move users yellow ball number into variable yellowBall
000002E8      checkW1:
000002E8 A1 00000000 R      mov     eax, userPicks.whiteBall1      ; move the first users white ball number into eax
000002ED 3B 05 00000018 R      cmp     eax, winningPicks.whiteBall1      ; compare users first white ball to winning first white ball
000002F3 74 22      je     incrementCountW1      ; if users first ball = winning first ball, jump to increment →
→ count W1
000002F5 3B 05 0000001C R      cmp     eax, winningPicks.whiteBall2      ; compare users first white ball to winning second white ball
000002FB 74 1A      je     incrementCountW1      ; if users first ball = winning second ball, jump to increment →
→ count W1
000002FD 3B 05 00000020 R      cmp     eax, winningPicks.whiteBall3      ; compare users first white ball to winning third white ball
00000303 74 12      je     incrementCountW1      ; if users first ball = winning third ball, jump to increment →
→ count W1
00000305 3B 05 00000024 R      cmp     eax, winningPicks.whiteBall4      ; compare users first white ball to winning forth white ball
0000030B 74 0A      je     incrementCountW1      ; if users first ball = winning forth ball, jump to increment →
→ count W1
0000030D 3B 05 00000028 R      cmp     eax, winningPicks.whiteBall5      ; compare users first white ball to winning fifth white ball
00000313 74 02      je     incrementCountW1      ; if users first ball = winning fifth ball, jump to increment →
→ count W1
00000315 EB 06      jmp     checkW2      ; if no users ball numbers = winning balls number, jump to next →

```

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→ users number

```

00000317          incrementCountW1:
00000317  FF 05 0000018D R      inc matchedWhiteBalls          ; increment the number of matched white balls found when match is →
→ found

0000031D          checkW2:
0000031D  A1 00000004 R      mov eax, userPicks.whiteBall2      ; move the second users white ball number into eax
00000322  3B 05 00000018 R      cmp eax, winningPicks.whiteBall1    ; compare users second white ball to winning first white ball
00000328  74 22              je incrementCountW2                ; if users second ball = winning first ball, jump to increment →
→ count W1

0000032A  3B 05 0000001C R      cmp eax, winningPicks.whiteBall2    ; compare users second white ball to winning second white ball
00000330  74 1A              je incrementCountW2                ; if users second ball = winning second ball, jump to increment →
→ count W1

00000332  3B 05 00000020 R      cmp eax, winningPicks.whiteBall3    ; compare users second white ball to winning third white ball
00000338  74 12              je incrementCountW2                ; if users second ball = winning third ball, jump to increment →
→ count W1

0000033A  3B 05 00000024 R      cmp eax, winningPicks.whiteBall4    ; compare users second white ball to winning forth white ball
00000340  74 0A              je incrementCountW2                ; if users second ball = winning forth ball, jump to increment →
→ count W1

00000342  3B 05 00000028 R      cmp eax, winningPicks.whiteBall5    ; compare users second white ball to winning fifth white ball
00000348  74 02              je incrementCountW2                ; if users second ball = winning fifth ball, jump to increment →
→ count W1
0000034A  EB 06              jmp checkW3                      ; if no users ball numbers = winning balls number, jump to next →
→ users number

0000034C          incrementCountW2:
0000034C  FF 05 0000018D R      inc matchedWhiteBalls          ; increment the number of matched white balls found when match is →
→ found

00000352          checkW3:
00000352  A1 00000008 R      mov eax, userPicks.whiteBall3      ; move the third users white ball number into eax
00000357  3B 05 00000018 R      cmp eax, winningPicks.whiteBall1    ; compare users third white ball to winning first white ball
0000035D  74 22              je incrementCountW3                ; if users third ball = winning first ball, jump to increment →
→ count W1

0000035F  3B 05 0000001C R      cmp eax, winningPicks.whiteBall2    ; compare users third white ball to winning second white ball
00000365  74 1A              je incrementCountW3                ; if users third ball = winning second ball, jump to increment →
→ count W1

00000367  3B 05 00000020 R      cmp eax, winningPicks.whiteBall3    ; compare users third white ball to winning third white ball
0000036D  74 12              je incrementCountW3                ; if users third ball = winning third ball, jump to increment →
→ count W1

0000036F  3B 05 00000024 R      cmp eax, winningPicks.whiteBall4    ; compare users third white ball to winning forth white balla
00000375  74 0A              je incrementCountW3                ; if users third ball = winning forth ball, jump to increment →
→ count W1

```

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```

00000377 3B 05 00000028 R      cmp eax, winningPicks.whiteBall5 ; compare users third white ball to winning fifth white ball
0000037D 74 02                      je incrementCountW3              ; if users third ball = winning fifth ball, jump to increment →
→ count W1
0000037F EB 06                      jmp checkW4                      ; if no users ball numbers = winning balls number, jump to next →
→ users number

00000381
00000381 FF 05 0000018D R      incrementCountW3:
                                inc matchedWhiteBalls                ; increment the number of matched white balls found when match is →
→ found

00000387
00000387 A1 0000000C R      checkW4:
                                mov eax, userPicks.whiteBall4        ; move the forth users white ball number into eax
0000038C 3B 05 00000018 R      cmp eax, winningPicks.whiteBall1 ; compare users forth white ball to winning first white ball
00000392 74 22                      je incrementCountW4              ; if users forth ball = winning first ball, jump to increment →
→ count W1

00000394 3B 05 0000001C R      cmp eax, winningPicks.whiteBall2 ; compare users forth white ball to winning second white ball →
→
0000039A 74 1A                      je incrementCountW4              ; if users forth ball = winning second ball, jump to increment →
→ count W1

0000039C 3B 05 00000020 R      cmp eax, winningPicks.whiteBall3 ; compare users forth white ball to winning third white ball →
000003A2 74 12                      je incrementCountW4              ; if users forth ball = winning third ball, jump to increment →
→ count W1

000003A4 3B 05 00000024 R      cmp eax, winningPicks.whiteBall4 ; compare users forth white ball to winning forth white ball
000003AA 74 0A                      je incrementCountW4              ; if users forth ball = winning forth ball, jump to increment →
→ count W1

000003AC 3B 05 00000028 R      cmp eax, winningPicks.whiteBall5 ; compare users forth white ball to winning fifth white ball
000003B2 74 02                      je incrementCountW4              ; if users forth ball = winning fifth ball, jump to increment →
→ count W1
000003B4 EB 06                      jmp checkW5                      ; if no users ball numbers = winning balls number, jump to next →
→ users number

000003B6
000003B6 FF 05 0000018D R      incrementCountW4:
                                inc matchedWhiteBalls                ; increment the number of matched white balls found when match is →
→ found

000003BC
000003BC A1 00000010 R      checkW5:
                                mov eax, userPicks.whiteBall5        ; move the fifth users white ball number into eax
000003C1 3B 05 00000018 R      cmp eax, winningPicks.whiteBall1 ; compare users fifth white ball to winning first white ball
000003C7 74 22                      je incrementCountW5              ; if users fifth ball = winning first ball, jump to increment →
→ count W1

000003C9 3B 05 0000001C R      cmp eax, winningPicks.whiteBall2 ; compare users fifth white ball to winning second white ball
000003CF 74 1A                      je incrementCountW5              ; if users fifth ball = winning second ball, jump to increment →
→ count W1

000003D1 3B 05 00000020 R      cmp eax, winningPicks.whiteBall3 ; compare users fifth white ball to winning third white ball

```

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```

000003D7 74 12          je incrementCountW5          ; if users fifth ball = winning third ball, jump to increment →
→ count W1

000003D9 3B 05 00000024 R      cmp eax, winningPicks.whiteBall4      ; compare users fifth white ball to winning forth white ball
000003DF 74 0A          je incrementCountW5          ; if users fifth ball = winning forth ball, jump to increment →
→ count W1

000003E1 3B 05 00000028 R      cmp eax, winningPicks.whiteBall5      ; compare users fifth white ball to winning fifth white ball
000003E7 74 02          je incrementCountW5          ; if users fifth ball = winning fifth ball, jump to increment →
→ count W1

000003E9 EB 06          jmp checkYellowBall          ; all white balls have been checked now, jump to checkYellowBall

000003EB          incrementCountW5:
000003EB FF 05 0000018D R      inc matchedWhiteBalls          ; increment the number of matched white balls found when match is →
→ found

000003F1          checkYellowBall:
000003F1 A1 00000014 R      mov eax, userPicks.yellowBall      ; move the users yellow ball number into eax
000003F6 3B 05 0000002C R      cmp eax, winningPicks.yellowBall      ; compare users yellow ball to winning yellow ball
000003FC 74 02          je incrementYellowCount      ; if users yellow ball = winning yellow ball, jump to increment →
→ yellow count

000003FE EB 0A          jmp printOutcome

00000400          incrementYellowCount:
00000400 C7 05 00000191 R      mov yellowBallMatch, 1          ; move 1 into yellow ball match signifying user guessed yellow →
→ ball correct
00000001

0000040A          printOutcome:

                                ; case 1: 0 white ball, 0 yellow
                                .IF(matchedWhiteBalls == 0 && yellowBallMatch == 0)

0000040A 83 3D 0000018D R      cmp    matchedWhiteBalls, 000h
00000411 75 1A          jne    @C0021
00000413 83 3D 00000191 R      cmp    yellowBallMatch, 000h
0000041A 75 11          jne    @C0021
                                mWriteLn 'You have matched 0 white numbers but not the yellow number. Your ticket wins $0!'
                                .data
000002A3          ??000C BYTE 'You have matched 0 white numbers but not the yellow number. Your ticket wins $0!',0
000002A3 59 6F 75 20 68      2
61 76 65 20 6D      2
61 74 63 68 65
64 20 30 20 77
68 69 74 65 20
6E 75 6D 62 65
72 73 20 62 75
74 20 6E 6F 74
20 74 68 65 20
79 65 6C 6C 6F
77 20 6E 75 6D

```


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```

62 65 72 2E 20
59 6F 75 72 20
74 69 63 6B 65
74 20 77 69 6E
73 20 24 30 21
00
0000041C          2      .code
0000041C 52          2      push    edx
0000041D BA 000002A3 R    2      mov     edx,OFFSET ??000C
00000422 E8 00000000 E    2      call    WriteString
00000427 5A          2      pop     edx
00000428 E8 00000000 E    1      call    Crlf
                                .ENDIF
0000042D          *@C0021:

                                ;case 2: 0 white ball, 1 yellow
                                .IF(matchedWhiteBalls == 0 && yellowBallMatch == 1)
0000042D 83 3D 0000018D R    *      cmp     matchedWhiteBalls, 000h
00000434 75 1A          *      jne     @C0024
00000436 83 3D 00000191 R    *      cmp     yellowBallMatch, 001h
0000043D 75 11          *      jne     @C0024
                                mWriteLn 'You have matched 0 white numbers and the yellow number. Your ticket wins $2!'
000002F4          2      .data
000002F4 59 6F 75 20 68    2      ??000D BYTE 'You have matched 0 white numbers and the yellow number. Your ticket wins $2! ',0
61 76 65 20 6D
61 74 63 68 65
64 20 30 20 77
68 69 74 65 20
6E 75 6D 62 65
72 73 20 61 6E
64 20 74 68 65
20 79 65 6C 6C
6F 77 20 6E 75
6D 62 65 72 2E
20 59 6F 75 72
20 74 69 63 6B
65 74 20 77 69
6E 73 20 24 32
21 00
0000043F          2      .code
0000043F 52          2      push    edx
00000440 BA 000002F4 R    2      mov     edx,OFFSET ??000D
00000445 E8 00000000 E    2      call    WriteString
0000044A 5A          2      pop     edx
0000044B E8 00000000 E    1      call    Crlf
                                .ENDIF
00000450          *@C0024:

                                ; case 3: 1 white ball, 0 yellow

```

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```

                                .IF(matchedWhiteBalls == 1 && yellowBallMatch == 0)
00000450 83 3D 0000018D R
                                01 *
                                cmp    matchedWhiteBalls, 001h
00000457 75 1A *
                                jne    @C0027
00000459 83 3D 00000191 R
                                00 *
                                cmp    yellowBallMatch, 000h
00000460 75 11 *
                                jne    @C0027
                                mWriteLn 'You have matched 1 white numbers but not the yellow number. Your ticket wins $0!'
00000341 .data 2
00000341 59 6F 75 20 68 2
                                ??000E BYTE 'You have matched 1 white numbers but not the yellow number. Your ticket wins $0!',0
                                61 76 65 20 6D
                                61 74 63 68 65
                                64 20 31 20 77
                                68 69 74 65 20
                                6E 75 6D 62 65
                                72 73 20 62 75
                                74 20 6E 6F 74
                                20 74 68 65 20
                                79 65 6C 6C 6F
                                77 20 6E 75 6D
                                62 65 72 2E 20
                                59 6F 75 72 20
                                74 69 63 6B 65
                                74 20 77 69 6E
                                73 20 24 30 21
                                00
00000462 .code 2
00000462 52 2
                                push    edx
00000463 BA 00000341 R 2
                                mov     edx,OFFSET ??000E
00000468 E8 00000000 E 2
                                call    WriteString
0000046D 5A 2
                                pop     edx
0000046E E8 00000000 E 1
                                call    Crlf
                                .ENDIF
00000473 *@C0027:

                                ; case 4: 1 white ball, 1 yellow
                                .IF(matchedWhiteBalls == 1 && yellowBallMatch == 1)
00000473 83 3D 0000018D R
                                01 *
                                cmp    matchedWhiteBalls, 001h
0000047A 75 1A *
                                jne    @C002A
0000047C 83 3D 00000191 R
                                01 *
                                cmp    yellowBallMatch, 001h
00000483 75 11 *
                                jne    @C002A
                                mWriteLn 'You have matched 1 white numbers and the yellow number. Your ticket wins $4!'
00000392 .data 2
00000392 59 6F 75 20 68 2
                                ??000F BYTE 'You have matched 1 white numbers and the yellow number. Your ticket wins $4!',0
                                61 76 65 20 6D
                                61 74 63 68 65
                                64 20 31 20 77
                                68 69 74 65 20
                                6E 75 6D 62 65

```

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```

72 73 20 61 6E
64 20 74 68 65
20 79 65 6C 6C
6F 77 20 6E 75
6D 62 65 72 2E
20 59 6F 75 72
20 74 69 63 6B
65 74 20 77 69
6E 73 20 24 34
21 00
00000485          2      .code
00000485 52          2      push    edx
00000486 BA 00000392 R    2      mov     edx,OFFSET ??000F
0000048B E8 00000000 E    2      call    WriteString
00000490 5A          2      pop     edx
00000491 E8 00000000 E    1      call    Crlf
                                .ENDIF
00000496          *@C002A:

                                ; case 5: 2 white ball, 0 yellow
                                .IF(matchedWhiteBalls == 2 && yellowBallMatch == 0)
00000496 83 3D 0000018D R    *      cmp     matchedWhiteBalls, 002h
0000049D 02          *      jne     @C002D
0000049F 83 3D 00000191 R    *      cmp     yellowBallMatch, 000h
000004A6 00          *      jne     @C002D
                                mWriteLn 'You have matched 2 white numbers but not the yellow number. Your ticket wins $0!'
000003DF          2      .data
000003DF 59 6F 75 20 68 2      ??0010 BYTE 'You have matched 2 white numbers but not the yellow number. Your ticket wins $0!',0
61 76 65 20 6D
61 74 63 68 65
64 20 32 20 77
68 69 74 65 20
6E 75 6D 62 65
72 73 20 62 75
74 20 6E 6F 74
20 74 68 65 20
79 65 6C 6C 6F
77 20 6E 75 6D
62 65 72 2E 20
59 6F 75 72 20
74 69 63 6B 65
74 20 77 69 6E
73 20 24 30 21
00
000004A8          2      .code
000004A8 52          2      push    edx
000004A9 BA 000003DF R    2      mov     edx,OFFSET ??0010
000004AE E8 00000000 E    2      call    WriteString
000004B3 5A          2      pop     edx

```

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```

000004B4 E8 00000000 E      1      call    Crlf
                                .ENDIF
000004B9                                *@C002D:

                                ; case 6: 2 white ball, 1 yellow
                                .IF(matchedWhiteBalls == 2 && yellowBallMatch == 1)

000004B9 83 3D 0000018D R      *      cmp     matchedWhiteBalls, 002h
                                02      *      jne     @C0030
000004C0 75 1A                                *
000004C2 83 3D 00000191 R      *      cmp     yellowBallMatch, 001h
                                01      *      jne     @C0030
000004C9 75 11                                *
                                mWriteLn 'You have matched 2 white numbers and the yellow number. Your ticket wins $10!'
00000430                                2      .data
00000430 59 6F 75 20 68      2      ??0011 BYTE 'You have matched 2 white numbers and the yellow number. Your ticket wins $10!',0
                                61 76 65 20 6D
                                61 74 63 68 65
                                64 20 32 20 77
                                68 69 74 65 20
                                6E 75 6D 62 65
                                72 73 20 61 6E
                                64 20 74 68 65
                                20 79 65 6C 6C
                                6F 77 20 6E 75
                                6D 62 65 72 2E
                                20 59 6F 75 72
                                20 74 69 63 6B
                                65 74 20 77 69
                                6E 73 20 24 31
                                30 21 00

000004CB                                2      .code
000004CB 52                                2      push    edx
000004CC BA 00000430 R      2      mov     edx,OFFSET ??0011
000004D1 E8 00000000 E      2      call    WriteString
000004D6 5A                                2      pop     edx
000004D7 E8 00000000 E      1      call    Crlf
                                .ENDIF
000004DC                                *@C0030:

                                ; case 7: 3 white ball, 0 yellow
                                .IF(matchedWhiteBalls == 3 && yellowBallMatch == 0)

000004DC 83 3D 0000018D R      *      cmp     matchedWhiteBalls, 003h
                                03      *      jne     @C0033
000004E3 75 1A                                *
000004E5 83 3D 00000191 R      *      cmp     yellowBallMatch, 000h
                                00      *      jne     @C0033
000004EC 75 11                                *
                                mWriteLn 'You have matched 3 white numbers but not the yellow number. Your ticket wins $10!'
0000047E                                2      .data
0000047E 59 6F 75 20 68      2      ??0012 BYTE 'You have matched 3 white numbers but not the yellow number. Your ticket wins $10!',0
                                61 76 65 20 6D

```

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```

61 74 63 68 65
64 20 33 20 77
68 69 74 65 20
6E 75 6D 62 65
72 73 20 62 75
74 20 6E 6F 74
20 74 68 65 20
79 65 6C 6C 6F
77 20 6E 75 6D
62 65 72 2E 20
59 6F 75 72 20
74 69 63 6B 65
74 20 77 69 6E
73 20 24 31 30
21 00
000004EE          2          .code
000004EE 52          2          push    edx
000004EF BA 0000047E R    2          mov     edx,OFFSET ??0012
000004F4 E8 00000000 E    2          call    WriteString
000004F9 5A          2          pop     edx
000004FA E8 00000000 E    1          call    Crlf
                                .ENDIF
000004FF          *@C0033:

                                ; case 8: 3 white ball, 1 yellow
                                .IF(matchedWhiteBalls == 3 && yellowBallMatch == 1)
000004FF 83 3D 0000018D R    *          cmp     matchedWhiteBalls, 003h
00000506 75 1A          *          jne     @C0036
00000508 83 3D 00000191 R    *          cmp     yellowBallMatch, 001h
0000050F 75 11          *          jne     @C0036
                                mWriteLn 'You have matched 3 white numbers and the yellow number. Your ticket wins $200!'
000004D0          2          .data
000004D0 59 6F 75 20 68    2          ??0013 BYTE 'You have matched 3 white numbers and the yellow number. Your ticket wins $200!',0
61 76 65 20 6D
61 74 63 68 65
64 20 33 20 77
68 69 74 65 20
6E 75 6D 62 65
72 73 20 61 6E
64 20 74 68 65
20 79 65 6C 6C
6F 77 20 6E 75
6D 62 65 72 2E
20 59 6F 75 72
20 74 69 63 6B
65 74 20 77 69
6E 73 20 24 32
30 30 21 00
00000511          2          .code

```

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```

00000511 52          2      push    edx
00000512 BA 000004D0 R    2      mov     edx,OFFSET ??0013
00000517 E8 00000000 E    2      call    WriteString
0000051C 5A          2      pop     edx
0000051D E8 00000000 E    1      call    Crlf
                                .ENDIF
00000522          *@C0036:

                                ; case 9: 4 white ball, 0 yellow
                                .IF(matchedWhiteBalls == 4 && yellowBallMatch == 0)

00000522 83 3D 0000018D R    *      cmp     matchedWhiteBalls, 004h
                                04          *
00000529 75 1A          *      jne     @C0039
0000052B 83 3D 00000191 R    *      cmp     yellowBallMatch, 000h
                                00          *
00000532 75 11          *      jne     @C0039
                                mWriteLn 'You have matched 4 white numbers but not the yellow number. Your ticket wins $500!'
0000051F          2      .data
0000051F 59 6F 75 20 68    2      ??0014 BYTE 'You have matched 4 white numbers but not the yellow number. Your ticket wins $500!',0
                                61 76 65 20 6D
                                61 74 63 68 65
                                64 20 34 20 77
                                68 69 74 65 20
                                6E 75 6D 62 65
                                72 73 20 62 75
                                74 20 6E 6F 74
                                20 74 68 65 20
                                79 65 6C 6C 6F
                                77 20 6E 75 6D
                                62 65 72 2E 20
                                59 6F 75 72 20
                                74 69 63 6B 65
                                74 20 77 69 6E
                                73 20 24 35 30
                                30 21 00

00000534          2      .code
00000534 52          2      push    edx
00000535 BA 0000051F R    2      mov     edx,OFFSET ??0014
0000053A E8 00000000 E    2      call    WriteString
0000053F 5A          2      pop     edx
00000540 E8 00000000 E    1      call    Crlf
                                .ENDIF
00000545          *@C0039:

                                ; case 10: 4 white ball, 1 yellow
                                .IF(matchedWhiteBalls == 4 && yellowBallMatch == 1)

00000545 83 3D 0000018D R    *      cmp     matchedWhiteBalls, 004h
                                04          *
0000054C 75 1A          *      jne     @C003C
0000054E 83 3D 00000191 R    *      cmp     yellowBallMatch, 001h
                                01          *

```

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```

00000555 75 11      *      jne      @C003C
                                mWriteLn 'You have matched 4 white numbers and the yellow number. Your ticket wins $10,000!'
00000572                                2      .data
00000572 59 6F 75 20 68      2      ??0015 BYTE 'You have matched 4 white numbers and the yellow number. Your ticket wins $10,000!',0
                                61 76 65 20 6D
                                61 74 63 68 65
                                64 20 34 20 77
                                68 69 74 65 20
                                6E 75 6D 62 65
                                72 73 20 61 6E
                                64 20 74 68 65
                                20 79 65 6C 6C
                                6F 77 20 6E 75
                                6D 62 65 72 2E
                                20 59 6F 75 72
                                20 74 69 63 6B
                                65 74 20 77 69
                                6E 73 20 24 31
                                30 2C 30 30 30
                                21 00

00000557                                2      .code
00000557 52                                2      push     edx
00000558 BA 00000572 R      2      mov      edx,OFFSET ??0015
0000055D E8 00000000 E      2      call     WriteString
00000562 5A                                2      pop      edx
00000563 E8 00000000 E      1      call     Crlf
                                .ENDIF

00000568                                *@C003C:

                                ; case 11: 5 white ball, 0 yellow
                                .IF(matchedWhiteBalls == 5 && yellowBallMatch == 0)

00000568 83 3D 0000018D R      cmp      matchedWhiteBalls, 005h
                                05                                *
0000056F 75 1A                                *      jne      @C003F
00000571 83 3D 00000191 R      cmp      yellowBallMatch, 000h
                                00                                *
00000578 75 11                                *      jne      @C003F
                                mWriteLn 'You have matched 5 white numbers but not the yellow number. Your ticket wins $1,000,000!'
000005C4                                2      .data
000005C4 59 6F 75 20 68      2      ??0016 BYTE 'You have matched 5 white numbers but not the yellow number. Your ticket wins
→ $1,000,000!',0
                                61 76 65 20 6D
                                61 74 63 68 65
                                64 20 35 20 77
                                68 69 74 65 20
                                6E 75 6D 62 65
                                72 73 20 62 75
                                74 20 6E 6F 74
                                20 74 68 65 20
                                79 65 6C 6C 6F
                                77 20 6E 75 6D

```

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```

62 65 72 2E 20
59 6F 75 72 20
74 69 63 6B 65
74 20 77 69 6E
73 20 24 31 2C
30 30 30 2C 30
30 30 21 00
0000057A          2      .code
0000057A 52          2      push    edx
0000057B BA 000005C4 R    2      mov     edx,OFFSET ??0016
00000580 E8 00000000 E    2      call    WriteString
00000585 5A          2      pop     edx
00000586 E8 00000000 E    1      call    Crlf
                                .ENDIF
0000058B          *@C003F:

                                ; case 12: 5 white ball, 1 yellow
                                .IF(matchedWhiteBalls == 5 && yellowBallMatch == 1)
0000058B 83 3D 0000018D R    *      cmp     matchedWhiteBalls, 005h
00000592 05          *      jne     @C0042
00000594 83 3D 00000191 R    *      cmp     yellowBallMatch, 001h
0000059B 01          *      jne     @C0042
                                mWriteLn 'You have matched 5 white numbers and the yellow number. Your ticket wins the Jackpot!'
0000061D          2      .data
0000061D 59 6F 75 20 68    2      ??0017 BYTE 'You have matched 5 white numbers and the yellow number. Your ticket wins the Jackpot!',0
61 76 65 20 6D
61 74 63 68 65
64 20 35 20 77
68 69 74 65 20
6E 75 6D 62 65
72 73 20 61 6E
64 20 74 68 65
20 79 65 6C 6C
6F 77 20 6E 75
6D 62 65 72 2E
20 59 6F 75 72
20 74 69 63 6B
65 74 20 77 69
6E 73 20 74 68
65 20 4A 61 63
6B 70 6F 74 21
00
0000059D          2      .code
0000059D 52          2      push    edx
0000059E BA 0000061D R    2      mov     edx,OFFSET ??0017
000005A3 E8 00000000 E    2      call    WriteString
000005A8 5A          2      pop     edx
000005A9 E8 00000000 E    1      call    Crlf
                                .ENDIF

```