



Project:

Health Conference Ticket Application

CS206: Assembly Language
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INTRODUCTION

Since a lot of people who work in hospital wants to visit the health conference to learn more and get to know other doctors to exchange Knowledge; we wanted to make application gives the medical staff a simpler way to purchase tickets for it .First, we will start by showing a menu has the type of the tickets and its prices and the visitor will book which and how many tickets they want, and our program will calculate the total price; if they talk during the conference, they will get a 50% discount.

Lastly the program will be terminated after the purchase.

THE CODE

```
emu8086 - assembler and microprocessor emulator 4.08
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0001 .model small
0002 .stack 100h
0003
0004
0005
0006 .data
0007
0008 MSG1 db 0Ah , 0Dh , " * Health Conference Ticket System * $"
0009
0010 MSG00 db 0Ah , 0Dh , "Please select choice:" ,
0011 db 0Ah , 0Dh , "1. purchasing tickets" ,
0012 db 0Ah , 0Dh , "2. Calculate the price" ,
0013 db 0Ah , 0Dh , "3. Exit" ,
0014 db 0Ah , 0Dh , "Enter 1 , 2, or 3 >> $"
0015
0016 MSG2 db 0Ah, 0Ah , 0Dh , " 1. Medical Student for 300 RS" ,
0017 db 0Ah , 0Dh , " 2. Resident Doctor for 500 RS" ,
0018 db 0Ah , 0Dh , " 3. Specialist Doctor for 1300 RS" ,
0019 db 0Ah , 0Dh , " Select 1 , 2, or 3 : $"
0020
0021 BuyTicketFirst DW "You have to buy tickets first $"
0022
0023 error db 0Ah ,0Dh , " You have enter an invalid choice ?? TRY AGAIN $"
0024
0025 db 0Ah , 0Dh , " Please select ticket to buy : $" ,
0026 Howmany db 0Ah,0Ah , 0Dh , " How many tickets? $" ,
0027 Price db 0Ah,0Ah , 0Dh , " The tickets price is $" ,
0028 Price2 db 0Ah,0Ah , 0Dh , " The tickets price until now is $"
0029 RS db " RS$"
0030 Thanku db 0Ah,0Ah,0Dh," * Thank You * $"
0031 Notification_FOR_DISCOUNT DW " In the conference,are you going to be a speaker?","$"
0032 Notification_ANS DW " Enter Y if yes or enter N if not>> ","$"
0033 ERROR_MSG DW " ERROR! invalid input try again","$"
0034 GOOD_NEWS DW " Congratulations! you got 50% discount off","$"
0035 DISCONUT_AMOUNT DW 50
0036 All_Price dw 0 ; to save all price
0037 .code
0038
0039
0040 MAIN PROC
0041
0042 MOV AX , @data
0043 MOV DS , AX
0044 ;Necessary lines
0045
0046 MOV AH , 9
0047 LEA DX , MSG1
0048 INT 21h
0049 ;To print the name of our system
0050 start_the_project: ; label to start every time from here
0051 MOV AH , 9
0052 LEA DX , MSG00
0053 INT 21h
0054 ;To print our menu
0055
0056 MOV AH,1
0057 int 21h
0058 ;To let the user enter the choice needed
0059 MOV BL,AL
0060 CMP BL,'1'
0061 JE Book_a_ticket
```

```

062 CMP BL,'2'
063 JE THEN_DO
064 ;when the user select the second selection without buying tickets first
065
066 CMP BL,'3'
067 JE Exit
068
069
070 MOV AH, 9
071 LEA DX,error
072 INT 21H
073 JMP start_the_project;when the user choose an invalid choice
074
075 THEN_DO:
076 CMP All_Price,0
077 JNE QuestionToTheUser
078 CALL New_Line;to START a NEW LINE
079 MOV AH,9
080 LEA DX,BuyTicketFirst
081 INT 21H
082
083 JMP start_the_project
084 ;when the user choose an invalid choice
085
086
087
088
089 ;-----
090 Book_a_ticket: ; come here only if the user select 1 from main menu
091 MOV AH, 9
092 LEA DX, MSG2
093 INT 21H
094
095 mov ah, 1
096 int 21h
097
098 CMP al,'1'
099 JE Student
100 CMP al,'2'
101 JE Resident
102 CMP al,'3'
103 JE Doctor
104
105
106 MOV AH, 9
107 LEA DX,error
108 INT 21H
109 JMP Book_a_ticket
110 ;when the user choose an invalid choice
111
112
113
114 Student:
115
116 MOV AH, 9
117 LEA DX, Howmany
118 INT 21H
119 CALL INDEC
120
121
122 MOV BX,300
123 MUL BX
124 MOV BX,AX
125 JMP Price_until_now
126
127
128 Resident:
129 MOV AH, 9
130 LEA DX, Howmany
131 INT 21H
132 CALL INDEC
133
134 MOV BX, 500
135 MUL BX
136 MOV BX,AX
137 JMP Price_until_now
138
139
140 Doctor:
141 MOV AH, 9
142 LEA DX, Howmany
143 INT 21H
144 CALL INDEC
145
146 MOV BX, 1300
147 MUL BX
148 MOV BX,AX
149 JMP Price_until_now
150
151
152
153
154 Price_until_now: ; to print price after each select
155 Add All_Price, BX
156 MOV AH, 9
157 LEA DX, Price2
158 INT 21H
159
160 mov ax,All_Price
161 CALL OUTDEC
162 mov ah,9
163 LEA DX,RS
164 int 21h
165 jmp start_the_project ; jump to the start of the project
166
167 ;-----
168
169 QuestionToTheUser:
170 CALL New_Line;to START a NEW LINE
171 CALL New_Line;to START a NEW LINE
172 MOV AH,9
173 LEA DX,Notification_FOR_DISCOUNT
174 INT 21H;display the statement "In the conference,are you going to be a speaker?"
175
176 TRY_AGAIN:;when An invalid value is inserted
177
178 CALL New_Line;to START a NEW LINE
179 CALL New_Line;to START a NEW LINE
180 MOV AH,9
181 LEA DX,Notification_ANS
182 INT 21H;display the statement "Enter Y if yes or enter N if not>>"

```

```

183
184 MOV AH,1;waiting for an input
185 INT 21H
186
187
188 CMP AL,"y"; IF AL=Y OR AL=y
189 JE THEN_CALCULATE
190 CMP AL,"Y"
191 JE THEN_CALCULATE;THE END OF THEN
192 ;if_ELSE statement
193 CMP AL,"n"; IF AL=N OR AL=n
194 JE TOTAL
195 CMP AL,"N"
196 JE TOTAL
197 JMP ELSE
198
199 THEN_CALCULATE:
200 CALL New_Line;to START a NEW LINE
201 CALL New_Line;to START a NEW LINE
202 MOV AH,9
203 LEA DX,GOOD_NEWS
204 INT 21H
205 CALL CALCULATE_DISCOUNT
206 JMP TOTAL
207
208 ELSE:
209 CALL New_Line;to START a NEW LINE
210
211 MOV AH,9
212 LEA DX,ERROR_MSG
213 INT 21H
214 JMP TRY_AGAIN ;UNTIL THE ENTERED CHAR IS either Y OR N
215 ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
216 TOTAL:
217 MOV AH , 9
218 LEA DX , Price
219 INT 21H
220
221 mov ax,All_Price
222 CALL OUTDEC
223 mov ah,9
224 LEA DX,RS
225 int 21h
226
227
228 jmp start_the_project ; jump to the start of the project
229
230
231 EXIT:mov ah,9
232
233 LEA DX,Thanku
234 INT 21H
235
236
237 mov ah,4ch
238 int 21h
239
240
241 main endp
242 INDEC PROC
243 ;----- READ DECIMAL NUMBER -----
244
245 PUSH BX
246 PUSH CX
247 PUSH DX
248
249 @BEGIN:
250 MOV AH,2
251 MOV DL,' '
252 INT 21H
253 XOR BX,BX
254 XOR CX,CX
255
256 MOV AH,1
257 INT 21H
258 CMP AL,'-'
259 JE @MINUS
260 CMP AL,'+'
261 JE @PLUS
262 JMP @REPEAT2
263 @MINUS:
264 MOV CX,1
265 @PLUS:
266 INT 21H
267 @REPEAT2:
268 CMP AL,'0'
269 JNGE @NOT_DIGIT
270 CMP AL,'9'
271 JNLE @NOT_DIGIT
272 AND AX,000FH
273 PUSH AX
274 MOV AX,10
275 MUL BX
276 POP BX
277 ADD BX,AX
278 MOV AH,1
279 INT 21H
280 CMP AL,0DH
281 JNE @REPEAT2
282 MOV AX,BX
283 OR CX,CX
284 JE @EXIT
285 NEG AX
286 @EXIT:
287 POP DX
288 POP CX
289 POP BX
290 RET
291 @NOT_DIGIT:
292 MOV AH,2
293 MOV DL,0DH
294 INT 21H
295 MOV DL,0AH
296 INT 21H
297 JMP @BEGIN
298 INDEC ENDP
299 ;-----END READ -----
300

```

```

301
302 ; OUTDEC program is a function to Display the decimal number in register AX to output screen
303
304 OUTDEC PROC
305 PUSH AX
306 PUSH BX
307 PUSH CX
308 PUSH DX
309 OR AX,AX
310 JGE @END_IF1
311 PUSH AX
312 MOV DL,'-'
313 MOV AH,2
314 INT 21H
315 POP AX
316 NEG AX
317 @END_IF1:
318 XOR CX,CX
319 MOV BX,10D
320 @REPEAT1:
321 XOR DX,DX
322 DIV BX
323 PUSH DX
324 INC CX
325 OR AX,AX
326 JNE @REPEAT1
327 MOV AH,2
328 @PRINT_LOOP:
329 POP DX
330 OR DL,30H
331 INT 21H
332 LOOP @PRINT_LOOP
333 POP DX
334 POP CX
335 POP BX
336 POP AX
337
338 RET
339 OUTDEC ENDP
340
341
342
343 New_Line PROC
344
345 MOV AH,2
346 MOV DL,0AH
347 INT 21H;START a NEW LINE
348
349 MOV AH,2
350 MOV DL,0DH
351 INT 21H;start from the current line
352 RET;return to main proc
353 New_Line ENDP
354
355 CALCULATE_DISCOUNT PROC
356
357 MOV AX,All_Price;COPY THE VALUE OF TOTAL PRICE TO AX BIT=16
358 mul DISCONUT_AMOUNT; DX:AX = AX * DISCONUT_AMOUNT |
359 mov bx,100
360 DIV bx;AX= DX:AX /100
361 SUB All_Price,AX;subtract the discount_percentage from the_price >> PRICE-(THE HALF OF PRICE)
362 ret;return to main proc
363 CALCULATE_DISCOUNT ENDP
364 end main
365
366 ret
367

```

THE OUTPUT

Case 1:

If the user wants to Purchas 3 Medical Student Tickets, then our program will calculate the price and ask if they will speak during the conference or not.

```
* Health Conference Ticket System *
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 1

    1. Medical Student for 300 RS
    2. Resident Doctor for 500 RS
    3. Specialist Doctor for 1300 RS
Select 1 , 2, or 3: 1

    How many tickets? 3

    The tickets price until now is 900 RS
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 2

    In the conference,are you going to be a speaker?
Enter Y if yes or enter N if not>> y

    Congratulations! you got 50% discount off

    The tickets price is 450 RS
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 3

    * Thank You *
```

Case 2:

If the user wants to Purchas 2 Resident Doctor Tickets our program will calculate the price and ask if they will speak during the conference.

```
* Health Conference Ticket System *
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 1

    1. Medical Student for 300 RS
    2. Resident Doctor for 500 RS
    3. Specialist Doctor for 1300 RS
Select 1 , 2, or 3: 2

    How many tickets? 2

    The tickets price until now is 1000 RS
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 2

    In the conference,are you going to be a speaker?
Enter Y if yes or enter N if not>> n

    The tickets price is 1000 RS
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 3

    * Thank You *
```

Case 3:

If the user wants to Purchas 3 Specialist Doctor Tickets, it will calculate the price and ask if they will be a speaker.

```
* Health Conference Ticket System *
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 1

    1. Medical Student for 300 RS
    2. Resident Doctor for 500 RS
    3. Specialist Doctor for 1300 RS
Select 1 , 2, or 3: 3

    How many tickets? 3

    The tickets price until now is 3900 RS
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 2

    In the conference,are you going to be a speaker?
Enter Y if yes or enter N if not>> y

    Congratulations! you got 50% discount off

    The tickets price is 1950 RS
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 3

    * Thank You *
```

Case 3:

If the user chooses a number out of the menu.

```
* Health Conference Ticket System *
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 4
You have enter an invalid choise !! TRY AGAIN
```

Case 4:

If the user wants to Purchas 1 Resident Doctor Ticket and also want to Purchas 2 Specialist Doctor Tickets then our program will calculate the price and ask if they will speak during the conference.

```
* Health Conference Ticket System *
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 1

    1. Medical Student for 300 RS
    2. Resident Doctor for 500 RS
    3. Specialist Doctor for 1300 RS
Select 1 , 2, or 3: 2

    How many tickets? 1

    The tickets price until now is 500 RS
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 1

    1. Medical Student for 300 RS
    2. Resident Doctor for 500 RS
    3. Specialist Doctor for 1300 RS
Select 1 , 2, or 3: 3

    How many tickets? 2

    The tickets price until now is 3100 RS
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 2

    In the conference,are you going to be a speaker?

    Enter Y if yes or enter N if not>>> n

    The tickets price is 3100 RS
Please select choice:
1. purchasing tickets
2. Calculate the price
3. Exit
Enter 1 , 2, or 3 >> 3

    * Thank You *
```