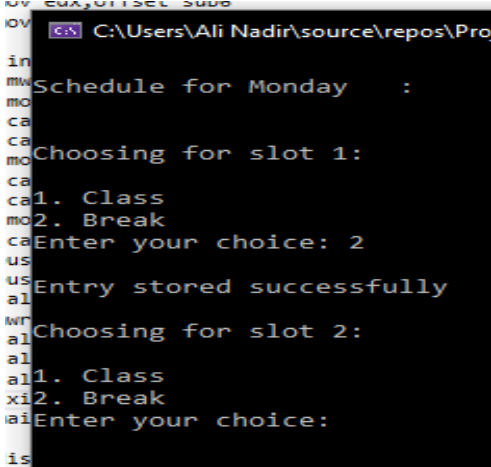


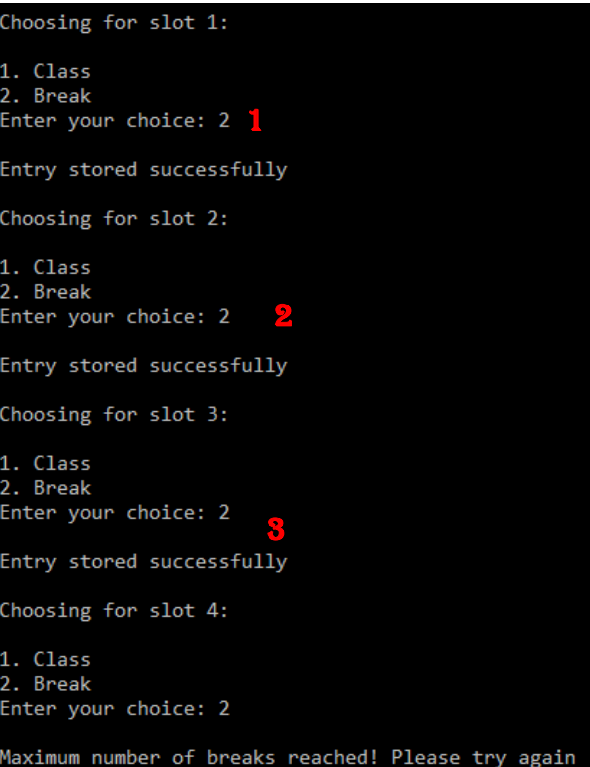
## TESTING TIME AND TIMETABLE FUNCTIONALITY:

- Displaying the generated timetable after user input
  - Input is taken for every day of the week
  - For every day, there are 8 slots as shown below, so input taken 8 times per day
  - Choice of either break or class is given

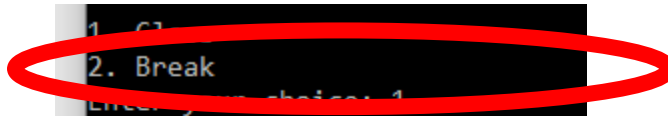
- 

- If class is selected, user enters choice of subject to be added to slot
- If break selected, index manipulated in such a way that table displays “FREE” on console
- For both breaks and a certain subject, a maximum of three breaks and maximum of three slots of the “SAME SUBJECT” are allowed

- **Same BREAK:**

- 

- 
- 



```
1. Class
2. Break
Enter your choice: 1
1. Sub 1
2. Sub 2
3. Sub 3
4. Sub 4
5. Sub 5
6. Sub 6

Enter your choice: 1
```

- 

```
Choosing for slot 5:
1. Class
2. Break
Enter your choice: 1
1. Sub 1
2. Sub 2
3. Sub 3
4. Sub 4
5. Sub 5
6. Sub 6

Enter your choice: 1
Entry stored successfully
```

- 

```
Choosing for slot 6:
1. Class
2. Break
Enter your choice: 1
1. Sub 1
2. Sub 2
3. Sub 3
4. Sub 4
5. Sub 5
6. Sub 6

Enter your choice: 1
Entry stored successfully
```

Choosing for slot 7:

1. Class

2. Break

Enter your choice: 1

1. Sub 1

2. Sub 2

3. Sub 3

4. Sub 4

5. Sub 5

6. Sub 6

Enter your choice: 1

Subject already entered 3 times! Try again

- 
- 
- Once timetable is set for all days, table is then displayed
- For display, ViewTable procedure can be called
- ViewTable procedure offers user 2 options:
  - Display WHOLE time table
  - Display CURRENT class

○ **Output for WHOLE:**

Microsoft Visual Studio Debug Console

SLOTS	Monday	Tuesday	Wednesday	Thursday	Friday
8 - 9	FREE .	FREE .	FREE .	FREE .	Sub 1.
9 - 10	FREE .	FREE .	FREE .	FREE .	Sub 1.
10 - 11	FREE .	FREE .	FREE .	FREE .	Sub 1.
11 - 12	Sub 1.	Sub 1.	Sub 1.	Sub 1.	Sub 2.
12 - 1	Sub 1.	Sub 1.	Sub 1.	Sub 1.	Sub 2.
1 - 2	Sub 1.	Sub 1.	Sub 1.	Sub 1.	FREE .
2 - 3	Sub 2.	Sub 2.	Sub 2.	Sub 2.	FREE .
3 - 4	Sub 2.	Sub 2.	Sub 2.	Sub 2.	FREE .

- **Default output: (if no entries have been made to timetable)**

```
C:\Users\Ali Nadir\source\repos\Project5\Debug\Project5.exe

| SLOTS || Monday | Tuesday | Wednesday | Thursday | Friday |
| 8 - 9 || FREE . | FREE . | FREE . | FREE . | FREE . |
| 9 - 10 || FREE . | FREE . | FREE . | FREE . | FREE . |
| 10 - 11 || FREE . | FREE . | FREE . | FREE . | FREE . |
| 11 - 12 || FREE . | FREE . | FREE . | FREE . | FREE . |
| 12 - 1 || FREE . | FREE . | FREE . | FREE . | FREE . |
| 1 - 2 || FREE . | FREE . | FREE . | FREE . | FREE . |
| 2 - 3 || FREE . | FREE . | FREE . | FREE . | FREE . |
| 3 - 4 || FREE . | FREE . | FREE . | FREE . | FREE . |

Press any key to continue..
```

○

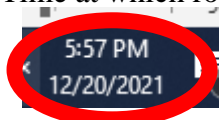
## Output for CURRENT:

1.

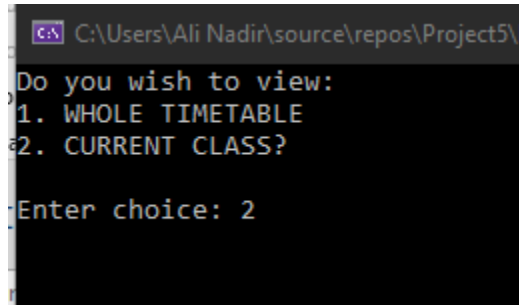
```
Microsoft Visual Studio Debug Console

64 It is past 04:00 PM. The university is now closed.
65
66 Press any key to continue...
67
68 C:\Users\Ali Nadir\source\repos\Project6\Debug\Project6.exe
69 Press any key to close this window . . .
70
71
72
73
74
75
```

○ Time at which routine was tested:



- W
- W
- 2.

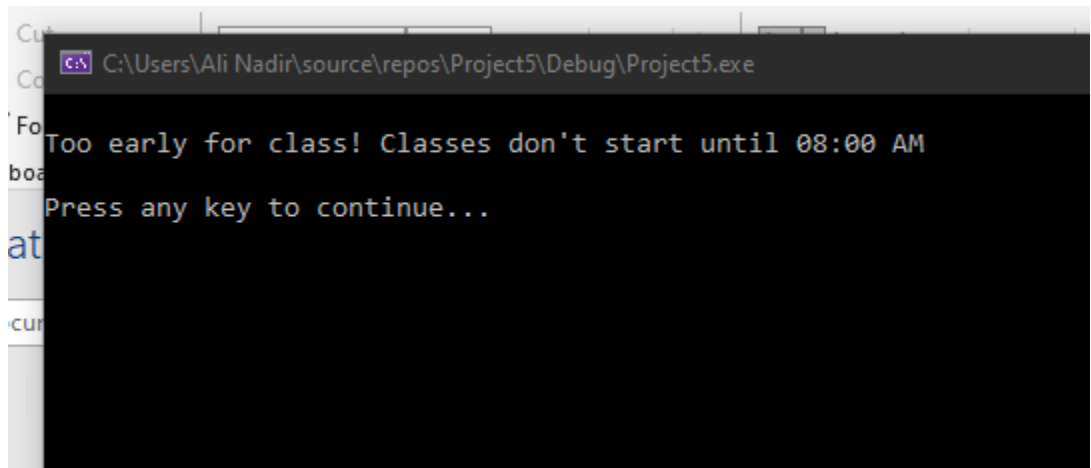


```

C:\Users\Ali Nadir\source\repos\Project5\l
Do you wish to view:
1. WHOLE TIMETABLE
2. CURRENT CLASS?
Enter choice: 2

```

○



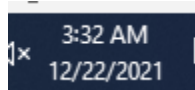
```

C:\Users\Ali Nadir\source\repos\Project5\Debug\Project5.exe
Too early for class! Classes don't start until 08:00 AM
Press any key to continue...

```

○

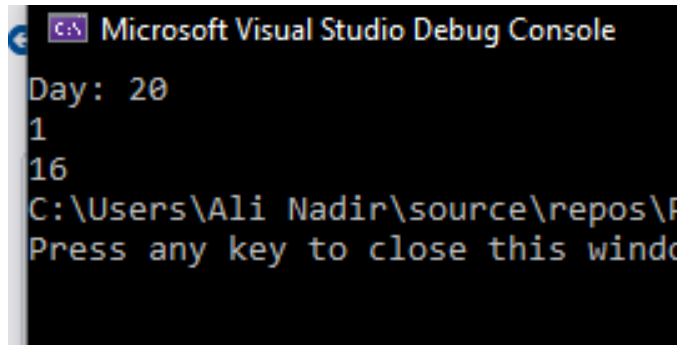
○ Time tested:



○

- **Checking if LPSYSTEMTIME structure from kernel32.lib library is working or not:**
  - First line tests the day number returned by member wDay of structure variable LOCALT
  - Second line shows the day of the week returned by attribute wDayofWeek (1-7) (Tested on Monday so displays 1)

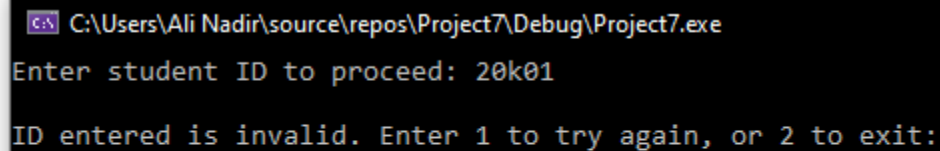
- Third line shows value of structure attribute wHour (Tested between 4PM-5PM so shows 16 since 16 represents 4<sup>th</sup> hour after noon (12+4=16))



```
C:\> Microsoft Visual Studio Debug Console
Day: 20
1
16
C:\Users\Ali Nadir\source\repos\Project7\Debug\Project7.exe
Press any key to close this window
```

## TESTING STUDENT ID VALIDATION:

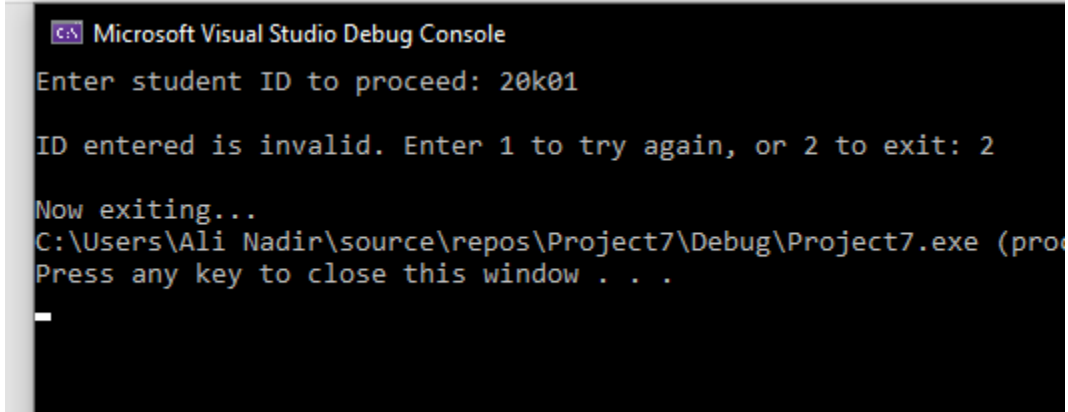
- Invalid input:



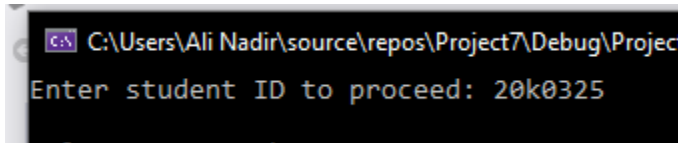
```
C:\Users\Ali Nadir\source\repos\Project7\Debug\Project7.exe
Enter student ID to proceed: 20k01
ID entered is invalid. Enter 1 to try again, or 2 to exit:
```

- 

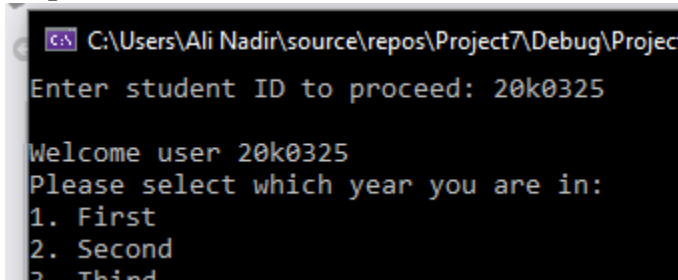
- Output:

- A screenshot of the Microsoft Visual Studio Debug Console. The text displayed is: "Enter student ID to proceed: 20k01", "ID entered is invalid. Enter 1 to try again, or 2 to exit: 2", "Now exiting...", "C:\Users\Ali Nadir\source\repos\Project7\Debug\Project7.exe (proj", and "Press any key to close this window . . .". A cursor is visible on the line "Press any key to close this window . . .".

- **Valid input:**

- A screenshot of the Microsoft Visual Studio Debug Console. The text displayed is: "C:\Users\Ali Nadir\source\repos\Project7\Debug\Project7.exe (proj" and "Enter student ID to proceed: 20k0325".

- **Ouput:**

- A screenshot of the Microsoft Visual Studio Debug Console. The text displayed is: "C:\Users\Ali Nadir\source\repos\Project7\Debug\Project7.exe (proj", "Enter student ID to proceed: 20k0325", "Welcome user 20k0325", "Please select which year you are in:", "1. First", "2. Second", and "3. Third".

## SUBJECT ENTRY:

- Entering 1 as year input





```
Enter your choice: 2
Invalid choice entered.
Enter your choice: 3

Enter your choice: 4

Enter your choice: 5

Enter your choice: 6

Subjects successfully stored. You have chosen:
1. English Composition and Comprehension
2. Applied Physics
3. Islamiyat
4. Programming Fundamentals
5. Calculus
6. Information and Computer Technology

Enter any key to proceed...
```

- 
- Selected subjects displayed, now pause console output with **readchar**

## MARKS ENTRY:

- If transcript not yet generated, allows marks entry
- Else:

```
C:\Users\Ali Nadi\source\repos\Project7\Debug\Project7.exe
Please select one of the following:
1. Display selected subjects
2. Enter marks for a subject
3. View academic progress
4. Generate Fee Challan
5. Generate Transcript
6. Set timetable
7. View timetable
8. Logout
2

Marks have now been locked in the system. Can not proceed
Press any key to continue.
```

- 
- Selecting subject no. 2 for entry:
- Entering invalid marks (Assignments are marked out of 20)

```
Select subject whose marks are to be entered:
```

1. English Composition and Comprehension
2. Applied Physics
3. Islamiyat
4. Programming Fundamentals
5. Calculus
6. Information and Computer Technology

```
Enter choice: 2
```

```
Enter assignment 1 marks: 23
```

```
Incorrect entry. Please enter marks again.
```

```
Enter assignment 1 marks: _
```

- 
- Prompted for correct entry

```
Enter assignment 1 marks: 12
```

```
Enter assignment 2 marks: 20
```

```
Enter Mid 1 marks: 40
```

```
Enter Mid 2 marks: 36
```

```
Enter Final Exam marks: 77
```

```
Chosen subject's marks successfully entered.  
Press any key to continue.
```

- 
- Redirect to menu after marks have been successfully entered

- If user chooses to reenter marks for an already recorded subject:
  - Ask for confirmation to overwrite marks

○

```
Select subject whose marks are to be entered:
1. English Composition and Comprehension
2. Applied Physics
3. Islamiyat
4. Programming Fundamentals
5. Calculus
6. Information and Computer Technology

Enter choice: 2

Chosen subject's marks have already been entered.
Do you wish to overwrite subject marks? Enter 1 if yes, else for no:
```

○

○ Invalid Mid 1/2 marks (mustn't be greater than 40)

```
Enter Mid 2 marks: 42

Incorrect entry. Please enter marks again.
```

○

○ Invalid final exam marks (mustn't be greater than 100)

```
Enter Mid 1 marks: 35

Enter Mid 2 marks: 37

Enter Final Exam marks: 101

Incorrect entry. Please enter marks again.
```

## VIEWING RECORDS:

- Viewing record for recorded subject: (VALID)

```
Select subject whose record you wish to view:
1. English Composition and Comprehension
2. Applied Physics
3. Islamiyat
4. Programming Fundamentals
5. Calculus
6. Information and Computer Technology

Enter choice: 1
```

```
|| Assignment 1 | Assignment 2 | Mid 1 | Mid 2 | Final ||
|| 15 | 15 | 35 | 37 | 88 ||
Press any key to view weightage breakdown.
|| Assignment 1 | Assignment 2 | Mid 1 | Mid 2 | Final ||
```

```
5. Calculus
6. Information and Computer Technology

|| Assignment 1 | Assignment 2 | Mid 1 | Mid 2 | Final ||
|| 15 | 15 | 35 | 37 | 88 ||
Press any key to view weightage breakdown.
|| Assignment 1 | Assignment 2 | Mid 1 | Mid 2 | Final ||
|| 7.0 % | 7.0 % | 13.0 % | 13.0 % | 44.0 % ||
Grand Total for subject English Composition and Comprehension is: 84
Overall grade: A
Subject GPA: 4
Press any key to continue...
```

- Invalid choice (subject not recorded yet)

```

Select subject whose record you wish to view:
1. English Composition and Comprehension
2. Applied Physics
3. Islamiyat
4. Programming Fundamentals
5. Calculus
6. Information and Computer Technology

Enter choice: 5

Error: Marks have not been completely entered. Try again later.

Press any key to continue...

```

- 
- **GENERATING TRANSCRIPT:**
- Valid output:
  - Ask user for confirmation to lock in grades and proceed with generation

```

Warning: Generating transcript will lock your
grades in the system. Enter 1 to continue, any
other key to return:

```

```

Now generating your transcript...

```

```

TRANSCRIPT FOR STUDENT 20k0325
YEAR 1

```

Subject	GPA	Grade
Applied Physics	4.00	A/+
Islamiyat	4.00	A/+
Programming Fundamentals	4.00	A/+
Calculus	3.00	A/B
Information and Computer Technology	4.00	A/+

```

Over GPA for this academic year (SGPA) is: 3

```

```

Transcript Generated.
Press any key to continue...

```

Assignment 1	Assignment 2	Mid 1	Mid 2	Final
7.0 %	7.0 %	13.0 %	13.0 %	44.0 %

- Output upon invalidity:

```
Please select one of the following:
1. Display selected subjects
2. Enter marks for a subject
3. View academic progress
4. Generate Fee Challan
5. Generate Transcript
6. Set timetable
7. View timetable
8. Logout
5

Error. Could not generate transcript. Marks not entered completely, GPA not yet calculated, or Fee challan not generated.
Press any key to continue...
```

- 
- Requires:
  - Marks to be entered completely
  - GPA to be generated for all subjects (by viewing records at least once)
  - Fee Challan to be generated

## GENERATING FEE CHALLAN:

- Prompting user to enter credit hours for each subject:

- 

```
Enter credit hours for English Composition and Comprehension : 3
Enter credit hours for Applied Physics                      : 3
Enter credit hours for Islamiyat                            : 2
Enter credit hours for Programming Fundamentals              : 2
Enter credit hours for Calculus                             : 3
Enter credit hours for Information and Computer Technology  : 3
```

- 

- Generated fee challan:

- 

```
*****FEE CHALLAN FOR USER 20k0325*****
For English Composition and Comprehension :
Credit Hours: 3
Cost per Credit Hour: PKR 5000

For Applied Physics :
Credit Hours: 3
Cost per Credit Hour: PKR 5000

For Islamiyat :
Credit Hours: 2
Cost per Credit Hour: PKR 5000

For Programming Fundamentals :
Credit Hours: 2
Cost per Credit Hour: PKR 5000

For Calculus :
Credit Hours: 3
Cost per Credit Hour: PKR 5000

For Information and Computer Technology :
Credit Hours: 3
Cost per Credit Hour: PKR 5000
*****Total charges due for the 6 chosen subjects: PKR 80000*****
Press any key to continue...
```

- 

- Total displayed is PKR 80000 for the term

- Cost for each year:

- 1<sup>st</sup> PKR 5000
- 2<sup>nd</sup> PKR 7500
- 3<sup>rd</sup> PKR 10000