

Digital Logic & Circuit Final Assessment Presentation (20 Points)

QUESTION: Design a synchronous binary irregular counter with the following count sequence based upon your unique 5-digit middle portion of your I.D.:

$$A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow A$$

Where XX-ABCDE-Y stands as your ID.

XX stands for the year (16/17/18) and Y stands for the semester (1/2/3) you got enrolled in AIUB.

Both XX and Y is irrelevant in your design and is not required in any part of your design.

The middle portion of your I.D is a 5 digit unique number that is different for all students. Here in this design the **ABCDE** represents the unique 5 digits of your I.D. So the count sequence is based upon the middle unique portion of your I.D.

For Example:

Your student I.D is 17-34169-1. If we put the middle unique 5 digit (34169) in the above sequence (ABCDE) then the count sequence should look like this

$$A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow A = 3 \rightarrow 4 \rightarrow 1 \rightarrow 6 \rightarrow 9 \rightarrow 3$$

If your I.D has repeating numbers:

If your I.D has repeating numbers, make sure after addition of 1, 2, 3, or any value, to repeating digits in your system, the values become unique 5 digits with no repeating numbers.

For Example:

Your student I.D is 17-34334-1. Now the middle 5-digit unique numbers have, 3 repeated 2 times and 4 repeated one time. So your original sequence should look like this.

$$3 \rightarrow 4 \rightarrow 3 \rightarrow 3 \rightarrow 4 \rightarrow 3 = A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow A$$

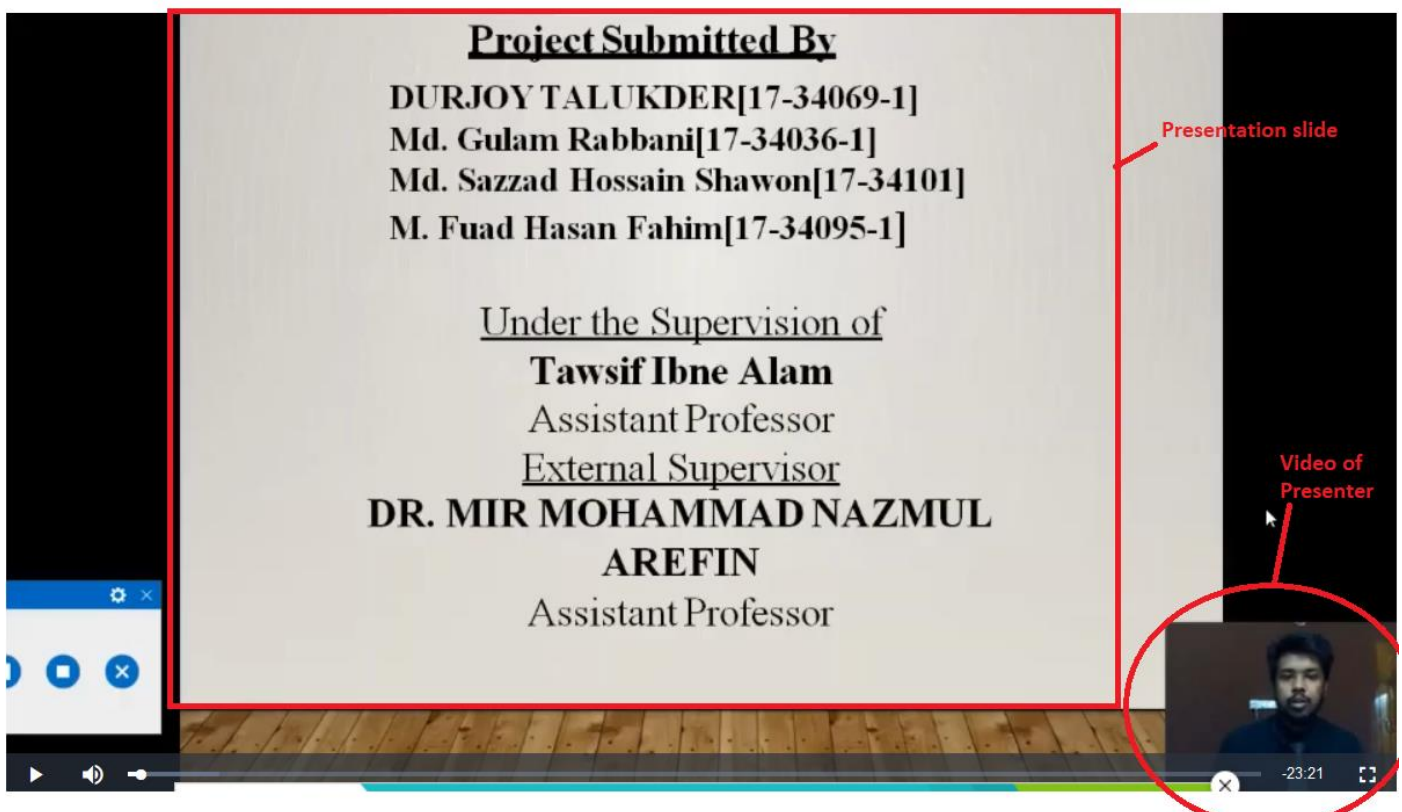
So I have added 5 with digit C, 2 with digit D and 3 with digit E to get the new sequence, with no repeating digits, as shown below.

$$A \rightarrow B \rightarrow C+5 \rightarrow D+2 \rightarrow E+3 \rightarrow A = 3 \rightarrow 4 \rightarrow 8 \rightarrow 5 \rightarrow 7 \rightarrow 3$$

So your new sequence can be $3 \rightarrow 4 \rightarrow 8 \rightarrow 5 \rightarrow 7 \rightarrow 3$ and should be used for designing the counter.

Points to Remember:

1. Double check that your sequence is unique before you start your design.
2. Your Design must include all the steps mentioned in the class lecture and following the sequence. Failure to do so will cause you to lose marks.
3. You will have to show the design as a presentation of 5 minutes in a video and upload it in the link provided (Separate link will be posted shortly in your classroom).
4. During presentation your voice should be clear, and your face should be visible in one corner of the video. I should be able to see you presenting as shown in the picture below.



5. Do not exceed the size of your video beyond 50 MB. You will not be able to upload if that happens. SO MAX FILE SIZE IS 50 MB.
6. If you just read out your slides, you will lose mark and will be penalized.
7. Your presentation file should be named with your full I.D.
8. You will need a GOOGLE/GMAIL account to upload your presentation. Please make one if you do not have any.

[Link will be posted in class room](#)

Link will automatically close on Monday 19th July, 2021 at 11:01 PM Night