SCHOOL TIMETABLE GENERATOR

INSTRUCTION MANUAL
Version: 4.0

Cert*it*ude Infotech

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Table of Contents

I.   Step by Step Directions for Utility User

1. ~~Setup Class/Teacher timetables and CW (ClassWise) templates with help of Admin~~. (Not Available in Trial Version)
2. Select the Category "**TimeTable**" in cell "**C8**" on sheet "**Control Centre**".
3. If "Staff Allocation" Sheet is not visible, then run "Generate Timetables" utility with the tag "None". It will create the required sheet with 1 class block.
4. ~~On the "Staff Allocation" sheet, run "Insert/Delete" to generate/delete class blocks as per your requirements.~~ (Not Available in Trial Version)
5. Enter your master Data (class/subject/teacher mapping) in the "Staff Allocation" sheet.
6. Please ensure that the total number of periods at the bottom of each class block matches the number of weekly periods available for Class/Teacher timetables. These numbers should also match with the respective class on the "CW Period Allocation" sheet (once generated).
7. Once your Master Data is in place, run "Generate CW/TW/TT Placeholders". This will generate the ClassWise data and create Class/Teacher timetables placeholders.
8. Run "Reset Data" to clear "CW Period Allotment sheets".
9. Enter data for Shared Teachers from other domains:
    a. Enter the shared teacher's timetable from another domain in their timetable placeholder. It will assist in teacher substitutions by giving correct information about their free periods and blocking them so that no current domain period is assigned simultaneously.
    b. In case other domain TT is not available and only periods allocated to their domain are available then enter a space " " in the periods (without the quotes) that are blocked by other domains. You can enter any other word like "Blocked" also but single space is preferred as it will keep their timetable clean. This will provide correct free period details.
    c. The above task should preferably be done before generating timetables to avoid double allocation of period.
10. Multiple classes with a single teacher in the same identified period, e.g., Sports:
    a. Enter only the subject name in identified periods for that teacher's timetable.
    b. Similarly, enter only the subject name in all class Timetables impacted.
    c. In the "Staff Allocation" sheet, reduce the number of periods by the impacted number of periods for each Class/subject row.
    d. Appropriately, in the "CW Period Allotment" sheet, reduce the number of periods for that **day** for that class (*Available right after the class name row*).
    e. Repeat the above process for all applicable, similar cases.
11. Subject period to be **Blocked** for specific period:
    a. Go to "Class TimeTables".
    b. Enter the details in the format "Subject, (Alt-Enter), Teacher Name" in the identified class/day/period. *Alt-Enter: Press Alt Key and then Press Enter key to split line.*

c. For **Hard Block (Must have:** fixed period)**,** i.e., for no shuffling during TT generation process enter "~~" in front of "Subject, (Alt-Enter), Teacher Name" like enter "~~Subject, (Alt-Enter), Teacher Name" in the identified class/day/period. This can also be done by running the Utility ➔ Add ~~ to TT.

d. For **Soft Block (**Good to Have)**,** enter the period details without "~~". The utility tries to keep them in position but can relocate them during timetable generation process if absolutely necessary.

12. Once your master data is in place, and all relevant customizations are complete, save this excel with 1_MD_* extension for backup *where * stands for the sheet name*. In case of any errors, you can revert to this sheet.

13. *Before proceeding, please make sure that your master data is complete. Any addition/deletion of subject/class/teacher may require* **rerunning** *the whole process again.*

14. ***Make a copy of the above 1_MD_* sheet as 2_CW_* for further processing.***

15. In 2_CW_* sheet, run "Generate CW/TW/TT Placeholders". This will regenerate the ClassWise data and update the Class/Teacher timetable's placeholders.

16. Please validate the "CW Period Allotment" and "TW Period Allotment" sheets for any errors (highlighted in **Red**). Fix these errors by exchanging periods in the "CW Period Allotment" sheet.

17. Check "CW Period Allotment" for any high numbers in any day column. If numbers are more than required, shuffle the numbers across the week and balance them by moving them appropriately from other subject rows.

18. Save the 2_CW_* sheet once all such modifications are complete.

19. Rerun "Generate CW/TW/TT Placeholders". This will revalidate and regenerate the ClassWise data.

20. If there are any errors, fix errors and repeat the above process till there are no errors.

21. If there are no more errors and **NO further changes** are required, save the spreadsheet.

22. ***Make a copy of the above 2_CW_* sheet as 3_TT_* for further processing.***

23. In the 3_TT_* sheet, you can run "Generate Timetables".

24. In case of errors, go back to 2_CW_* and make appropriate fixes in the "CW Period Allotment" sheet. Save it and again and make a copy of it as 3_TT_*. You may overwrite the earlier version.

25. Repeat the above process till there are no other errors and you are satisfied with the timetables.

26. Once you receive success message, please validate "Class Timetables". If you still see any blank periods then rerun "Generate Timetables" and these periods will be correctly filled.

27. If any changes are made to Master Data then complete process will have to be repeated for 1_MD_*, 2_CW_* and 3_TT_*. Similarly, if changes are made to CW data then complete process from creation of file will have to be repeated for 2_CW_* and 3_TT_*.

***The 1_MD_*, 2_CW_* and 3_TT_* are required to avoid redoing all the work again in case the utility has to rerun to incorporate the changes or fixes for errors.

II. Admin Instructions

   1. (Not Available in Trial Version)

III.   School Timetable General Instructions

A.   Opening/Running the Utility:

1. While opening the file Please enable macros.
2. If required, then provide permission for creation/downloading of supporting files and folder.

B.   Control Centre Function Details:

1. Select the "**Admin**" in Category cell "C8".
    a. **Admin Lock/Unlock**
        i.   ~~Initial default Password is _____.~~ (Not Available in Trial Version)
        ii. Required to make changes to templates.
    b. **Change Admin Password**
        i.   Changes default admin password to another value.
2. Select the "**TimeTable**" in Category cell "C8".
    a. Select the "**TAG**" that needs to be added in timetable along with subject/class/teacher details.
        i.   None – Regular Timetables. No additional tag is to be added.
        ii. Offline/Online/Hybrid -Tag to be added as per requirement.
    b. **Reset Timetables**
        i.   Clears all Class/Teacher Timetables.
    c. **Reset Data**
        i.   Clears TAG specific ClassWise sheets and deletes all other sheets.
        ii.   Requires additional confirmation to clear Class/Teacher Timetables.
        iii. It does not delete/clear Master Data.
    d. **Delete Data**
        i.   Control Centre, Setup and templates are never deleted.
        ii.   All TAG specific sheets are deleted for selected TAG.
        iii. If Tag selected is "None" then all Tag specific sheets are also deleted.
        iv.   Additional user confirmation is required for deletion of Master data '**Staff Allocation**' and Timetables sheets.
        v.   Timetables sheets will be deleted only if the Tag selected is "None".

        *** *Please be careful to back up your master data before using this command.*

    e. **Validate CW/TW**
        i.   If a single timetable is required with multiple tags, i.e., Online/Offline/Hybrid then this feature comes handy in validating ClassWise/TeacherWise data.
        ii.   It combines the TW data for two Tags and gives a consolidated view. Any number higher then allowed values is highlighted in Red and can be corrected by making appropriate changes in ClassWise data.
        iii. The utility can be run again to revalidate updates.

iv. The report sheet is automatically deleted during the next execution of any utility.

f. Generate CW/TW/TT Placeholders

i. Generates ClassWise & TeacherWise period Allotments and the empty timetable sheets with Class/Teacher Names. If any data in CW period allocation is pre-populated then it is considered during calculations.

ii. If there are any changes to Master data, then "Reset Data" is required before running the utility again.

iii. With every run, Class Name, Subject, Teacher and no. of periods are updated. In case of any difference, the values are adjusted appropriately.

iv. After creation of ClassWise data, it can be validated and adjusted in case of any discrepancy.

v. CW sheet will have to be revisited and this function will require to be rerun, if any error is generated during timetable generation.

g. Generate Timetables

i. Create all timetables.

ii. In case of no customizations, it takes you from Staff Allocation to final verified Timetables in a single click.

iii. In case of Multiple Tags, first run it for the tag which is required during the first half of day and then second tag timetables can be generated.

iv. ClassWise data may change due to shuffling of periods during timetable generation.

3. Select the "Utility" in Category cell "C8".

a. Split Timetables

i. Sometimes, it is required to have each class/teacher timetables on different sheets. Executing this option creates two Excels in current directory as Class_Timetables.xlsm and Teacher_TimeTables.xlsm.

ii. Open the new files and the timetables will be available in different sheets.

b. Add ~~ to TT

i. Running this utility, adds "~~" to all periods in timetables containing data to mark them as hard block. These periods will not be shuffled during timetable generation process.

c. Remove ~~ from TT

i. Running this utility, removes "~~" marks from all timetables.

d. TimeTable Color Change

i. Running this utility toggles, the time tables color from **Color** to **Black & White** and vice Versa.

e. Import Data

i. In case the utility user interface is updated, run this command from new utility version file to import all your data from previous version. It mitigates the manual transition to new utility.

C.   Staff Allocation Function Details: (Not Available in Trial Version)
   a.   As a default, one set of master data table is provided and two in trial version. ~~Additional class tables can be inserted/deleted from the option provided at the top of the sheet.~~
      i.   ~~**Delete** – Deletes last Master data block. If only one table block is available then it will not be deleted.~~
      ii. ~~**Insert** - Inserts additional master data sheet at the end.~~

D.   Setup sheet Function Details: (Not Available in Trial Version)
   a.   ~~**Verify Setup** – Once admin completes initial setup than this command can be used to validate setup.~~
   b.   ~~**Revalidate Subscription** – This command can be used to revalidate subscription status. Internet needs to be connected to run this command.~~

E.   Macros sheet Function Details:
   a.   As a default, if the macros are disabled, then this sheet will be visible. Once macros are enabled than this sheet will be hidden and regular utility sheets will be visible.
   b.   **Activate utility** - If macros are enabled and this sheet is still visible, then the command at bottom of the sheet can be used to show the utility sheets.

F.   Subscription sheet Function Details:
   a.   This sheet will be enabled if the subscription status has expired.
   b.   **Revalidate Subscription** – This command can be used to revalidate subscription status once the subscription is renewed by reaching out to support. Internet needs to be connected to run this command.

IV. Worksheet Information

A. Control Centre:
a. Provides utility functions to generate and manage timetables.
b. Provides generic instructions.

B. Staff Allocation sheet:
a. This is the Master Data sheet.
b. If Tag specific master datasheet is not available then it is generated for creating Master data by running "Generate Timetables" utility.
c. ~~If data is being copied from another location, then paste it as values only~~. (Copy function is not Available in Trial Version)
d. This sheet gives the mapping of Class, subjects, number of periods per subject per week and the teacher associated with it.
e. The subjects are ordered as per preference. For Example, if you want 'English' early in the day then keep it first.
f. Please keep subject names as different from each other as feasible, *i.e., please avoid first Subject: English and Second Subject: English Literature*. For the current example, you can have them as *English Language* and *English Literature*.
g. Similarly, please avoid it for Teacher Names.
h. Please do not use "**/**" symbol anywhere in Class, Subject or Teacher names.

C. CW (ClassWise) period allotment sheet:
a. Displays the distribution of subject periods across the week. If a particular period is required on a specific day, then that value should be appropriately set before generating the sheet else appropriate balancing will be required before generating timetables.
b. This sheet will have to be revisited in case of any error that are generated during timetable creation.
c. Process for creating CW sheet for Multiple tags in single TT
   i. Generate CW/TW/TT Placeholders for First Tag
   ii. Reset Sheets for this Tag.
   iii. Update total number of periods for each class in Tag specific CW sheet. This should be in sync with tag specific Staff Allocation sheet.
   iv. Rerun Generate CW/TW/TT Placeholders for First Tag
   v. Check if there are any errors generated in error_log (created only if there are any errors) sheet. In case of errors, fix them by changing appropriate rows in CW sheet.
   vi. Repeat the above process for the second Tag.
   vii. The sum total number of periods for Tag-1 and Tag-2 should match the total number of subject periods available.
   viii. The number and names of classes should match exactly for both tags.
   ix. The number and names of teachers should match exactly for both tags.

x.   Generate the TT for the Tags as required.

D.   **TW (TeacherWise) period allotment sheet:**
   a.   This sheet provides weekly period allocation load details for teachers.
   b.   If the value is more than the allowed periods on a particular day then it is highlighted in Red.
   c.   Gives insight into the teacher loading matrices. If Required, ClassWise can be updated to make relevant changes.

E.   **Class/Teacher Timetable sheets:**
   a.   *Do not change timetable format on these sheets. If required, reach out to your admin for help to update the templates and then "Delete Data" before proceeding.*
   b.   Cut option is disabled across the utility.
   c.   Normally the Timetables will be auto generated. If it is required to have specific periods at certain times then those details can be pre-populated appropriately in the class timetable. The utility will try to keep them there, but in case of conflicts, it can move them to another location.
   d.   If a Subject, Alt-Enter, Teacher Name is entered only in **class**, then an appropriate entry will be made in corresponding teacher timetable.
   e.   In case of domain shared teachers, a timetable from the first domain can be copied to their timetable in second domain before generating timetables. The utility will consider the entries and appropriately adjust the current timetable.
   f.   In case of "tag" specific timetables, i.e., Online/Offline timetables. First create timetables with one "tag" and then rerun the utility with another "tag". The total number of periods with various tags should not exceed the total number of periods available else error log will be generated and all periods will not show up in timetables.
   g.   The timetables are color coded automatically. Class Timetables are color coded based on subject and teacher timetables coding is based on class. A maximum of 50 subjects/class will be color coded. Any subject/class exceeding this limit will default to regular color. If Required you can change the color to B&W by running the utility available on "Control Centre".

F.   **Teacher free period sheet:**
   a.   This sheet is helpful while doing substitution.
   b.   Displays the list of free periods details per day for all teachers.
   c.   If a teacher is absent, then the class, day and the period can be entered on sheet and the list of teachers who are available will be highlighted.
   d.   After verification, appropriate substitutions can be communicated.

G.   TW Period Allotment (Combined) sheet:
   a.   This sheet combines the TW data for two Tags and gives a consolidated view. Any number higher then allowed values is highlighted in Red and can be corrected by making appropriate changes in ClassWise data.
   b.   The report sheet is automatically deleted during the next execution of any utility.

H.   Setup:
   a.   This is a hidden sheet.
   b.   This is a required sheet for managing the timetable structure.
   c.   Number of periods is equal to total actual subject period for the day.
   d.   If first period is different then it will be automatically marked as 0 in timetables.
   e.   Other details are to be entered as per Timetable structure.

I.   Templates:
   a.   These are hidden sheets which are used for generating various datasheets.

J.   error_log:
   a.   If there are any errors during calculations and the program failed to allocate any subject then error_log sheet is generated.
   b.   It provides details in the format class/Subject/Teacher/Weekday.
   c.   In order to resolve this error, "CW period allotment" needs to be revisited and the relevant periods are to be exchanged with another teacher with availability for same day.
   d.   After all errors have been cleared, the timetable is to be reset and then regenerated.
   e.   This activity is to be repeated till there are no more errors, i.e., the "error_log" sheet is not created.
   f.   This sheet is deleted at the next execution of any utility.