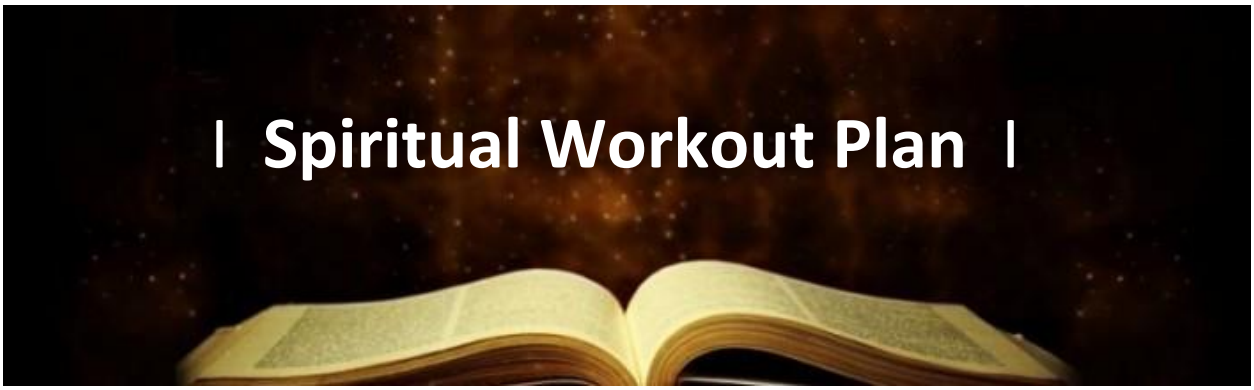


By Corbin Stott

"We live in a time when the scriptures and the words of modern-day prophets are more easily accessible than at any time in the history of the world. However, it is our privilege and duty, and it is our responsibility to reach out and grasp their teachings." –Dieter F. Uchtdorf

Executive Summary

Over the past few months, and throughout other times in my life, I have found that my personal scripture study becomes routine and less meaningful when I do the same thing each and every day. Despite my best efforts, I have yet to find an efficient way to get out of a monotonous study rut once I am in it. So, in order to better follow Elder Uchtdorf's counsel and grasp the teachings of the scriptures, I have created a spiritual workout plan.

My spiritual workout plan application generates a series of tasks for the user to perform each day in order to keep their gospel study interesting and dynamic. This idea came to me this past conference when I felt like I needed to create an application that resembled a gym workout app I have been using to find new workouts and record my progress. Likewise, the spiritual application will generate new 'workouts' and record the users progress in a graphic interface.

Some of the tasks the user will be prompted to perform include:

- Reading an article from the most recent issue of the Ensign
- A daily challenge to perform a random acts of service
- A scripture of the day
- A weekly topic to study in True to the Faith
- A weekly challenge to improve self-discipline such as "don't eat sugar for a week"
- Record a daily journal entry
- Etc.

Implementation Documentation

This section will include (1) a textual description of the actions performed in each phase of implementation and (2) a visual walkthrough of the application user-experience.

The main phases of implementation were as follows:

- Data
    - Find data
    - Scrub data

- Arrays
- User forms
    - Create forms
    - Link forms
    - Add functionality
- Customize the ribbon

Data Phase

Find Data

It was easy to find datasets for the King James Version of the Bible from a simple Google search. However, because I was working with the LDS canon, it was more difficult to find datasets with the Book of Mormon, Doctrine and Covenants, and Pearl of Great Price. After searching, I found an .epub file with the triple combination from the lds.org website and was able to convert it to .xls format. The content for the True to the Faith, Act of Kindness, and Discipline Challenge libraries were pulled from various websites and pasted into excel.

Scrub Data

Once the .epub converted to .xls file was uploaded to a workbook I created an array to scrub the data. The chapters were not clearly delimited so this step took some time. Eventually, I was able to write a loop detailed enough to only extract the data I was interested in and place it in an array. The Bible, True to the Faith, Act of Kindness, and Discipline Challenge datasets were less complex and did not require an array to scrub and prepare the data.

Arrays

Because each Book of Mormon chapter was on its own worksheet, I created an array that scrubbed the needed data from the chapter and stored the chapter info in a separate array before clearing its memory and moving to the next worksheet. This array looped throughout all of the Book of Mormon chapters.

I also built a series of arrays to better store and access the Old Testament, New Testament, Doctrine and Covenants, and Pearl of Great Price. These arrays are declared at the project level because they are used in various user forms as well as ribbon button options. The True to the Faith, Act of Kindness, and Discipline Challenge libraries were also stored in arrays and were declared at the procedure level.

The last array that I created was an array used to store individual Ensign Articles from the current month's addition that were pulled from the lds.org website. Additional detail of this process will be included in the User Forms section below.

User Forms

Because this program is intended to be used by anyone and everyone, I wanted to eliminate any possible sources of confusion or distraction for the user. Because of this, the only user-facing elements of the application are the user forms. The individual will never see a worksheet, table, or any library/data set. In order to make this happen I went through the following steps: create the user form, link forms, add functionality.

Create User Forms

Each user form was created with a typical scripture study in mind. The user will open the workbook and be greeted with the Study Plan Homepage where they can click a button to start the program. I elected to prompt the forms instead of having them open with the workbook because the user may want to select some of the options on the ribbon before starting their study session for the day.

Each user form has been given a light grey background in order to not distract from the contents of the forms. The headings within each form have been set to 14 point 'Constantia' font, the text within each drop down menu and text box have been set to 12 point 'Calibri' font, and the command buttons, option boxes, and option buttons have been set at 8 point Tahoma font. The consistency across all user forms creates a clean and unified look for the application.

Link Forms

Once the forms were created and formatted I went through and linked each of them to provide a seamless user experience. I used the '.show' '.hide' methods instead of '.load' and '.unload' because I wanted to allow the user to go back and forth to the different forms throughout the study session before saving any of the data.

Once the forms were linked to each other, I began to link them to their respective datasets within the workbook from which they would be pulling and recording data. Each form is linked to at least one and as many as five different worksheets that are 'very hidden' from the user. I elected to use 'very hidden' because the user will have no need to go in and edit the data. If they are proficient enough in Excel to unhide and edit the data themselves then that is okay. I just don't want any accidental changes. All edits the user would ever want to make (such as changing a past journal entry) can be made on the user forms themselves.

Add Functionality

This was, by far, the hardest part of the project. In the "learning and conceptual difficulties" section below, I will detail some of the problems I encountered. To start, I added the functionality that I was familiar with such as changing the value of a text box based on the user's selection from a combo box menu. I also operationalized all of the command buttons such as 'exit', 'save', 'next', and 'generate new'. I also put in a few safeguards preventing the user from saving without having input the minutes studied or providing a response to a key question.

Once these functionalities were in place, I was tasked with creating and displaying a chart in a user form. I was able to use a search function with a declared range to find the row that corresponded with today's date and then create a chart of all the previously recorded study data. Once the charts were created, I saved them to a temporary file in .gif format and then loaded them as pictures to the image boxes on a multipage user form.

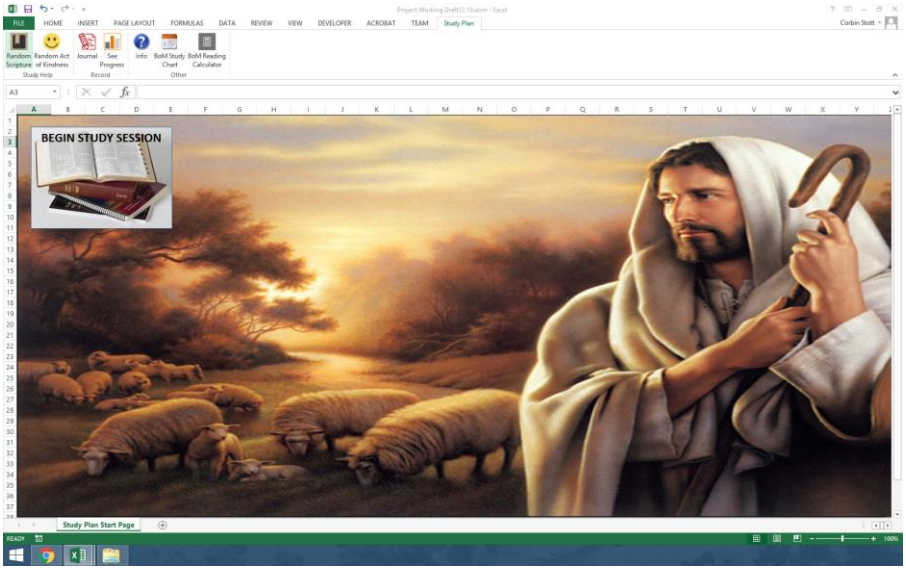
The other functionality that took extra time and brain power was connecting a search for the most recent Ensign edition to a user form and directly accessing one of the issues articles. This was accomplished searching the .html of the webpage using Doctor Allen's agent and then splicing the URL of each article from the .html to input into an array and then randomly select for the user to be able to connect to and read. More detail about this is found below.

Customize the Ribbon

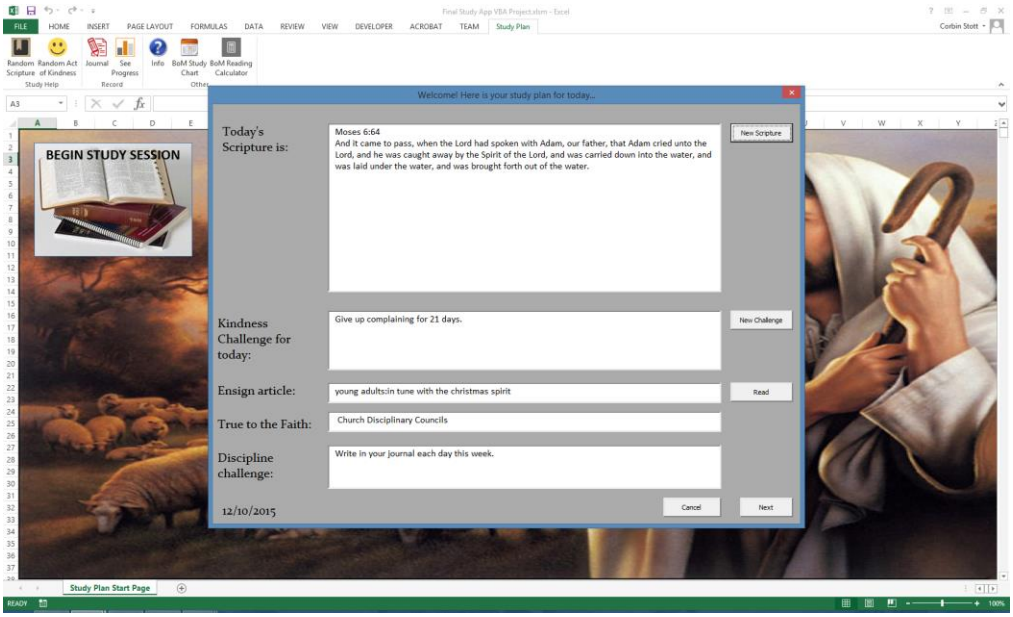
After all of the functionality was built into the user forms and the program was up and running, I added a new tab and several buttons to the workbook ribbon. All of the buttons perform actions that are separate from the study program outlined above. I customized the ribbon using the 'Custom UI Editor' created by Ronde Bruin. A detailed explanation of the ribbon's functionality is found in the section below.

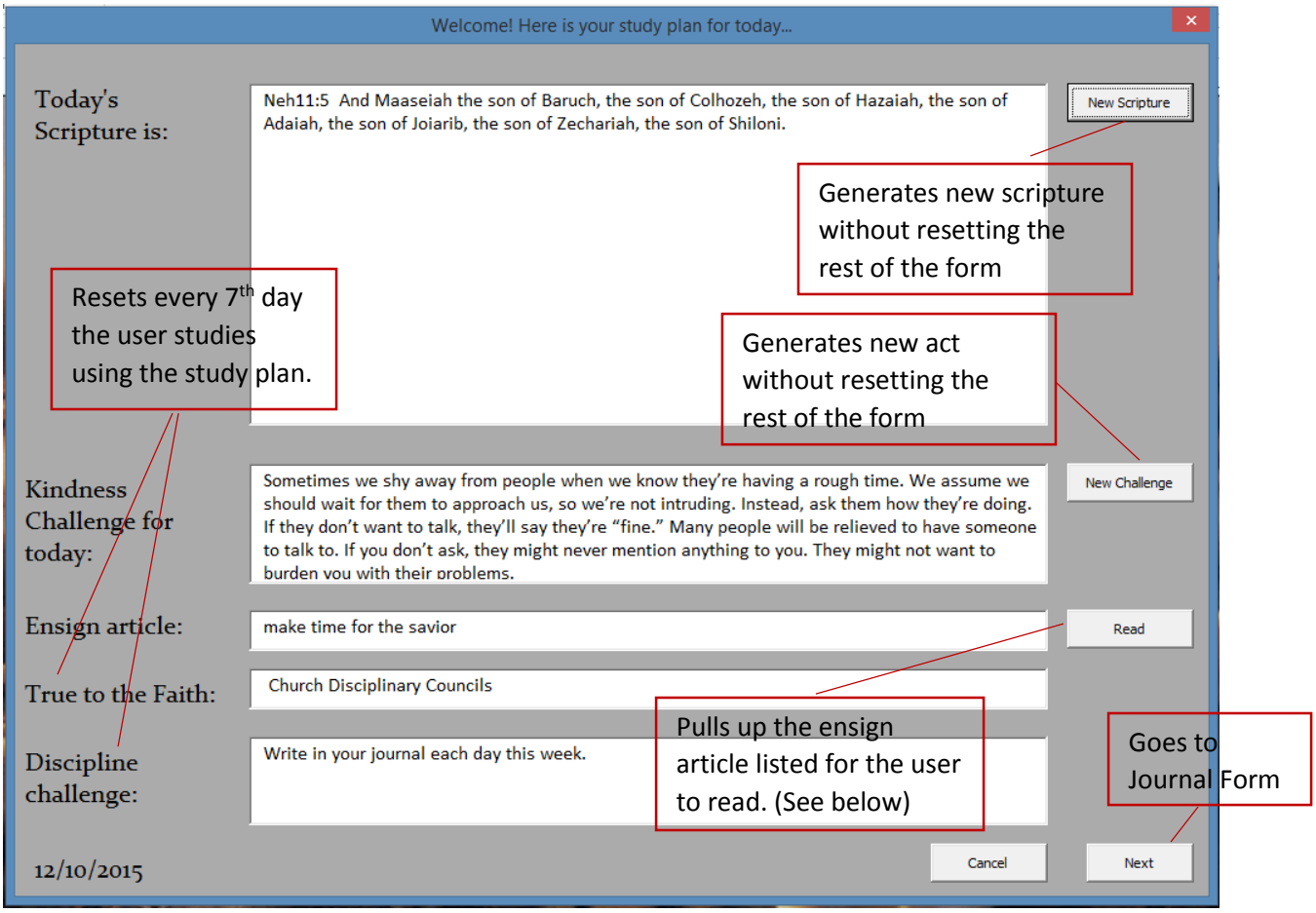
Visual Walkthrough of Application

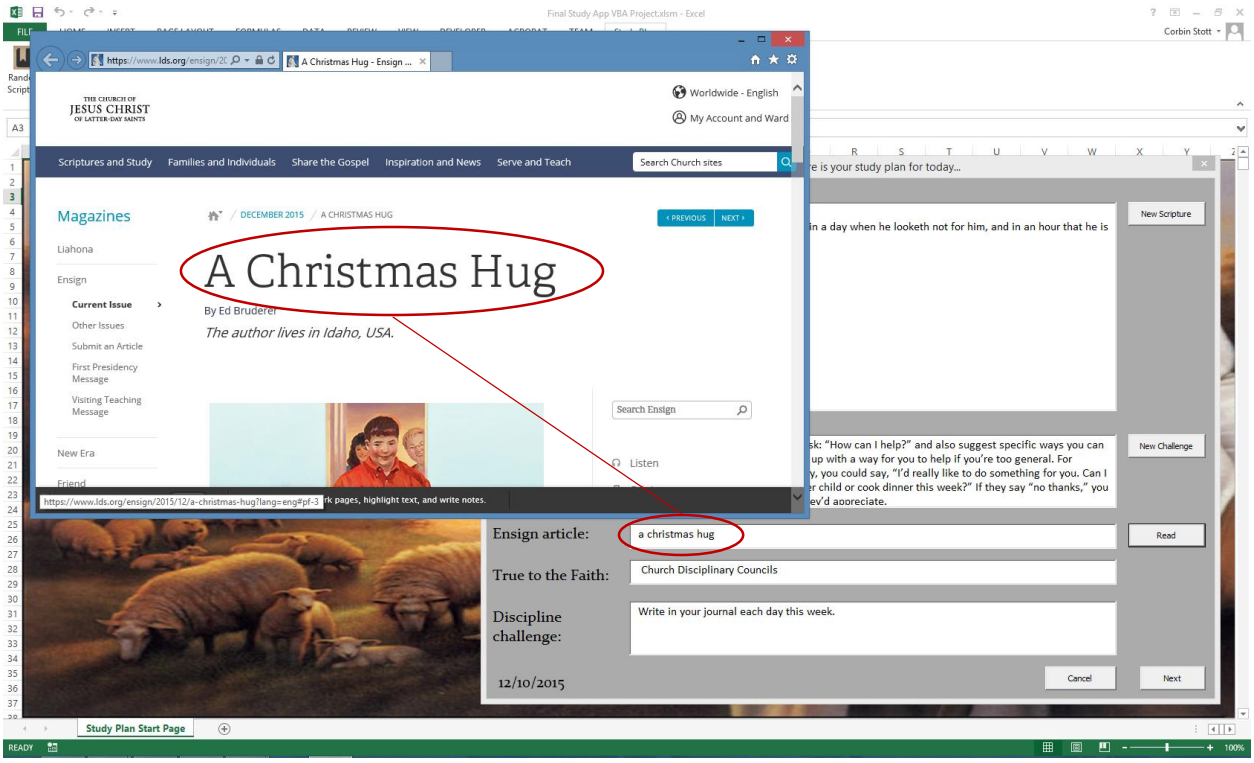
Home page



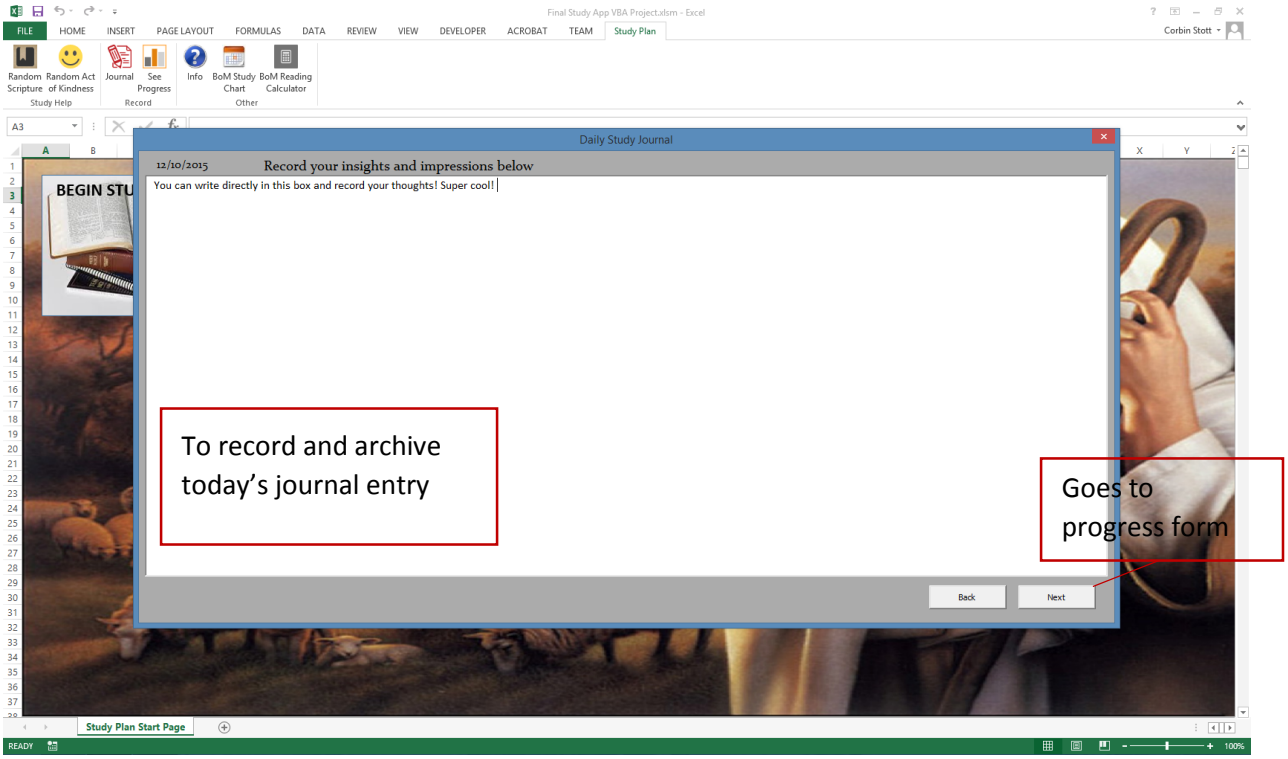
Study Plan User Form



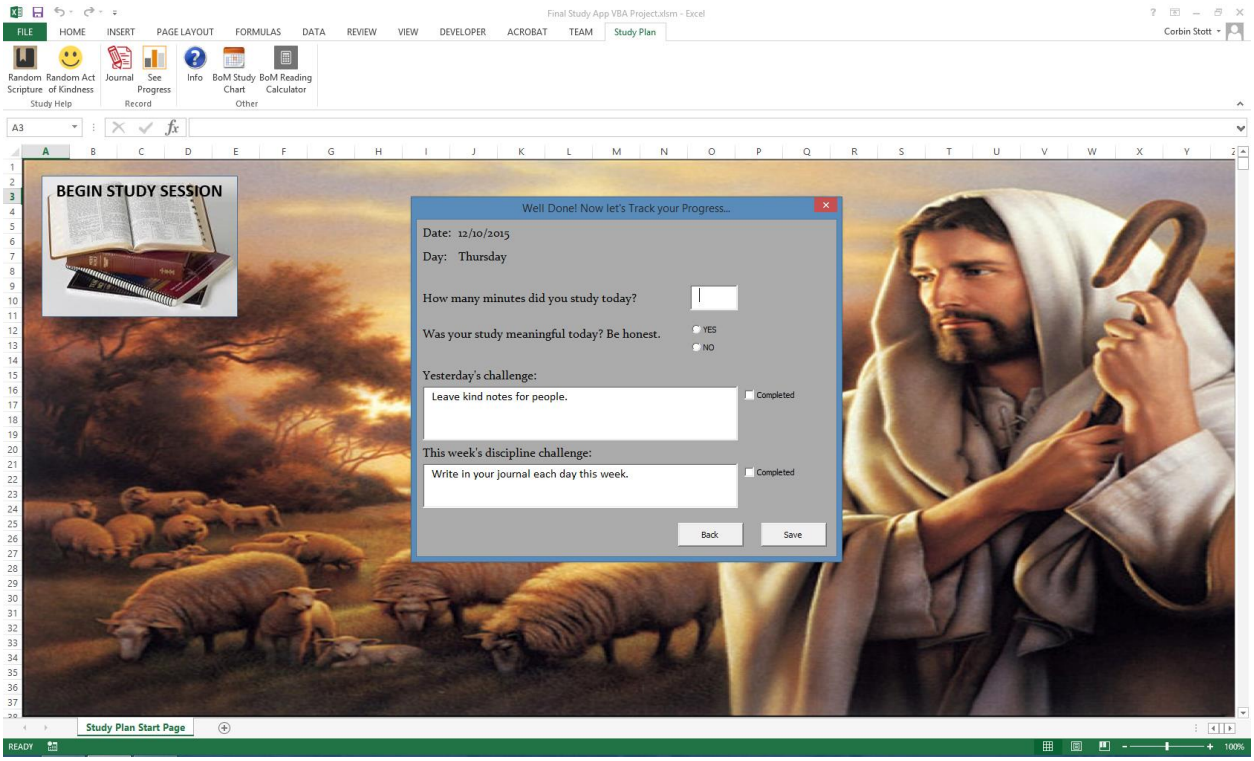

Welcome! Here is your study plan for today...
Today's Scripture is:
Neh11:5 And Maaseiah the son of Baruch, the son of Colhozeh, the son of Hazaiah, the son of Adaiah, the son of Joiarib, the son of Zechariah, the son of Shiloni.
New Scripture
Generates new scripture without resetting the rest of the form
Resets every 7th day the user studies using the study plan.
Generates new act without resetting the rest of the form
Kindness Challenge for today:
Sometimes we shy away from people when we know they're having a rough time. We assume we should wait for them to approach us, so we're not intruding. Instead, ask them how they're doing. If they don't want to talk, they'll say they're "fine." Many people will be relieved to have someone to talk to. If you don't ask, they might never mention anything to you. They might not want to burden you with their problems.
New Challenge
Ensign article:
make time for the savior
Read
True to the Faith:
Church Disciplinary Councils
Pulls up the ensign article listed for the user to read. (See below)
Goes to Journal Form
Discipline challenge:
Write in your journal each day this week.
12/10/2015
Cancel
Next

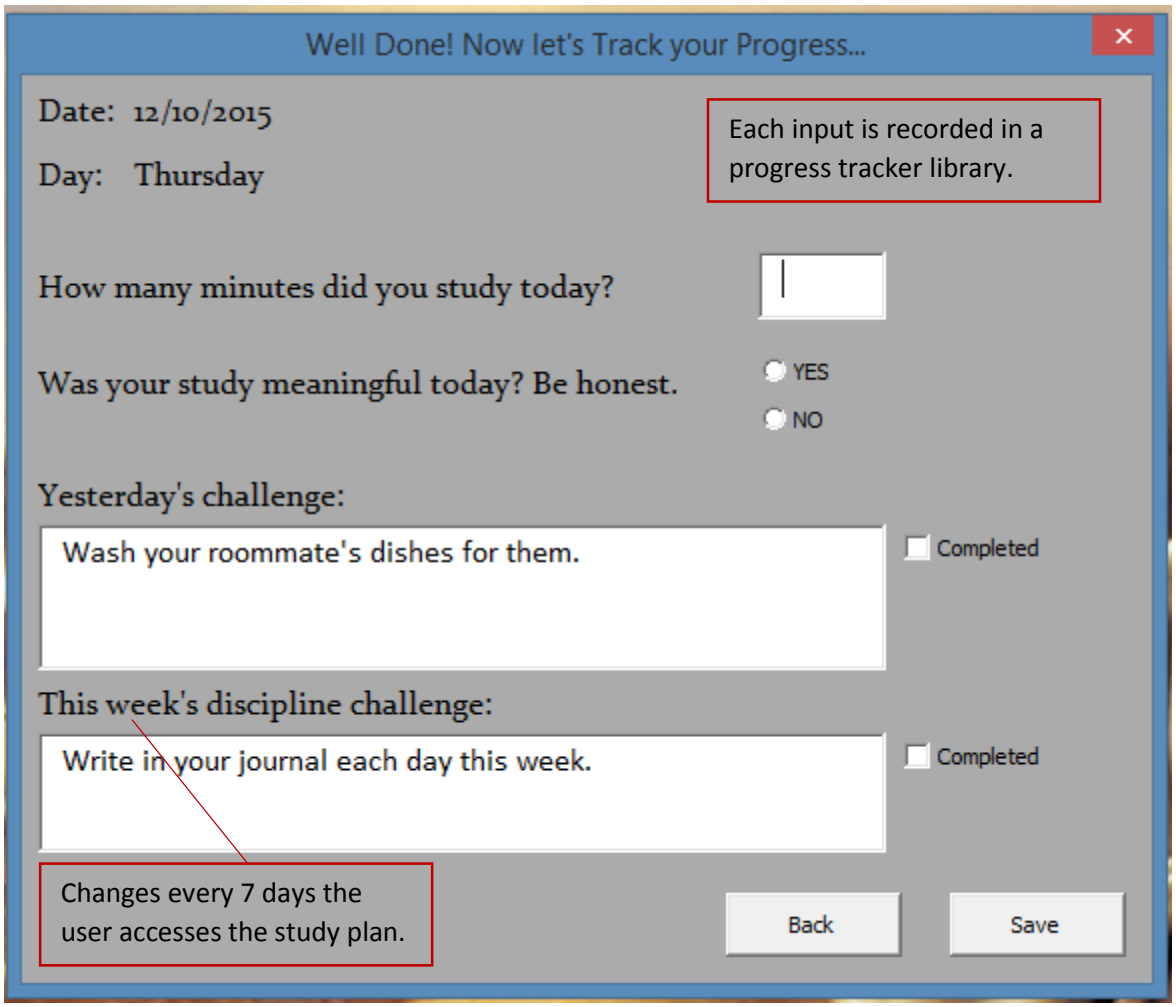

A Christmas Hug - Ensign ...
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS
Worldwide - English
My Account and Ward
Scriptures and Study
Families and Individuals
Share the Gospel
Inspiration and News
Serve and Teach
Search Church sites
Magazines
Liahona
Ensign
Current Issue
Other Issues
Submit an Article
First Presidency Message
Visiting Teaching Message
New Era
Friend
DECEMBER 2015 / A CHRISTMAS HUG
PREVIOUS
NEXT
A Christmas Hug
By Ed Bruderer
The author lives in Idaho, USA.
Search Ensign
Listen
Ensign article:
a christmas hug
True to the Faith:
Church Disciplinary Councils
Discipline challenge:
Write in your journal each day this week.
12/10/2015
Cancel
Next
Study Plan Start Page

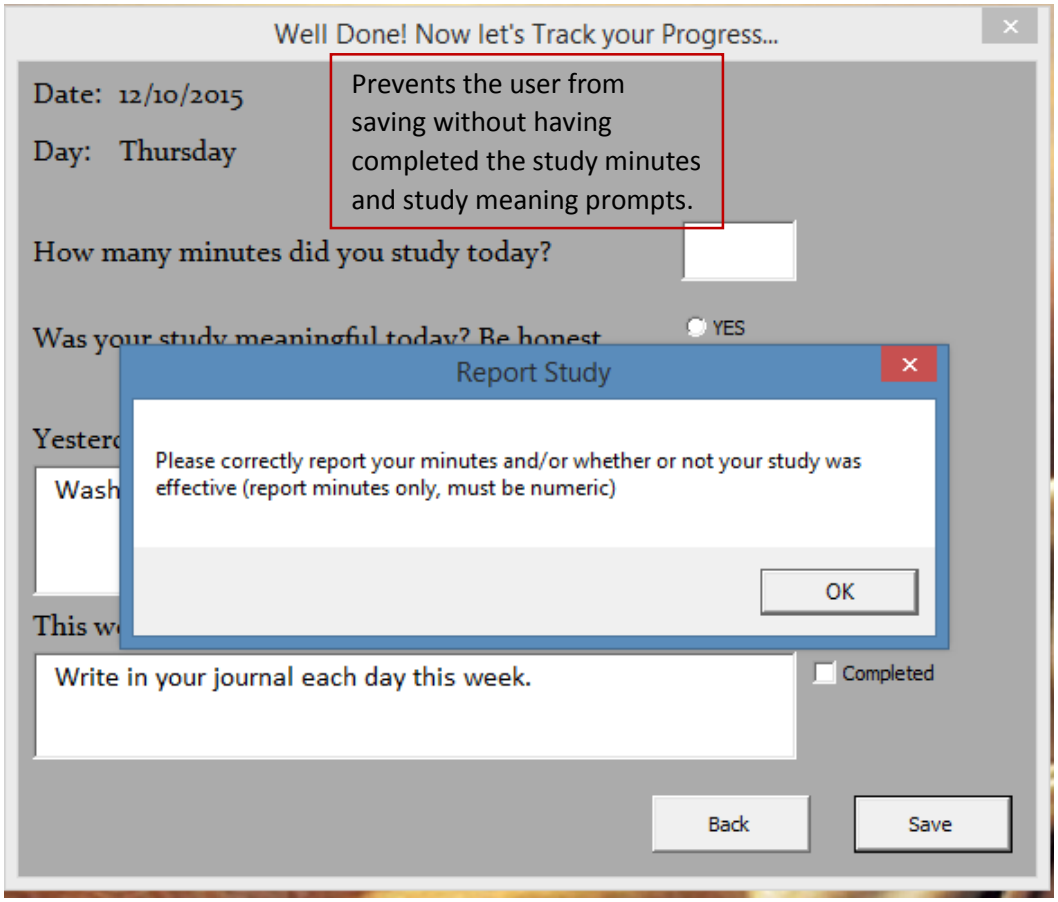
Record Journal User Form



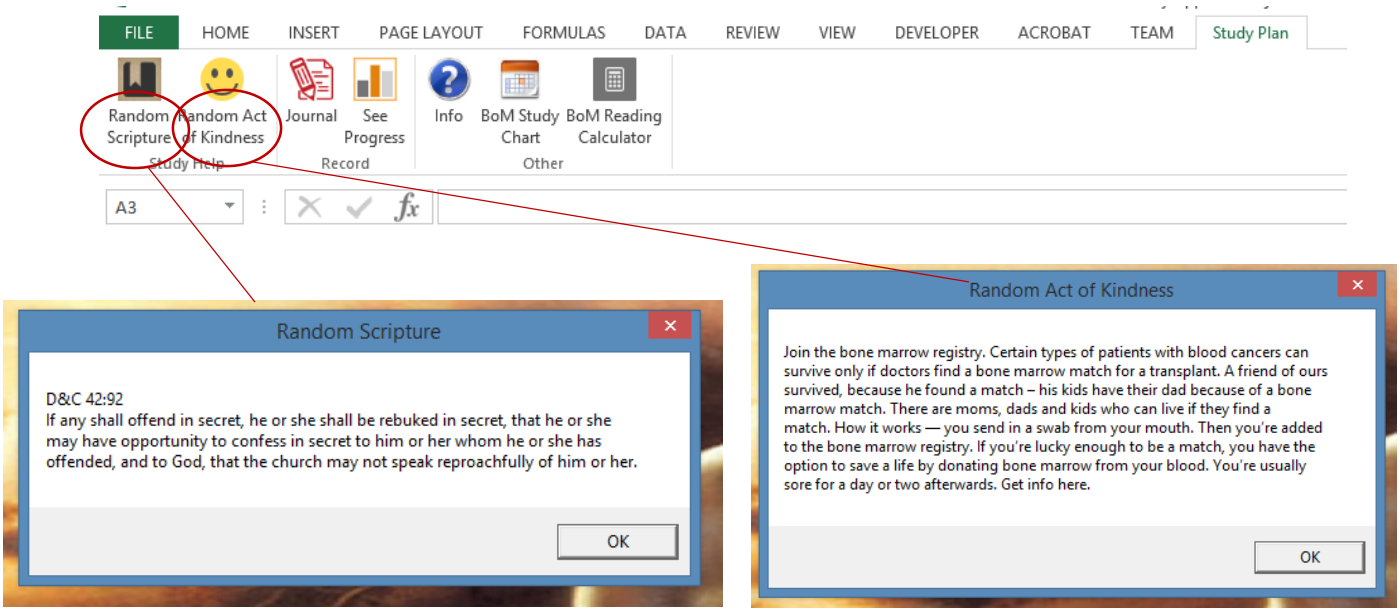
Progress Tracker User Form



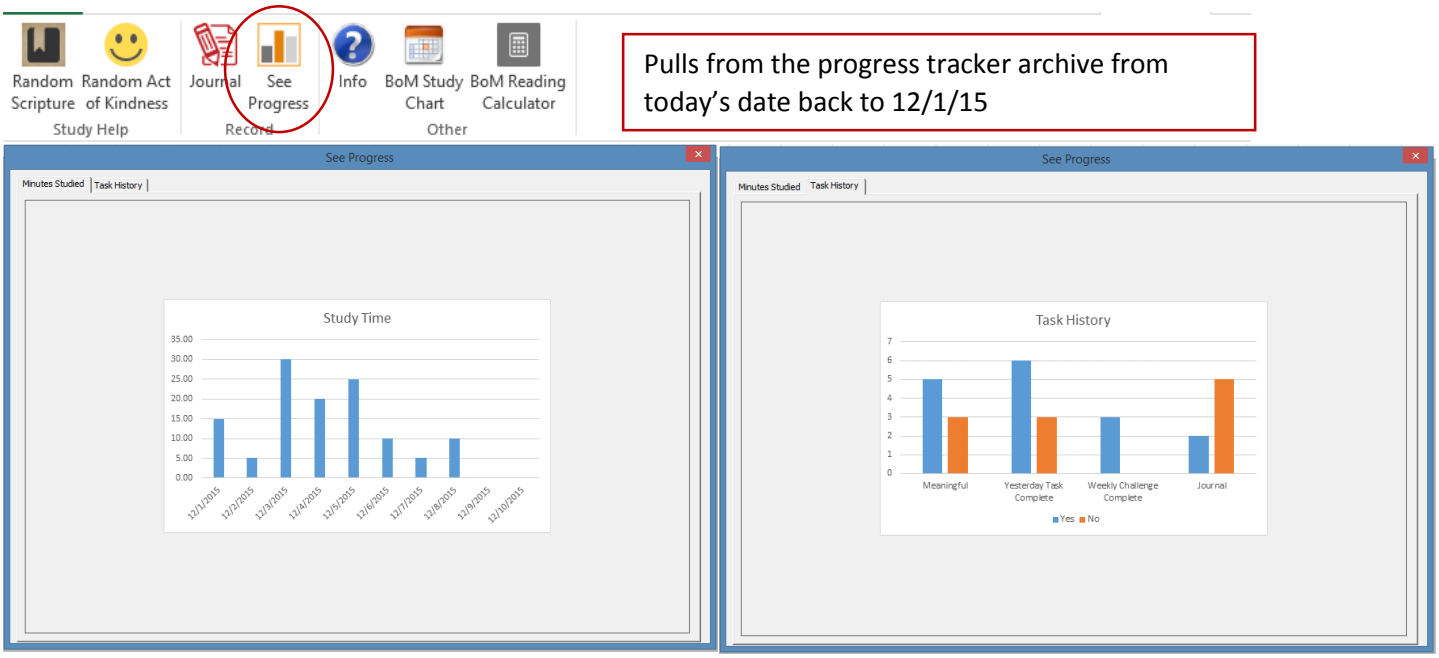

Well Done! Now let's Track your Progress...
Date: 12/10/2015
Day: Thursday
Each input is recorded in a progress tracker library.
How many minutes did you study today?
Was your study meaningful today? Be honest.
YES
NO
Yesterday's challenge:
Wash your roommate's dishes for them.
Completed
This week's discipline challenge:
Write in your journal each day this week.
Completed
Changes every 7 days the user accesses the study plan.
Back
Save


Well Done! Now let's Track your Progress...
Date: 12/10/2015
Day: Thursday
Prevents the user from saving without having completed the study minutes and study meaning prompts.
How many minutes did you study today?
YES
Report Study
Please correctly report your minutes and/or whether or not your study was effective (report minutes only, must be numeric)
OK
Write in your journal each day this week.
Completed
Back
Save

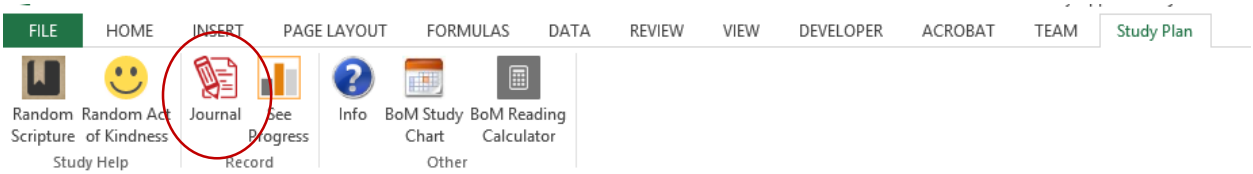
The Customized Ribbon

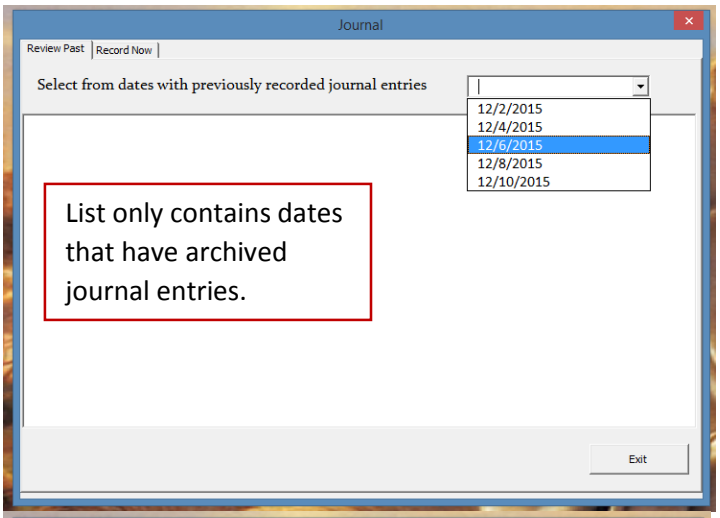


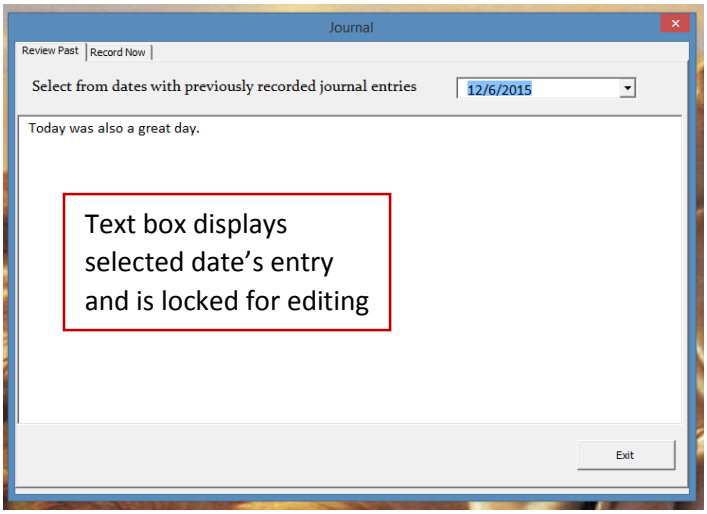
See Progress

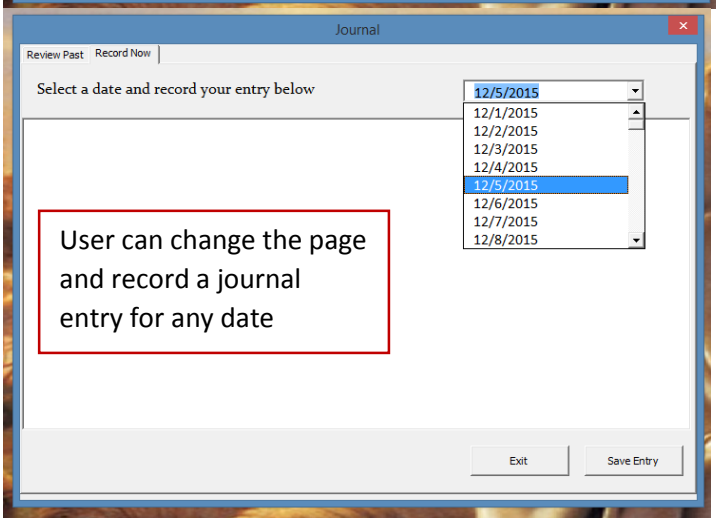


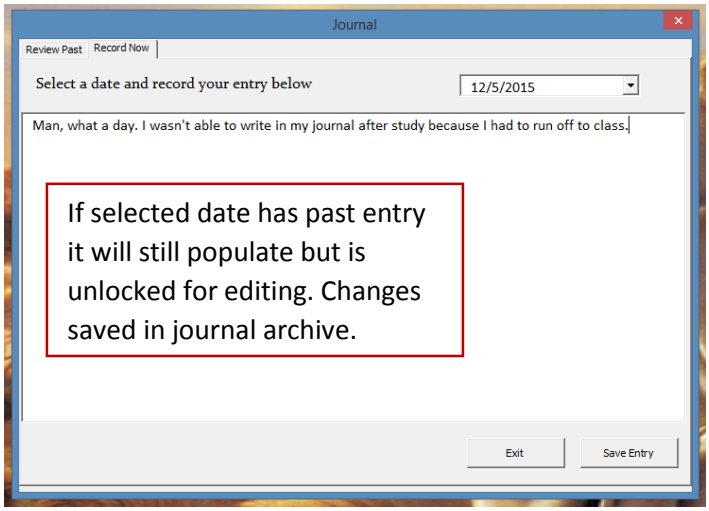
Journal



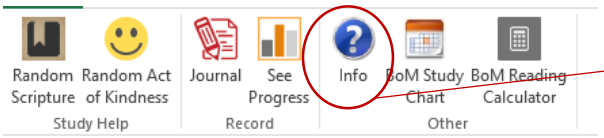

Journal
Review Past
Record Now
Select from dates with previously recorded journal entries
12/2/2015
12/4/2015
12/6/2015
12/8/2015
12/10/2015
List only contains dates that have archived journal entries.
Exit

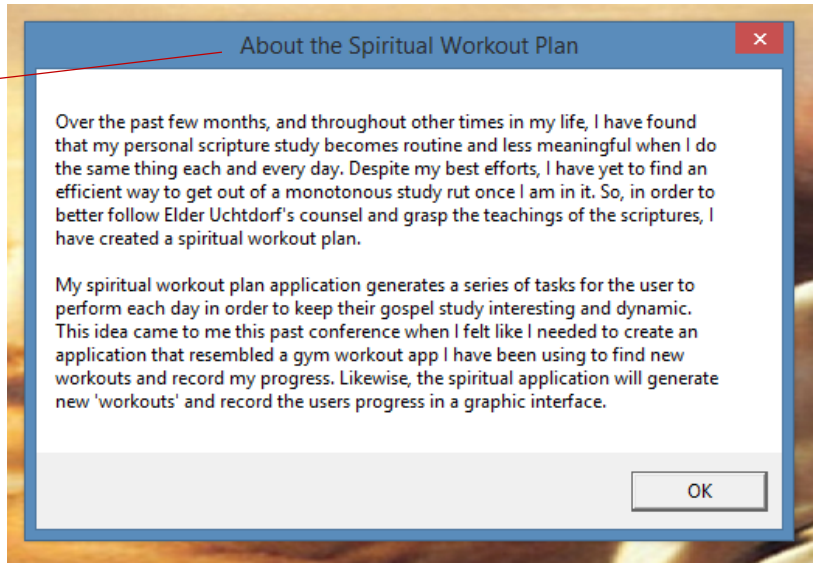

Journal
Review Past
Record Now
Select from dates with previously recorded journal entries
12/6/2015
Today was also a great day.
Text box displays selected date's entry and is locked for editing
Exit


Journal
Review Past
Record Now
Select a date and record your entry below
12/5/2015
12/1/2015
12/2/2015
12/3/2015
12/4/2015
12/5/2015
12/6/2015
12/7/2015
12/8/2015
User can change the page and record a journal entry for any date
Exit
Save Entry

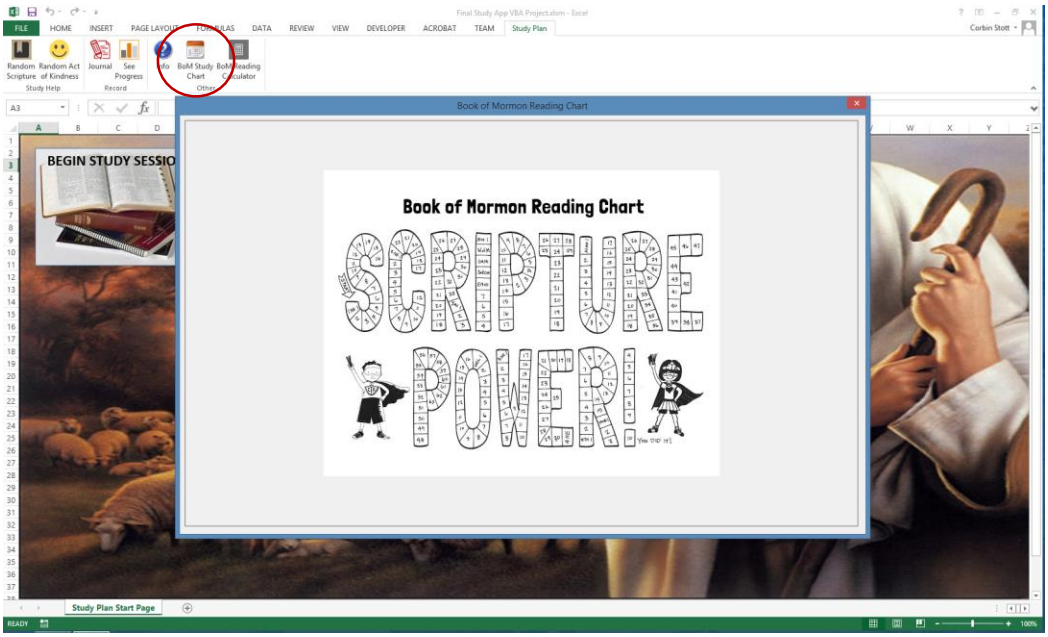

Journal
Review Past
Record Now
Select a date and record your entry below
12/5/2015
Man, what a day. I wasn't able to write in my journal after study because I had to run off to class.
If selected date has past entry it will still populate but is unlocked for editing. Changes saved in journal archive.
Exit
Save Entry

Info

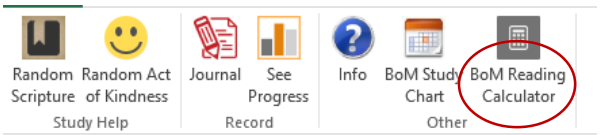

Random Scripture
Random Act of Kindness
Study Help
Journal
See Progress
Record
Info
BoM Study Chart
BoM Reading Calculator
Other


About the Spiritual Workout Plan
Over the past few months, and throughout other times in my life, I have found that my personal scripture study becomes routine and less meaningful when I do the same thing each and every day. Despite my best efforts, I have yet to find an efficient way to get out of a monotonous study rut once I am in it. So, in order to better follow Elder Uchtdorf's counsel and grasp the teachings of the scriptures, I have created a spiritual workout plan.
My spiritual workout plan application generates a series of tasks for the user to perform each day in order to keep their gospel study interesting and dynamic. This idea came to me this past conference when I felt like I needed to create an application that resembled a gym workout app I have been using to find new workouts and record my progress. Likewise, the spiritual application will generate new 'workouts' and record the users progress in a graphic interface.
OK

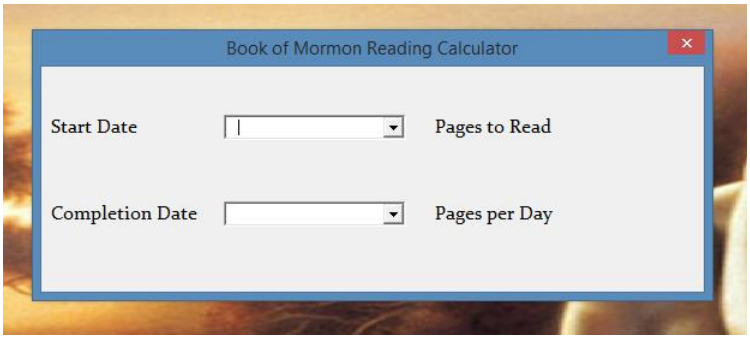
BoM Study Chart

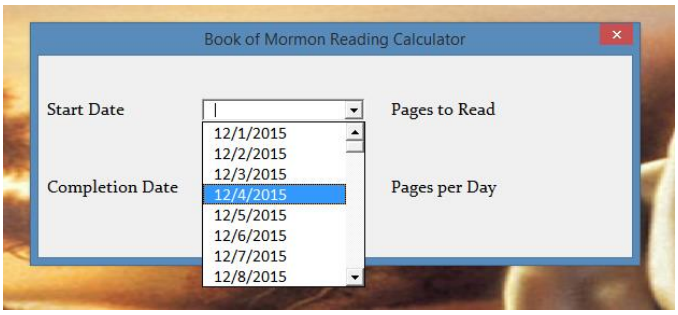


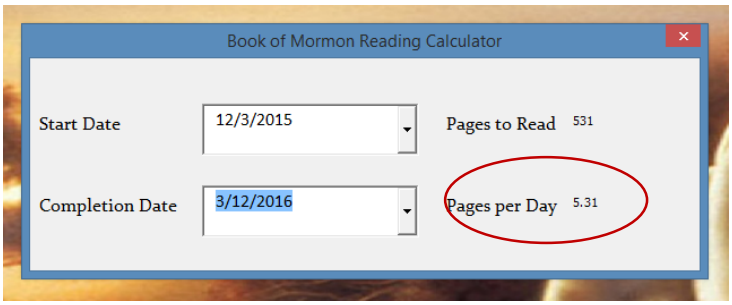
BoM Reading Calculator



Calculates the required number of pages to be read if the user were to complete the BoM from Start Date to the Completion Date







Learning and Conceptual Difficulties Encountered

I learned a lot from this project. While it is difficult to sum up all of the learning that took place, some of the notable things that come to mind are:

- How to input a chart on a user form by saving it to a temporary file as a .gif and then loading it as a picture on the form
- How to set a range and use the 'range.find' method to locate a row within a data set when searching for a specific string
- How to access files when the .html contains multiple URL links and no real text

- How to use the replace function and remove pieces of a string so it can be used in an array without problems (notably removing the double quotation marks of a string)
- Etc.

Most of what I learned from this project stemmed from a particular difficulty that was encountered. The three main difficulties I had during this project were the following:

1. *Pulling data from lds.org.* Using a web query wouldn't work because each Ensign article was uniquely identified so I had to use the .html approach. The .html of the lds.org webpage containing the most recent Ensign article did not have any text and, instead, a series of URL links to other .html pages. The Ensign has 7 recurring articles that they publish such as the "First Presidency Message", "Visiting Teaching Message", or "Young Adults" sections. I was able to find a common tag that preceded each of these sections "<h4>" and then use the agent to locate the next "href" which was followed by the article's URL. I added the URL to an array and then used the .Replace function to remove the quotations around the URL so that I could call the array and use Internet Explorer to open it.

   The other articles that weren't among the recurring 7 had a common tag as well and I was able to do the same thing as I did above to extract the URLs for each of the individual articles. These were added to the array and I used a random number generator to select an array for the user to read each day.

2. *Creating and adding a chart to a user form.* I didn't know how to create a chart using VBA so I used the macro recorder and modified it from there. This wasn't very hard. The hardest part was knowing how to transfer the chart to a user form. Because the chart index was different each time it was generated it was difficult to reference by index because it would change each time the program was run and I wasn't sure if that would even work as the user form wasn't accepting objects from other workbooks. After a Google search I found that the most reliable way to transfer it to a chart was to save it as a .gif file and then load it into the form as a picture. So, after fiddling with it for a while I finally got it to work and it looks really clean. Thank goodness for Google. I wasn't able to copy the code because the project I referenced was so different than mine but I was able to get the main idea and go from there on my own.

3. *Accessing Book of Mormon Data.* Because I was working with the LDS canon, it was more difficult to find usable datasets with the Book of Mormon. After searching, I found an .epub file with the triple combination from the lds.org website and was able to convert it to .xls format. Once the .epub converted to .xls file was uploaded to a workbook I created an array to scrub the data. The chapters were not clearly delimited so this step took some time. Eventually, I was able to write a loop detailed enough to only extract the data I was interested in and place it in an array.

Assistance

I received help from the internet on a few sections of my project. I used Google as my starting point and my searches usually lead me to msdn.microsoft.com, stackoverflow.com, or mrexcel.com. As mentioned above, I used these resources for figuring out how to input a chart into a user form, the name and functionality of the .find method, and the name/functionality of the Replace function. I did not copy any code from these sites and, instead, used them to direct me to available methods or functions.

I used Doctor Allen's agent in my project to control Internet Explorer and pull data from the .html on lds.org. I pulled my datasets from lds.org, j-walk blog.com, scriptures.nephi.org, buzzfeed.com, and pinterest.com.

Conclusion

While the problem solved with this program is not directly correlated to a business issue, the methods applied in this program easily translate to business applications. I am very pleased with the application and its capability to enhance the scripture study and overall wellbeing of those who use it. I look forward to sharing my project with future and potential employers to show them that I am proficient enough in VBA to innovative and improve in my personal as well as professional life.