

Pomodoro

1. Definition Statement

This app is based on a simple technique named “Pomodoro”. Pomodoro technique is used for time management. Pomodoro is an Italian word for tomato. This technique is developed by Francesco Cirillo, and named after tomato shaped timer that Cirillo used when he was a student.

The basic idea is divide a large task into short time intervals, usually 25 minute intervals. These intervals are called Pomodoros. The following steps are involved in this technique:

- 1) Set a Pomodoro of 25 minutes.
- 2) Every time you get distracted mark one strike.
- 3) After 25 minutes are over, if you have fewer than four strikes marked, take five-minute break.
- 4) After five minutes, go back to step one.
- 5) Repeat above four steps four times. After four Pomodoros are done take 15-minute break.

1st Pomodoro  (25 mins)	short break (5 min)	2nd Pomodoro  (25 mins)	short break (5 min)	3rd Pomodoro  (25 mins)	short break (5 min)	4th Pomodoro  (25 mins)
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15 mins long break

1st Pomodoro  (25 mins)	short break (5 min)	2nd Pomodoro  (25 mins)	short break (5 min)	3rd Pomodoro  (25 mins)	short break (5 min)	4th Pomodoro  (25 mins)
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2. List of implemented features

- **Note:** Screen shots are on the last page.

1) Implement basic Pomodoro technique

I have implemented basic Pomodoro technique as described in definition statement above.

When a Pomodoro gets over it notifies and the total count of Pomodoros are shown on the screen using smalls tomato images.

Number of tomatoes = number of completed Pomodoros

2) Recording distractions/strikes

Every time user gets distracted user can click “Add Strike” button provided on the screen which records count of distractions. As defined in the definition statement if these strikes are less than four then short break will be given otherwise short break will automatically be skipped.

3) Start, pause, continue, stop buttons for Pomodoros and breaks

User can start, pause, continue and stop a Pomodoro or a break. If user stops a Pomodoro that Pomodoro is discarded completely. The app will not record that Pomodoro in the total count.

4) Time and number of Pomodoros customization

By default,

- Pomodoros are set to 25 minutes
- Short breaks to 5 mins
- Long breaks to 15 minutes
- Number of Pomodoros to 4

All above values are customizable. Users can select different values as per their requirements in Settings tab. After first installation above values will be stored in UserDefaults and these values will be used when user opens the application next time.

5) Music to improve focus

By default, music is set to Off. I have provided three audio files namely

- Waterfall,
- Meditation

in Settings tab. User can select any music. The selected music will repeat continuously (even if app is running in background) until user doesn't select "off" option. I am storing this value in UserDefaults so app fetched this value when user opens the app next time.

I have added only two mp3 files for now because it is increasing the size of the project.

6) Notifications

When app is running in background if Pomodoro or break ends a notification will be sent indicating that Pomodoro is over or break is over.

When app is running in foreground it vibrates and rings when Pomodoro or break ends.

I am using alarm tone named "Tiptoes", sound ID is 1034 as given on the following wiki page:
<http://iphonedevwiki.net/index.php/AudioServices>

3. Wish list of features

1) UI, Animation

Improved UI of the application.

Very interesting animations can be provided in this application. I am showing a circle animation to indicate the completed time. This animation works perfectly when user clicks start, pause, continue or stop button.

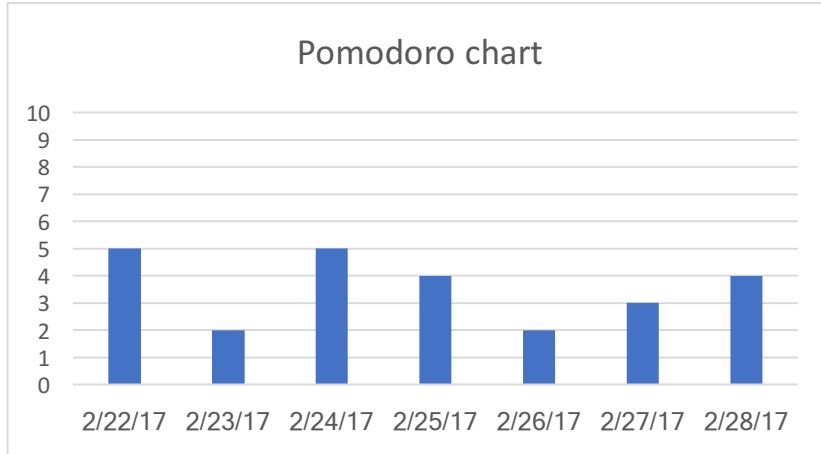
The animation completes automatically when user changes tab or app goes in background. One way to solve this issue is storing the current state of animation before changing a tab or before

going in background. And then redrawing that portion when app comes on that tab in foreground. To do this issue in-depth knowledge of CABasicAnimation as well as knowledge of its methods is required. I will solve this issue in the next version.

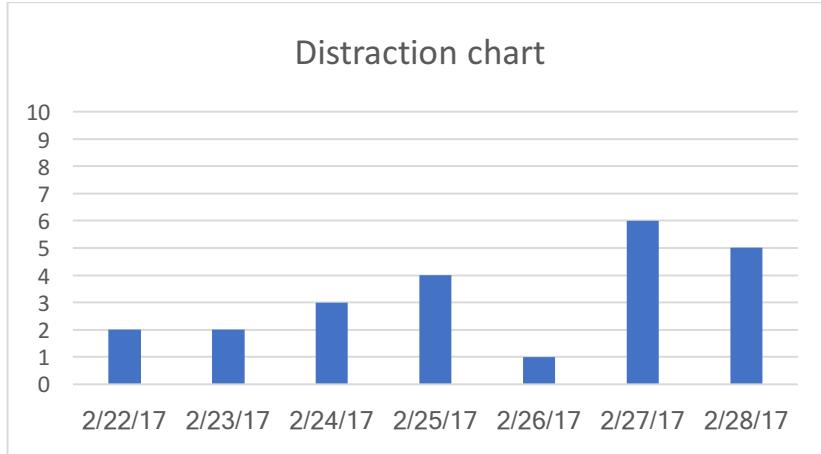
2) Graph

I am storing number of completed Pomodoros and number of strikes. I will store this data for every day and draw a graph showing this information as follows:

- **Number of Pomodoros successfully completed per day**



- **Count of distractions per day**



3) Themes

Different themes can be provided.

4) Sharing

I want to make this app shareable so user can share all the stored data with other users.

4. Self-evaluation

- This application provides all the features of basic Pomodoro technique and additional features such as customizable time intervals, customizable number of Pomodoros, customizable music, user can start, pause, continue, stop Pomodoro/breaks.
- I have completed all features that I mentioned to be completed in this semester other than graph.
- I have followed MVC framework where data is stored in one class (model) and is handled in other set of classes (controllers) and view is handled by other classes (views).
- I have created methods to make code reusable. I am using enums and constants to reduce number of literals and strings.
- I have tried to make my application look pleasant and user-friendly using tab bar controller, animation and images.
- This application is very easy to use. I am storing all the data (five main factors) in UserDefaults to store user's choice. These choices are used when user uses the app next time.

5. Classes

1) AppDelegate.swift

- Default values for all time intervals, number of Pomodoros, music and number of strikes are set here.
- When app runs in background timer stops working. This class keeps track of time and sends notification if time interval gets over when app is still running in background in applicationWillEnterBackground () function.
- In applicationWillEnterForeground () function, it sends elapsed time to ClockVC.swift to update the time.

2) Clock.swift

- This is a model class which implements all setters and getters for time intervals and number of Pomodoros.

3) ClockVC.swift

- This is the main class which implements basic Pomodoro technique as explained in the definition statement.

4) SettingsVC.swift

- This class implements table view for customization of time intervals, number of Pomodoros and music.

5) SettingsDetailVC.swift

- This class shows actual values to be selected for selected row in SettingsVC.swift. It then updates UserDefaults as per values selected by user.
- This class handles Audio Player when user selects some music or turns off the music.

6) UI.swift

- This class handles circle animation. Yellow and red circle shown on the first screen.
- This class handles starting, pausing, resuming and stopping of animation.

6. Above and beyond

Customizable values and notifications make this app user-friendly. Animation used to show completed time makes user interface pleasing. I am handling all the possible conditions successfully such as all the states of app as paused, stopped, running, app in background etc. which was the most complicated part.

7. Following are the URLs that I have used:

Notification - https://www.youtube.com/watch?v=Svul_gCtzck

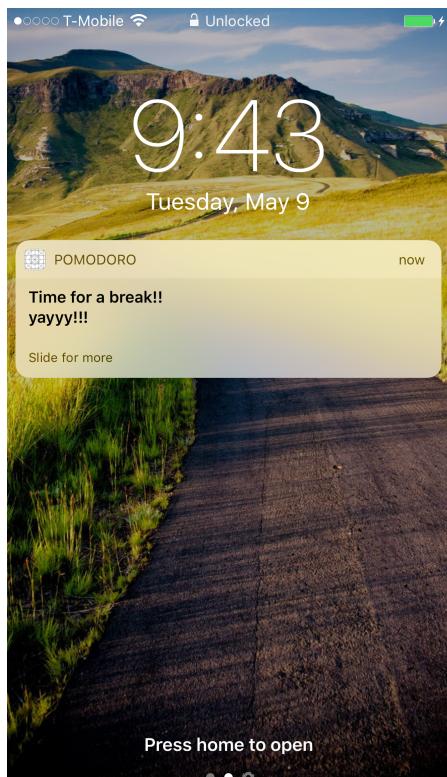
Timer - <https://www.youtube.com/watch?v=6tdNJwDwFys> by Michel Deiman

Animation - <http://stackoverflow.com/questions/26578023/animate-drawing-of-a-circle> by Mike S

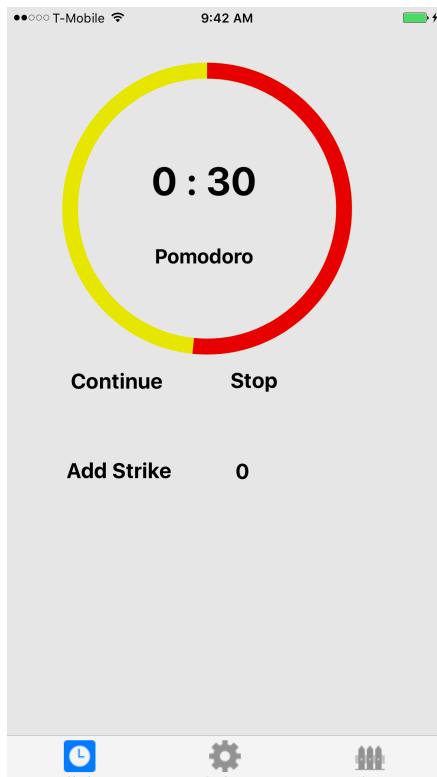
8. Testing

I have tested this application on iPhone 7 in simulator and on iPhone 6 plus cellphone.

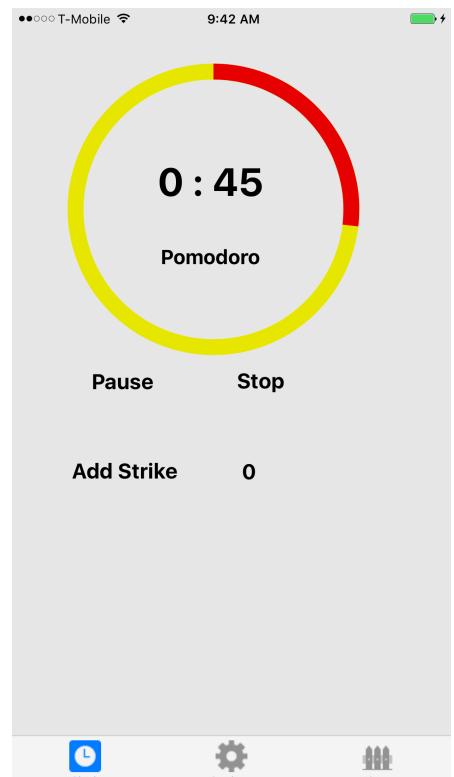
9. Screen Shots



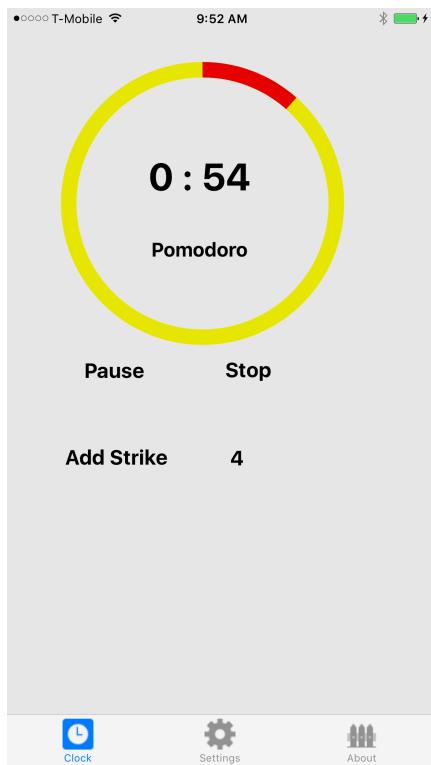
Notification



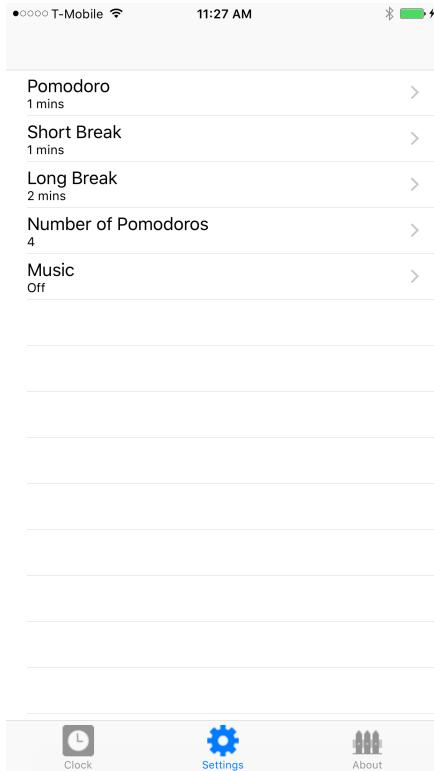
Paused Pomodoro



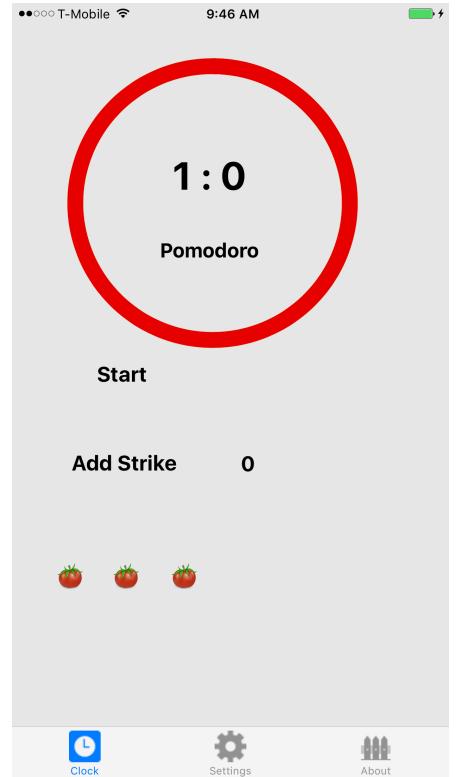
Running Pomodoro



4 Strikes



Customizable list



3 Completed Pomodoros