IT-441
Computer Graphics

Assignment 3

Truncating a Cube

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INTRODUCTION

This Program creates a wire cube with a list of vertices and individually makes each face using a separate function and when user presses t, truncates the corners one by one,re-rendering the faces. One can also rotate it using a,s,w,d keys.

PROGRAM FUNCTIONS

The program does the below mentioned:
1) Create a Cube, by rendering each face separately
2) Enable the user to truncate the corners one by one and rotate the cube.

ALGORITHM

In geometry, a cube has 6 faces with four corner points each. When we truncate a corner, the number of corner points in each of the three faces containing the truncated corner increases by one. Everytime a corner is truncated(user presses t), all the faces are redrawn using line_loop. The cube can also be rotated if desired.

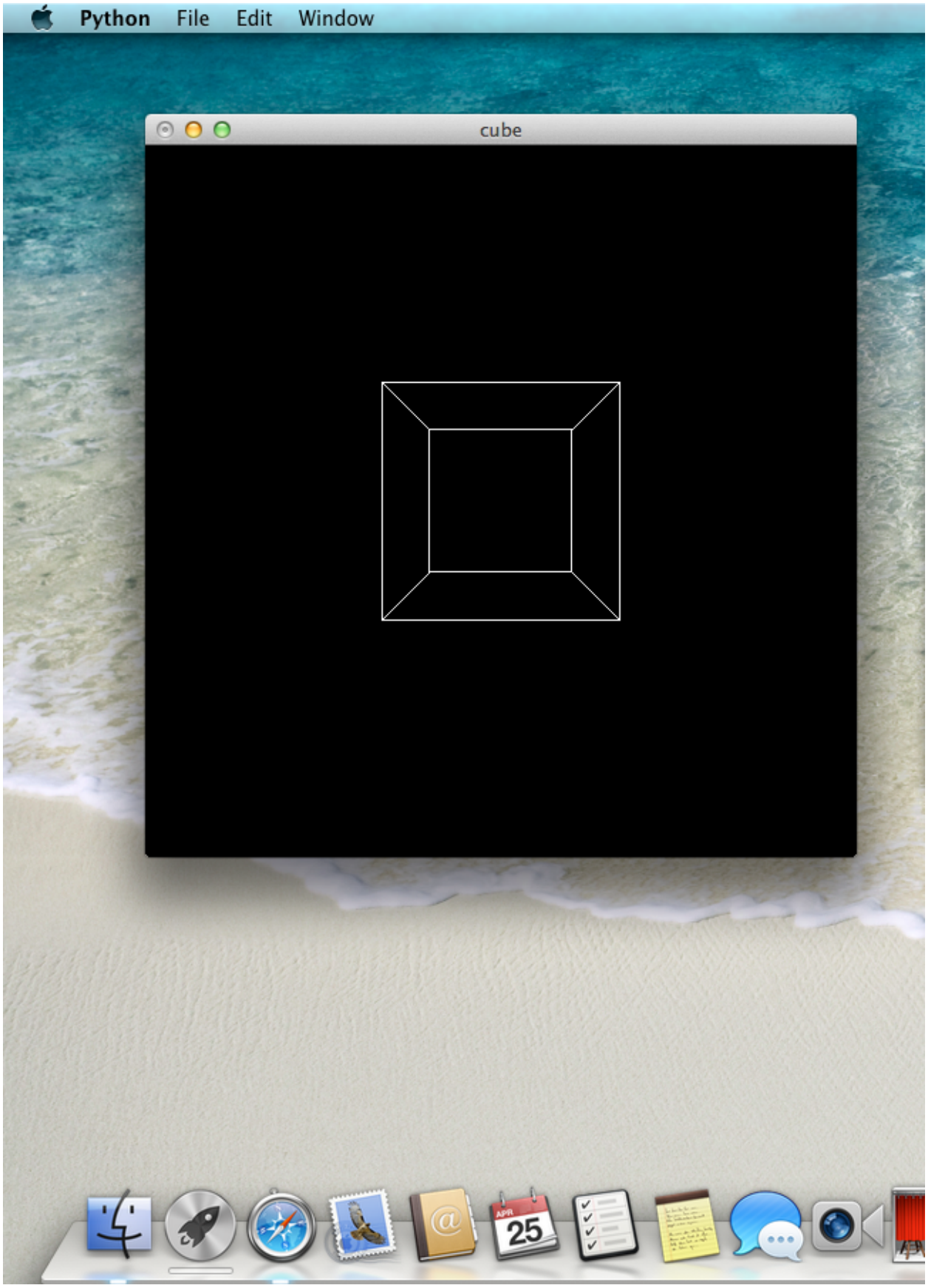
USER OPTIONS

The user can truncate corners of a cube one by one and also rotate the structure (horizontally or vertically,clockwise or anti clockwise) using keyboard input.

MODULES

Init function that clears the screen and sets the shading model.
Draw face modules for faces 0 to 5(6 in all), which depending on the number of cuts, draws either the original corner vertex or the 2 points which replace it.

Drawcube function to draw the cube by calling individual functions to draw the 6 faces independently.
Display function to draw the cube and rotate it if desired.
Mykey which is the keyboard function defines functions to be called at each key input and helps execute actions as per user's choice.
SCREENSHOTS(Please see the next page)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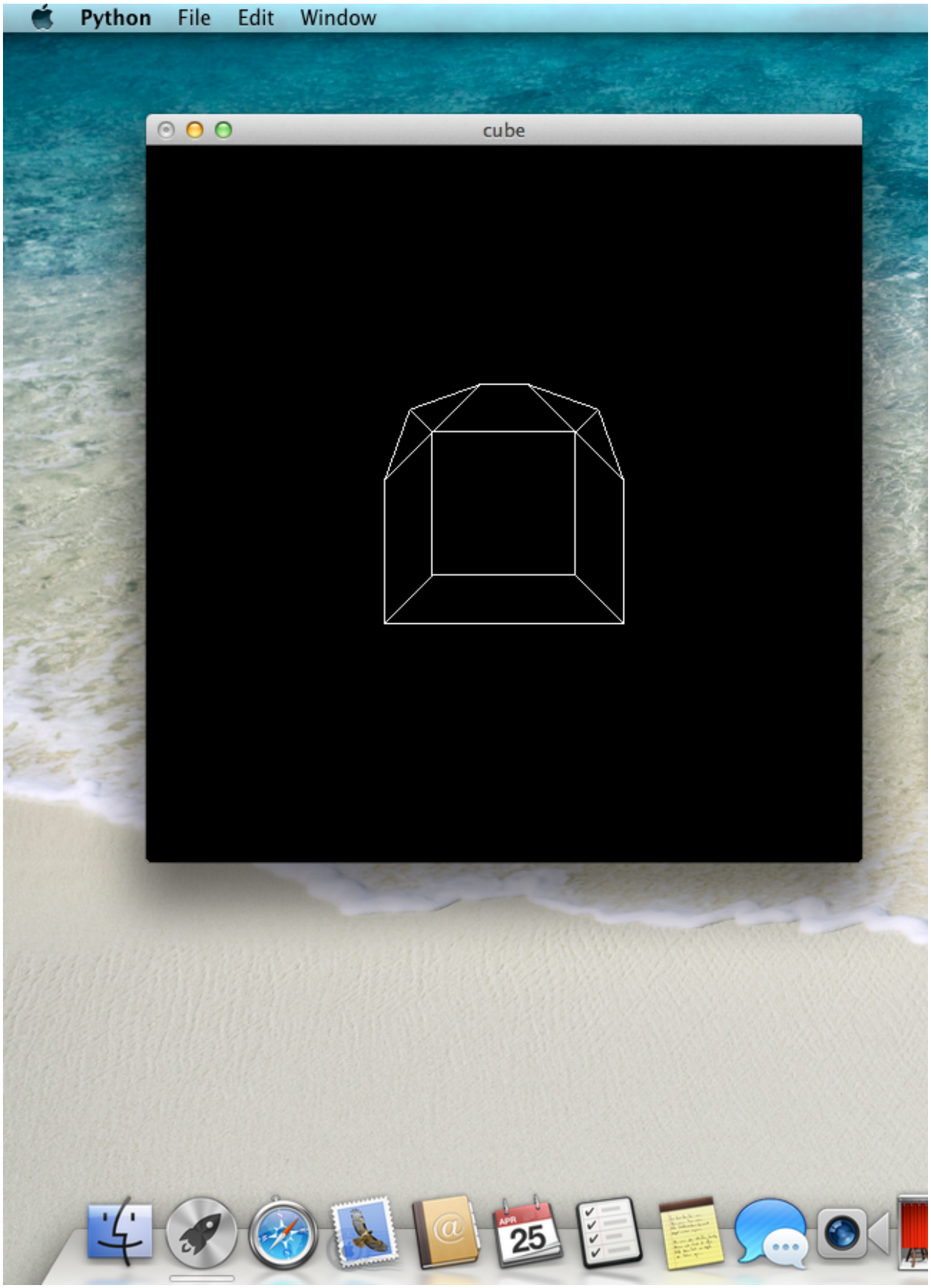
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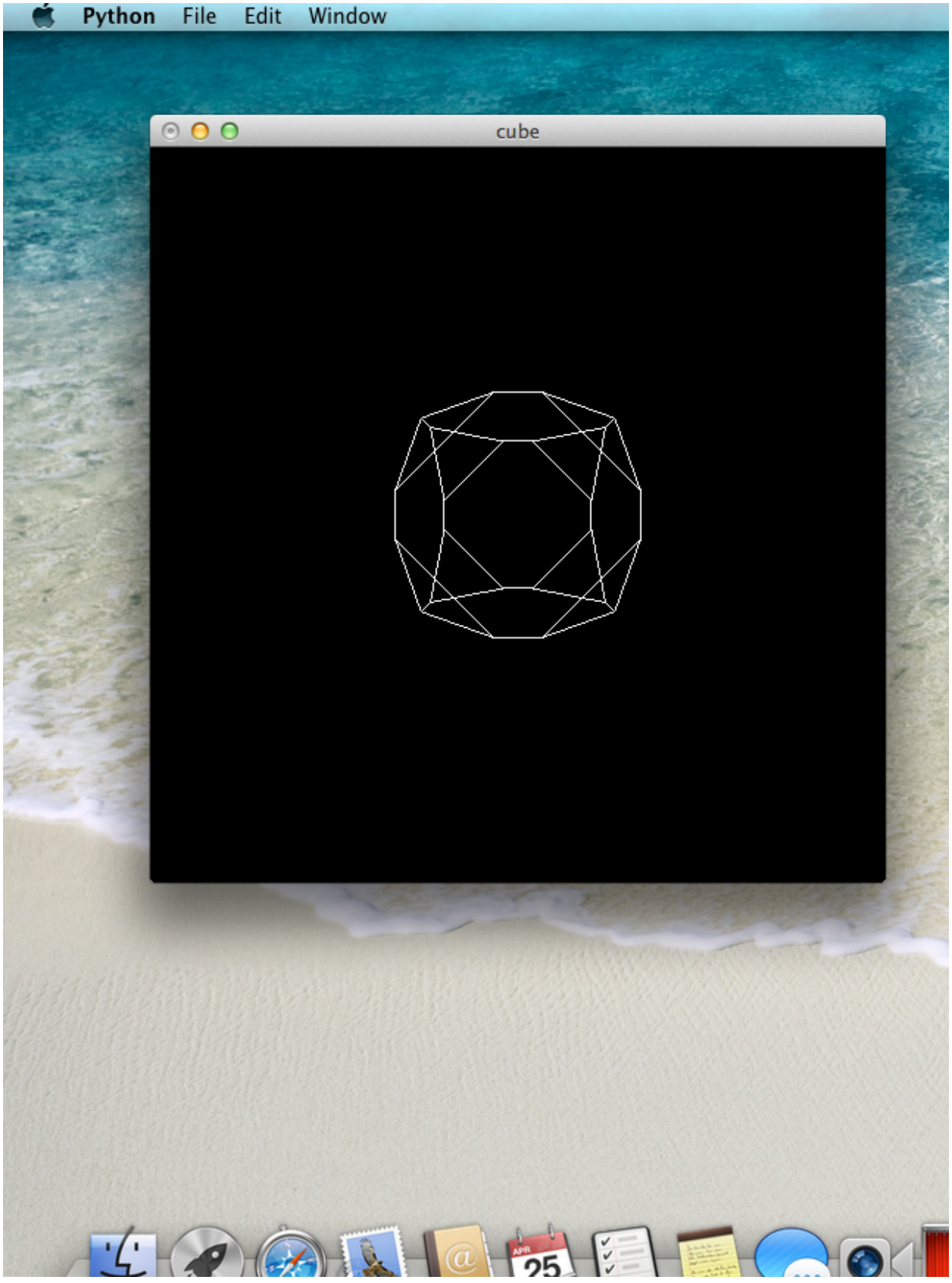
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