

A state-transition model for accessing local resources for a standard Windows system

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The state-transition model reflects all the states and transitions for accessing local resources for a standard Windows system. The state-transition model reflects possible paths a user can take through this state space to access a resource, from root (deciding what first step to use) to leaf (finally opening the desired file). Each transition represents a choice to the user at that stage as to how to proceed next.

We use an abbreviation convention, in which each grey node is a *supernode* — a collapsed version of several states and transitions. Transitions marked *Decide* denote mental operations, those marked *Select* denote physical user actions such as mouse clicks and keypresses, and those marked *Navigate* are a shorthand notation indicating that both a mental operation to decide how to proceed and the sequence of physical user actions to reach the next state are included.

Access paths with only trivial differences can be combined into groups, in order to make analysis tractable and useful. We refer to groups of access paths as *alternative paths*. All possible in the Windows environment are termed *possible alternative paths*, which are listed at the end of this document.

Action Grammar

Decide – M

Navigate – (MP)*

Select icon – L | L E | R (P* L | K*) | D | K* (D | E | L | L E | R P* L | R K*)

Input text – K*

Key

M – Mental operation

P – Mouse movement

L – Left-click

E – Enter

R – Right click

K – Key press

D – Double click

1. Choose another alternative

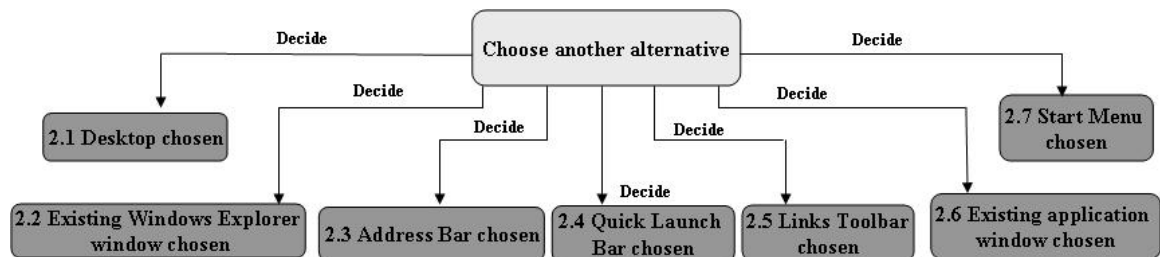


Figure 1: Choose an Alternative Path

2.1 Desktop chosen

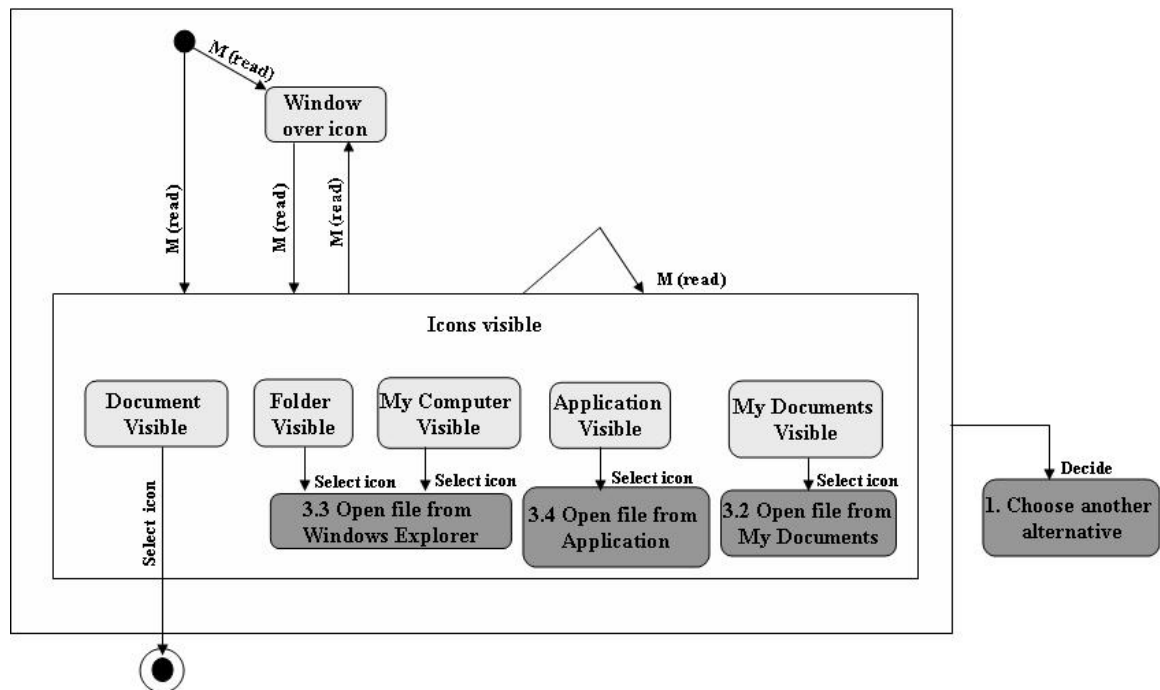


Figure 2: Desktop Chosen

2.2 Existing Windows Explorer chosen



Figure 3: Existing Window Explorer Chosen

2.3 Address Bar chosen

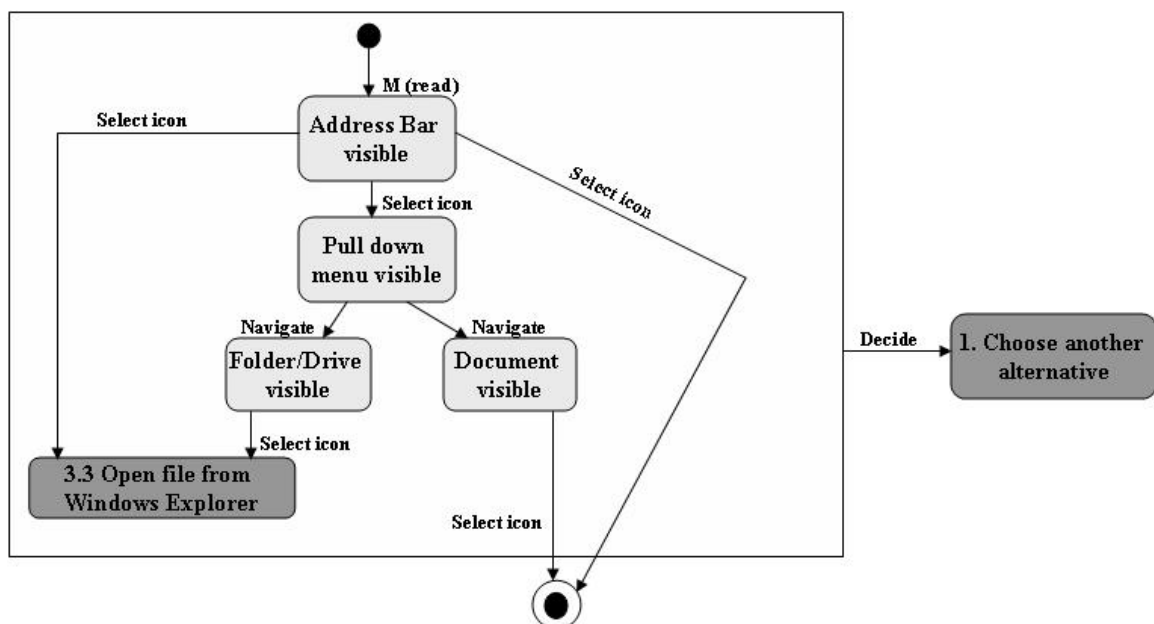


Figure 4: Address Bar Chosen

2.4 Quick Launch Bar chosen

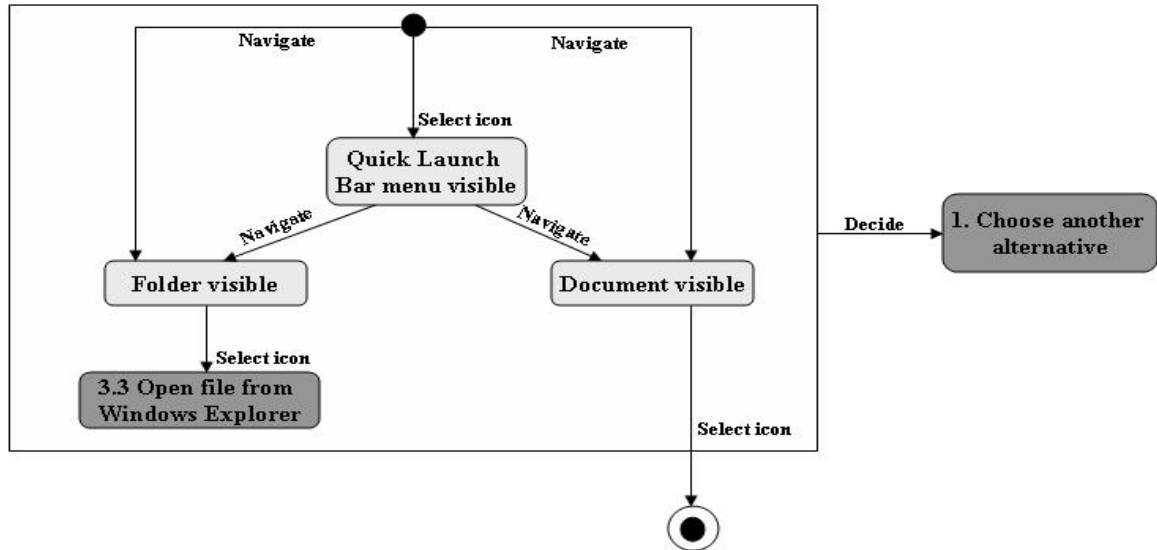


Figure 5: Quick Launch Bar Chosen

2.5 Links Toolbar chosen

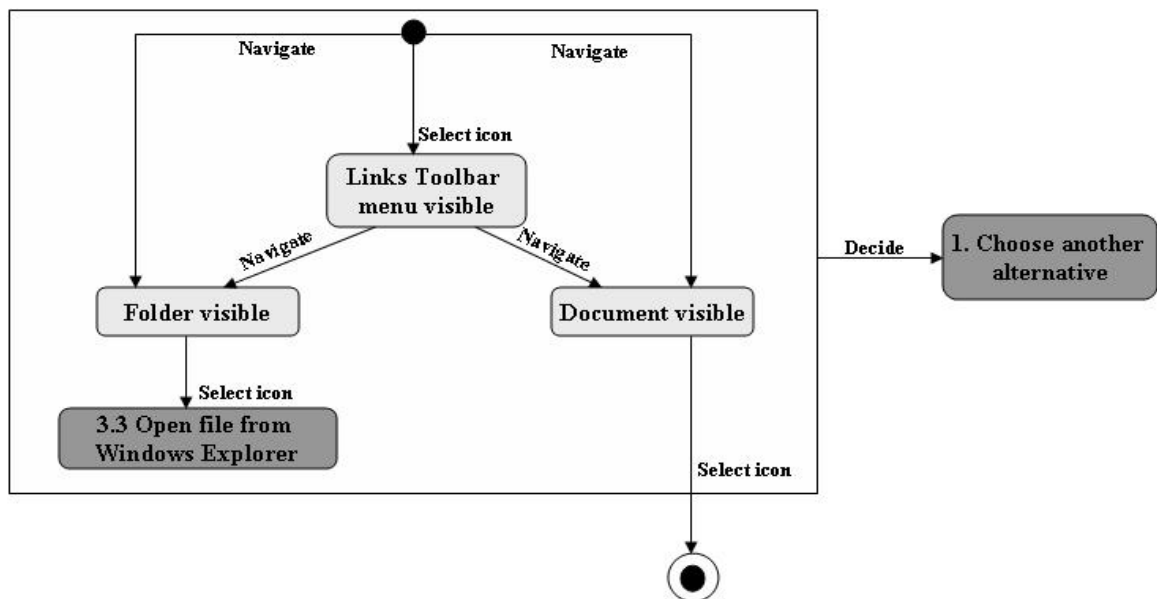


Figure 6: Links Toolbar Chosen

2.6 Existing Application Window chosen

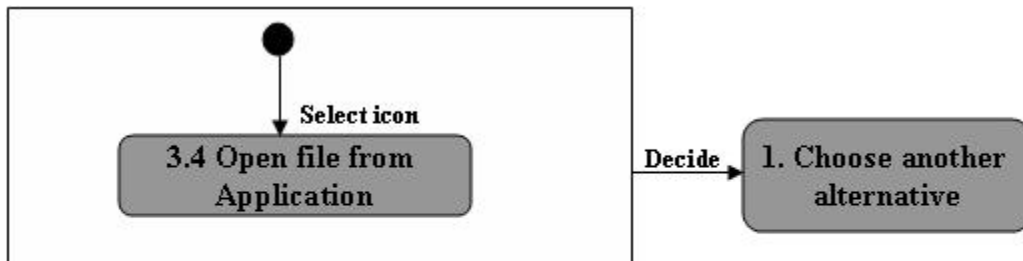


Figure 7: Existing Application Window Chosen

2.7 Start Menu chosen

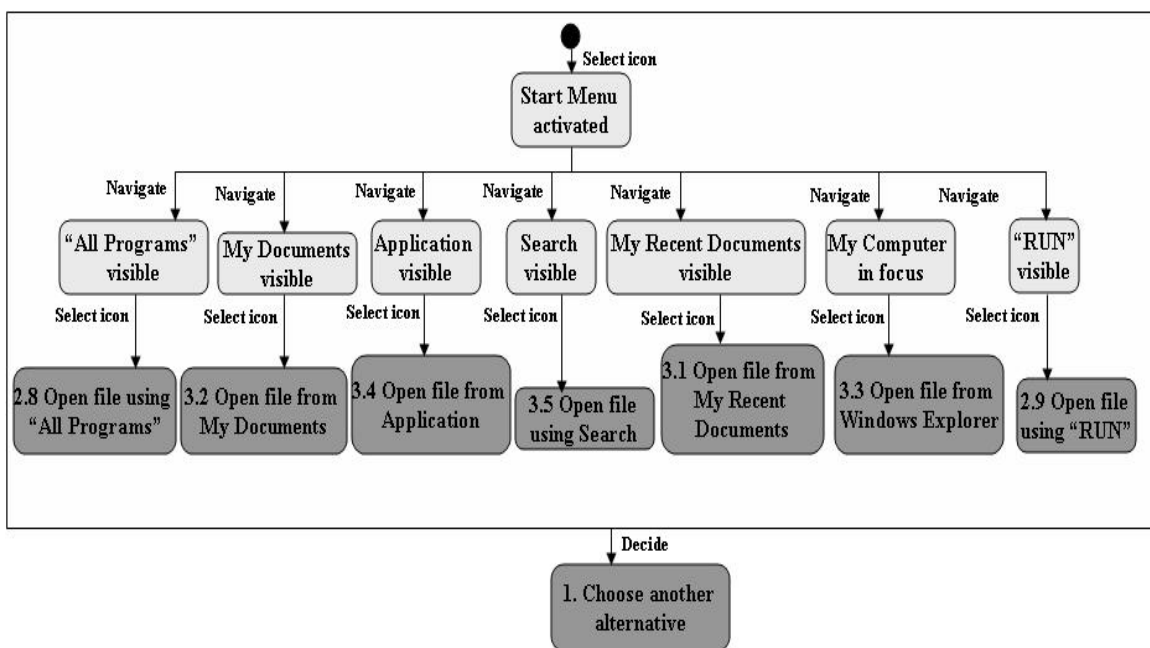


Figure 8: Start Menu Chosen

2.8 Open Application from “All Programs”

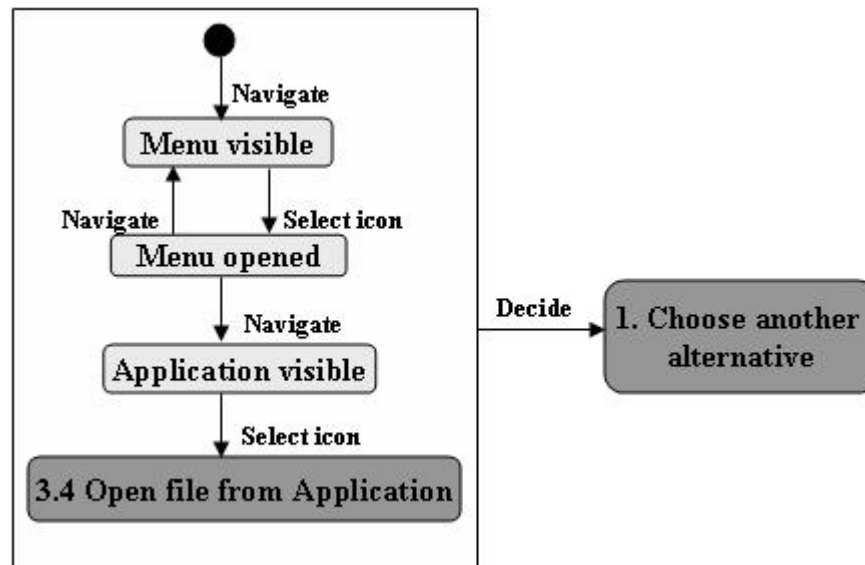


Figure 9: Open Application from “All Programs”

2.9 Open file from “RUN”

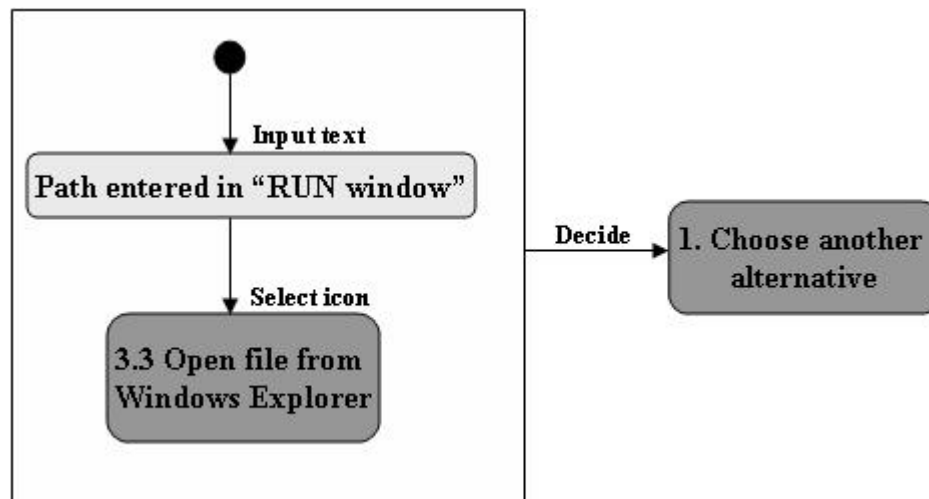


Figure 10: Open File from “RUN”

3.1 Open file from My Recent Documents

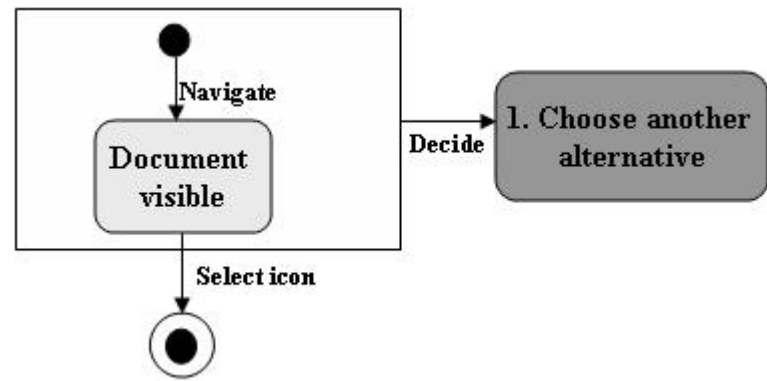


Figure 11: Open File from My Recent Documents

3.2 Open file from My Documents

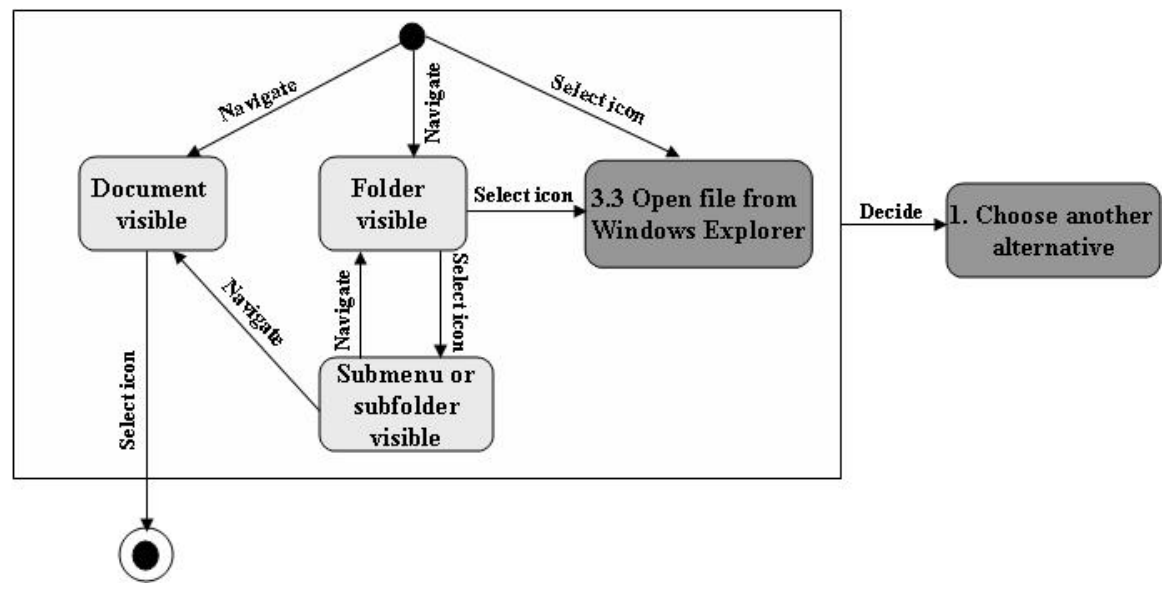


Figure 12: Open File from My Documents

3.3 Open file from Windows Explorer

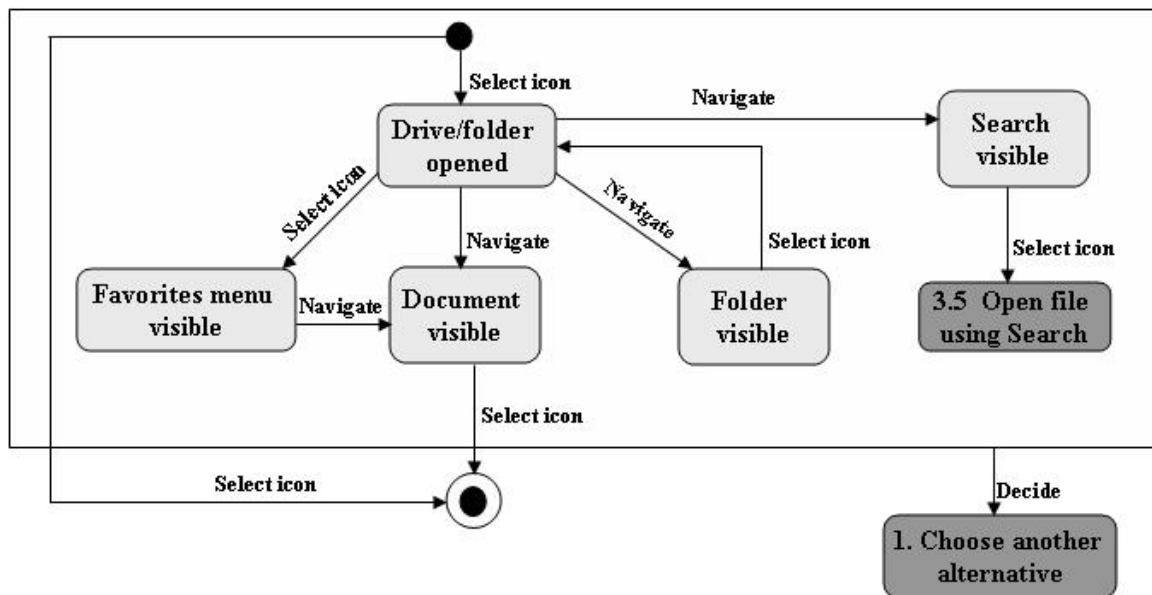


Figure 13: Open File from Windows Explorer

3.4 Open file from Application

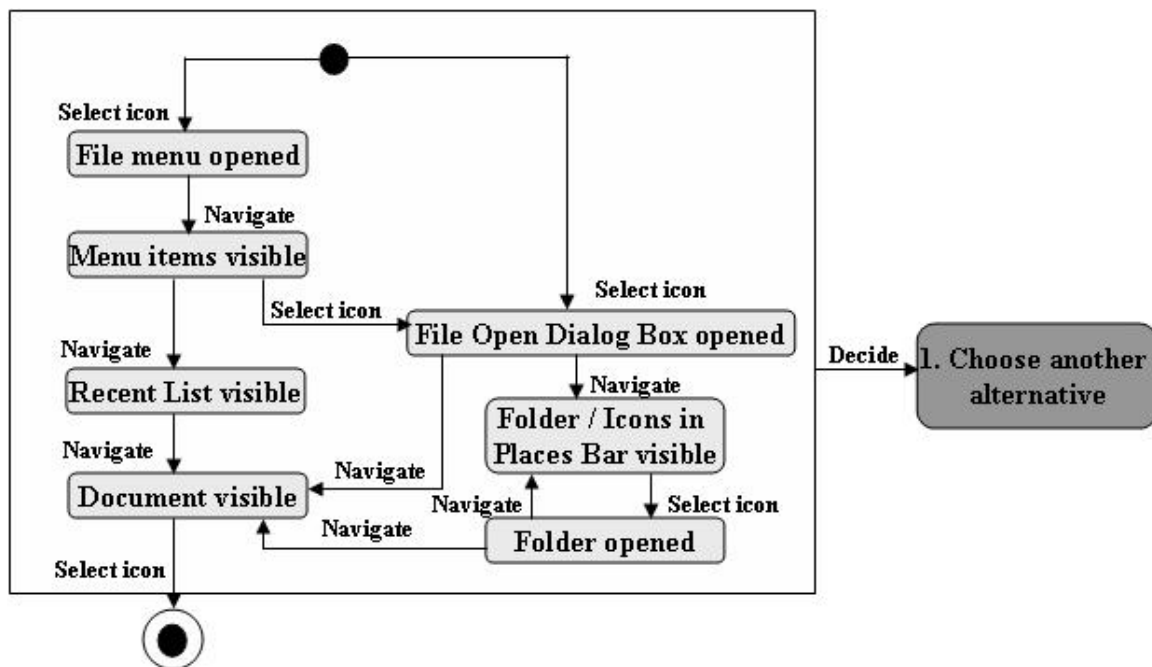


Figure 14: Open File from Application

3.5 Open file using Search

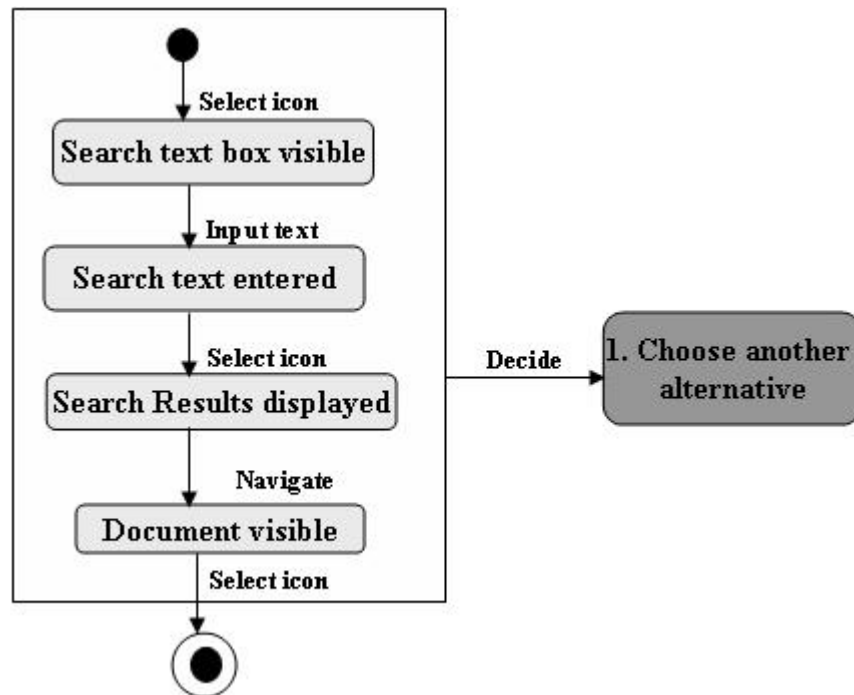


Figure 15: Open File using Search

State-transition model: Resulting 27 different ways of getting to a file for a standard Windows system

Possible Alternatives		
Number	Context	Choice within context
1	My Documents from Desktop	Click through folders
2	My Documents from Desktop	Choose file directly
3	My Computer from Desktop	Windows Explorer
4	Open new Application from Desktop	Recent List
5	Open new Application from Desktop	File Open Dialog
6	Folder shortcut from Desktop	Windows Explorer
7	Desktop	Choose file directly
8	My Computer from Start Menu	Windows Explorer
9	RUN from Start Menu	Windows Explorer
10	My Documents from Start Menu	Click through folders
11	My Documents from Start Menu	Choose file directly
12	Open application from Start Menu	Recent List
13	Open Application from Start Menu	File Open Dialog
14	Start Menu	Search
15	Start Menu	My Recent Documents
16	Address Bar	Windows Explorer
17	Address Bar	Choose file directly

18	Open folder from Quick Launch	Windows Explorer
19	Quick Launch	Choose file directly
20	Open folder from Links Toolbar	Windows Explorer
21	Links Toolbar	Choose file directly
22	Existing Windows Explorer	Choose file directly
23	Existing Windows Explorer	Use Favorites menu
24	Existing Windows Explorer	Search
25	Existing Windows Explorer	Click through folders
26	Existing Application	Recent List
27	Existing Application	File Open Dialog