GUI User Testing

Run GUI			
Action	Expected Result	Actual Result	Comments
Run GUI with	GUI opens in a maximized	GUI opens in a maximized	Functioning as
valid data file	window with three buttons	window with three buttons	expected
available	visible with help text. Map loads	visible with help text. Map loads	
	with no GPS markers visible	with no GPS markers visible	
Run GUI with no	GUI does not open	GUI does not open	Functioning as
data file available			expected

	Pre-Prediction Resize window			
Action	Expected Result	Actual Result	Comments	
Click maximize	Window resizes to smaller	Window resizes to smaller	Functioning as	
button when	version. Buttons and map scale	version. Buttons and map scale	expected	
maximized	and retain aspect ratio	and retain aspect ratio		
Change width of	Window resizes, buttons and map	Window resizes, buttons and map	Functioning as	
window	stretch/shrink but map retains	stretch/shrink but map retains	expected	
	aspect ratio with white space	aspect ratio with white space		
	filling any gaps	filling any gaps		
Change height of	Window resizes, buttons and map	Window resizes, buttons and map	Functioning as	
window	stretch/shrink but map retains	stretch/shrink but map retains	expected	
	aspect ratio with white space	aspect ratio with white space		
	filling any gaps	filling any gaps		
Change height	Window resizes, buttons and map	Window resizes, buttons and map	Functioning as	
and width of	stretch/shrink but map retains	stretch/shrink but map retains	expected	
window	aspect ratio with white space	aspect ratio with white space		
	filling any gaps	filling any gaps		
Attempt to resize	Window resizes, buttons and map	Window resizes, buttons and map	Functioning as	
to a very small	shrink but map retains aspect	shrink but map retains aspect	expected	
window	ratio with white space filling any	ratio with white space filling any		
	gaps. At a certain point, window	gaps. At a certain point, window		
	size cannot be reduced further	size cannot be reduced further		
Click maximize	Window resizes to fit screen,	Window resizes to fit screen,	Functioning as	
button when not	buttons and map stretch but map	buttons and map stretch but map	expected	
maximized	retains aspect ratio with white	retains aspect ratio with white		
	space filling any gaps	space filling any gaps		

	'Select Date' button – initial interaction (no other buttons selected)			
Action	Expected Result	Actual Result	Comments	
'Select Date' button clicked	Calendar appears with today's date selected. Future dates are 'greyed out' to indicate they are not valid selections. No other changes.	Calendar appears with today's date selected. Future dates are 'greyed out' to indicate they are not valid selections. No other changes.	Functioning as expected	
Today's date selected from calendar – data is in data file	Calendar disappears and 'select date' button text changes to date selected. No other changes.	Calendar disappears and 'select date' button text changes to date selected. No other changes.	Functioning as expected	
Today's date selected from	Calendar disappears. Error message appears informing user there is no data for the date	Calendar disappears. Error message appears informing user there is no data for the date	Functioning as expected	

calendar – data is	selected. Date button sets text to	selected. Date button sets text to	
not in data file	'Select Date' if not already set.	'Select Date' if not already set.	
	No other changes.	No other changes.	
Past date	Calendar disappears and 'select	Calendar disappears and 'select	Functioning as
selected from	date' button text changes to date	date' button text changes to date	expected
calendar – data is	selected. No other changes.	selected. No other changes.	
in data file			
Past date	Calendar disappears. Error	Calendar disappears. Error	Functioning as
selected from	message appears informing user	message appears informing user	expected
calendar – data is	there is no data for the date	there is no data for the date	
not in data file	selected. Date button sets text to	selected. Date button sets text to	
	'Select Date' if not already set.	'Select Date' if not already set.	
	No other changes.	No other changes.	
Future date	Calendar disappears and 'select	Calendar disappears and 'select	Functioning as
selected from	date' button text changes to date	date' button text changes to date	expected
calendar – data is	selected. No other changes.	selected. No other changes.	
in data file			
Future date	Calendar disappears. Error	Calendar disappears. Error	Functioning as
selected from	message appears informing user	message appears informing user	expected
calendar – data is	there is no data for the date	there is no data for the date	
not in data file	selected. Date button sets text to	selected. Date button sets text to	
	'Select Date' if not already set.	'Select Date' if not already set.	
	No other changes.	No other changes.	
'Select Date'	Calendar appears on first click	Calendar appears on first click	Functioning as
button clicked	and disappears on second click.	and disappears on second click.	expected
twice	No other changes.	No other changes.	
New date	Calendar disappears and 'select	Calendar disappears and 'select	Functioning as
selected after	date' button text changes to date	date' button text changes to date	expected
different date has	selected. No other changes.	selected. No other changes.	
already been			
selected.			

'No data for date selected' error message displayed			
Action	Expected Result	Actual Result	Comments
Click ok on error	Error message window	Error message window	Functioning as
message	disappears. No other changes.	disappears. No other changes.	expected
Error message	Error message window	Error message window	Functioning as
closed via 'cross'	disappears. No other changes.	disappears. No other changes.	expected
Click anywhere	Error message remains on screen.	Error message remains on screen.	Functioning as
else on screen.	No other changes.	No other changes.	expected

'Select Model' button – initial interaction (no other buttons selected)			
Action	Expected Result	Actual Result	Comments
'Select Model'	Dropdown menu appears with list	Dropdown menu appears with list	Functioning as
button clicked	of available machine-learning	of available machine-learning	expected
	models	models	
Model selected	Dropdown menu disappears. Text	Dropdown menu disappears. Text	Functioning as
from list	of button changes to that of the	of button changes to that of the	expected
	name of the selected model. No	name of the selected model. No	
	other changes.	other changes.	
Model selected	Dropdown menu disappears. Text	Dropdown menu disappears. Text	Functioning as
from list after	of button changes to that of the	of button changes to that of the	expected
model selected	name of the selected model. No	name of the selected model. No	
previously	other changes.	other changes.	

'Select Model'	Dropdown menu remains visible	Dropdown menu remains visible	Functioning as
button clicked	with list of available machine-	with list of available machine-	expected
twice	learning models	learning models	

'Select Feature Set' button – initial interaction (no other buttons selected)			
Action	Expected Result	Actual Result	Comments
'Select Feature	Dropdown menu appears with list	Dropdown menu appears with list	Functioning as
Set' button	of available feature sets	of available feature sets	expected
clicked			
Model selected	Dropdown menu disappears. Text	Dropdown menu disappears. Text	Functioning as
from list	of button changes to that of the	of button changes to that of the	expected
	name of the feature set selected.	name of the feature set selected.	
	No other changes.	No other changes.	
Model selected	Dropdown menu disappears. Text	Dropdown menu disappears. Text	Functioning as
from list after	of button changes to that of the	of button changes to that of the	expected
model selected	name of the feature set selected.	name of the feature set selected.	
previously	No other changes.	No other changes.	
'Select Feature	Dropdown menu remains visible	Dropdown menu remains visible	Functioning as
Set' button	with list of available machine-	with list of available machine-	expected
clicked twice	learning models	learning models	

	Making Predictions (Selecting all three buttons)			
Action	Expected Result	Actual Result	Comments	
Select valid date,	Button texts update accordingly.	Button texts update accordingly.	Functioning as	
then valid model,	On third button being selected,	On third button being selected,	expected	
then valid feature	'Calculating' text appears briefly	'Calculating' text appears briefly		
set	and is then replaced by 'Hotspot	and is then replaced by 'Hotspot		
	predictions', followed by a list of	predictions', followed by a list of		
	fifteen neighbourhoods and their	fifteen neighbourhoods and their		
	predicted crime figures. Correct	predicted crime figures. Correct		
	predictions are coloured green.	predictions are coloured green.		
	Incorrect predictions are	Incorrect predictions are		
	coloured red. The map image is	coloured red. The map image is		
	populated with 15 GPS locations,	populated with 15 GPS locations,		
	each of which corresponds to a	each of which corresponds to a		
	neighbourhood in the list.	neighbourhood in the list.		
Select valid date,	Button texts update accordingly.	Button texts update accordingly.	Functioning as	
then valid feature	On third button being selected,	On third button being selected,	expected	
set, then valid	'Calculating' text appears briefly	'Calculating' text appears briefly		
model	and is then replaced by 'Hotspot	and is then replaced by 'Hotspot		
	predictions', followed by a list of	predictions', followed by a list of		
	fifteen neighbourhoods and their	fifteen neighbourhoods and their		
	predicted crime figures. Correct	predicted crime figures. Correct		
	predictions are coloured green.	predictions are coloured green.		
	Incorrect predictions are	Incorrect predictions are		
	coloured red. The map image is	coloured red. The map image is		
	populated with 15 GPS locations,	populated with 15 GPS locations,		
	each of which corresponds to a	each of which corresponds to a		
	neighbourhood in the list.	neighbourhood in the list.		
Select valid	Button texts update accordingly.	Button texts update accordingly.	Functioning as	
model, then valid	On third button being selected,	On third button being selected,	expected	
feature set, then	'Calculating' text appears briefly	'Calculating' text appears briefly		
valid date	and is then replaced by 'Hotspot	and is then replaced by 'Hotspot		
	predictions', followed by a list of	predictions', followed by a list of		
	fifteen neighbourhoods and their	fifteen neighbourhoods and their		

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	predicted crime figures. Correct	predicted crime figures. Correct	
	predictions are coloured green.	predictions are coloured green.	
	Incorrect predictions are	Incorrect predictions are	
	coloured red. The map image is	coloured red. The map image is	
	populated with 15 GPS locations,	populated with 15 GPS locations,	
	each of which corresponds to a	each of which corresponds to a	
	neighbourhood in the list.	neighbourhood in the list.	
Select valid	Button texts update accordingly.	Button texts update accordingly.	Functioning as
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model, then valid	On third button being selected,	On third button being selected,	expected
date, then valid	'Calculating' text appears briefly	'Calculating' text appears briefly	
feature set	and is then replaced by 'Hotspot	and is then replaced by 'Hotspot	
	predictions', followed by a list of	predictions', followed by a list of	
	fifteen neighbourhoods and their	fifteen neighbourhoods and their	
	predicted crime figures. Correct	predicted crime figures. Correct	
	predictions are coloured green.	predictions are coloured green.	
	Incorrect predictions are	Incorrect predictions are	
	coloured red. The map image is	coloured red. The map image is	
	populated with 15 GPS locations,	populated with 15 GPS locations,	
	each of which corresponds to a	each of which corresponds to a	
	neighbourhood in the list.	neighbourhood in the list.	
Select valid	Button texts update accordingly.	Button texts update accordingly.	Functioning as
feature set, then	On third button being selected,	On third button being selected,	expected
valid date, then	'Calculating' text appears briefly	'Calculating' text appears briefly	Схрестей
valid model		and is then replaced by 'Hotspot	
valiu iliouei	and is then replaced by 'Hotspot		
	predictions', followed by a list of	predictions', followed by a list of	
	fifteen neighbourhoods and their	fifteen neighbourhoods and their	
	predicted crime figures. Correct	predicted crime figures. Correct	
	predictions are coloured green.	predictions are coloured green.	
	Incorrect predictions are	Incorrect predictions are	
	coloured red. The map image is	coloured red. The map image is	
	populated with 15 GPS locations,	populated with 15 GPS locations,	
	each of which corresponds to a	each of which corresponds to a	
	neighbourhood in the list.	neighbourhood in the list.	
Select valid	Button texts update accordingly.	Button texts update accordingly.	Functioning as
feature set, then	On third button being selected,	On third button being selected,	expected
valid model, then	'Calculating' text appears briefly	'Calculating' text appears briefly	'
valid date	and is then replaced by 'Hotspot	and is then replaced by 'Hotspot	
	predictions', followed by a list of	predictions', followed by a list of	
	fifteen neighbourhoods and their	fifteen neighbourhoods and their	
	predicted crime figures. Correct	1	
	_	predicted crime figures. Correct	
	predictions are coloured green.	predictions are coloured green.	
	Incorrect predictions are	Incorrect predictions are	
	coloured red. The map image is	coloured red. The map image is	
	populated with 15 GPS locations,	populated with 15 GPS locations,	
	each of which corresponds to a	each of which corresponds to a	
	neighbourhood in the list.	neighbourhood in the list.	
All three buttons	Date button text updates	Date button text updates	Functioning as
set; prediction	accordingly. Previous text	accordingly. Previous text	expected
already made.	predictions disappear, and map	predictions disappear, and map	
Date button	clears. 'Calculating' text	clears. 'Calculating' text	
changed to	appears briefly and is then	appears briefly and is then	
different valid	replaced by 'Hotspot predictions',	replaced by 'Hotspot predictions',	
date.	followed by a list of fifteen	followed by a list of fifteen	
3000	neighbourhoods and their	neighbourhoods and their	
	predicted crime figures. Correct	predicted crime figures. Correct	
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	predictions are coloured green. Incorrect predictions are	predictions are coloured green. Incorrect predictions are	
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	coloured red. The map image is	coloured red. The map image is	
	populated with 15 new GPS	populated with 15 new GPS	
	locations, each of which	locations, each of which	
	corresponds to a neighbourhood	corresponds to a neighbourhood	
	in the list.	in the list.	
All three buttons	Model button text updates	Model button text updates	Functioning as
set; prediction	accordingly. Previous text	accordingly. Previous text	expected
already made.	predictions disappear, and map	predictions disappear, and map	
Model button	clears. 'Calculating' text	clears. 'Calculating' text	
changed to	appears briefly and is then	appears briefly and is then	
different valid	replaced by 'Hotspot predictions',	replaced by 'Hotspot predictions',	
model.	followed by a list of fifteen	followed by a list of fifteen	
	neighbourhoods and their	neighbourhoods and their	
	predicted crime figures. Correct	predicted crime figures. Correct	
	predictions are coloured green.	predictions are coloured green.	
	Incorrect predictions are	Incorrect predictions are	
	coloured red. The map image is	coloured red. The map image is	
	populated with 15 new GPS	populated with 15 new GPS	
	locations, each of which	locations, each of which	
	corresponds to a neighbourhood	corresponds to a neighbourhood	
	in the list.	in the list.	
All three buttons	Feature set button text updates	Feature set button text updates	Functioning as
set; prediction	accordingly. Previous text	accordingly. Previous text	expected
already made.	predictions disappear, and map	predictions disappear, and map	скрессей
Feature set	clears. 'Calculating' text	clears. 'Calculating' text	
button changed	appears briefly and is then	appears briefly and is then	
to different valid	replaced by 'Hotspot predictions',	replaced by 'Hotspot predictions',	
feature set.	followed by a list of fifteen	followed by a list of fifteen	
leature set.	neighbourhoods and their	neighbourhoods and their	
	predicted crime figures. Correct	predicted crime figures. Correct	
	predictions are coloured green.	predictions are coloured green.	
	Incorrect predictions are	Incorrect predictions are	
	coloured red. The map image is	coloured red. The map image is	
	populated with 15 new GPS	populated with 15 new GPS	
	locations, each of which	locations, each of which	
	corresponds to a neighbourhood in the list.	corresponds to a neighbourhood	
Coloat valid data		in the list.	C
Select valid date,	All button texts update	All button texts update	Functioning as
then valid model,	accordingly. 'Calculating' text	accordingly. 'Calculating' text	expected.
then invalid	briefly appears before	briefly appears before	'Calculating'
feature set	disappearing and 'loading model	disappearing and 'loading model	sometimes never
	failed' error message box	failed' error message box	visible to human eye
	appears. No other changes.	appears. No other changes.	due to speed of error
			message appearing.
			This is perfectly
	All a control	All I	acceptable.
Select valid date,	All button texts update	All button texts update	Functioning as
then valid feature	accordingly. 'Calculating' text	accordingly. 'Calculating' text	expected.
set, then invalid	briefly appears before	briefly appears before	
model	disappearing and 'loading model	disappearing and 'loading model	
	failed' error message box	failed' error message box	
	appears. No other changes.	appears. No other changes.	
Select valid	'No data found' error message	'No data found' error message	Functioning as
model, then valid	displayed. No other changes.	displayed. No other changes.	expected.
feature set, then			
invalid date			

Select valid	All button texts update	All button texts update	Eunctioning as
model, then valid	accordingly. 'Calculating' text	accordingly. 'Calculating' text	Functioning as expected.
date, then invalid	briefly appears before	briefly appears before	expected.
feature set	disappearing and 'loading model	disappearing and 'loading model	
leature set			
	failed' error message box	failed' error message box	
Calantarilla	appears. No other changes.	appears. No other changes.	E controller con
Select valid	All button texts update	All button texts update	Functioning as
feature set, then	accordingly. 'Calculating' text	accordingly. 'Calculating' text	expected.
valid date, then	briefly appears before	briefly appears before	
invalid model	disappearing and 'loading model	disappearing and 'loading model	
	failed' error message box	failed' error message box	
	appears. No other changes.	appears. No other changes.	
Select valid	'No data found' error message	'No data found' error message	Functioning as
feature set, then	displayed. No other changes.	displayed. No other changes.	expected.
valid model, then			
invalid date			
All three buttons	Previous text predictions	Previous text predictions	Functioning as
set; prediction	disappear, and map clears.	disappear, and map clears.	expected.
already made.	'Select Date' button text reverts	'Select Date' button text reverts	
Date button	to helper text. 'No data found'	to helper text. 'No data found'	
changed to	error message displayed. No	error message displayed. No	
invalid date.	other changes.	other changes.	
All three buttons	Previous text predictions	Previous text predictions	Functioning as
set; prediction	disappear, and map clears.	disappear, and map clears.	expected.
already made.	'Calculating' text briefly appears	'Calculating' text briefly appears	
Model button	before disappearing and 'loading	before disappearing and 'loading	
changed to	model failed' error message box	model failed' error message box	
invalid model.	appears. No other changes.	appears. No other changes.	
All three buttons	Previous text predictions	Previous text predictions	Functioning as
set; prediction	disappear, and map clears.	disappear, and map clears.	expected.
already made.	'Calculating' text briefly appears	'Calculating' text briefly appears	
Feature set	before disappearing and 'loading	before disappearing and 'loading	
button changed	model failed' error message box	model failed' error message box	
to invalid feature	appears. No other changes.	appears. No other changes.	
set.			
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'Loading model failed' error message displayed					
Action	Expected Result	Actual Result	Comments		
Click ok on error	Error message window	Error message window	Functioning as		
message	disappears. No other changes.	disappears. No other changes.	expected		
Error message closed via 'cross'	Error message window disappears. No other changes.	Error message window disappears. No other changes.	Functioning as expected		
Click anywhere else on screen.	Error message remains on screen. No other changes.	Error message remains on screen. No other changes.	Functioning as expected		

Post-Prediction Resize window					
Action	Expected Result	Actual Result	Comments		
Click maximize	Window resizes to smaller	Window resizes to smaller	Functioning as		
button when	version. Buttons and map scale	version. Buttons and map scale	expected		
maximized	and retain aspect ratio. GPS	and retain aspect ratio. GPS			
	markers reposition correctly.	markers reposition correctly.			
	Prediction text remains visible.	Prediction text remains visible.			
Change width of	Window resizes, buttons and map	Window resizes, buttons and map	Functioning as		
window	stretch/shrink but map retains	stretch/shrink but map retains	expected		
	aspect ratio with white space	aspect ratio with white space			

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	filling any gaps. GPS markers	filling any gaps. GPS markers	
	reposition correctly. Prediction	reposition correctly. Prediction	
	text remains visible.	text remains visible.	
Change height of	Window resizes, buttons and map	Window resizes, buttons and map	Functioning as
window	stretch/shrink but map retains	stretch/shrink but map retains	expected
	aspect ratio with white space	aspect ratio with white space	
	filling any gaps. GPS markers	filling any gaps. GPS markers	
	reposition correctly. Prediction	reposition correctly. Prediction	
	text remains visible.	text remains visible.	
Change height	Window resizes, buttons and map	Window resizes, buttons and map	Functioning as
and width of	stretch/shrink but map retains	stretch/shrink but map retains	expected
window	aspect ratio with white space	aspect ratio with white space	
	filling any gaps. GPS markers	filling any gaps. GPS markers	
	reposition correctly. Prediction	reposition correctly. Prediction	
	text remains visible.	text remains visible.	
Attempt to resize	Window resizes, buttons and map	Window resizes, buttons and map	Functioning as
to a very small	shrink but map retains aspect	shrink but map retains aspect	expected
window	ratio with white space filling any	ratio with white space filling any	
	gaps. At a certain point, window	gaps. At a certain point, window	
	size cannot be reduced further.	size cannot be reduced further.	
	GPS markers reposition correctly.	GPS markers reposition correctly.	
	Prediction text remains visible.	Prediction text remains visible.	
Click maximize	Window resizes to fit screen,	Window resizes to fit screen,	Functioning as
button when not	buttons and map stretch but map	buttons and map stretch but map	expected
maximized	retains aspect ratio with white	retains aspect ratio with white	
	space filling any gaps. GPS	space filling any gaps. GPS	
	markers reposition correctly.	markers reposition correctly.	
	Prediction text remains visible.	Prediction text remains visible.	