



# HashCode Tester Documentation

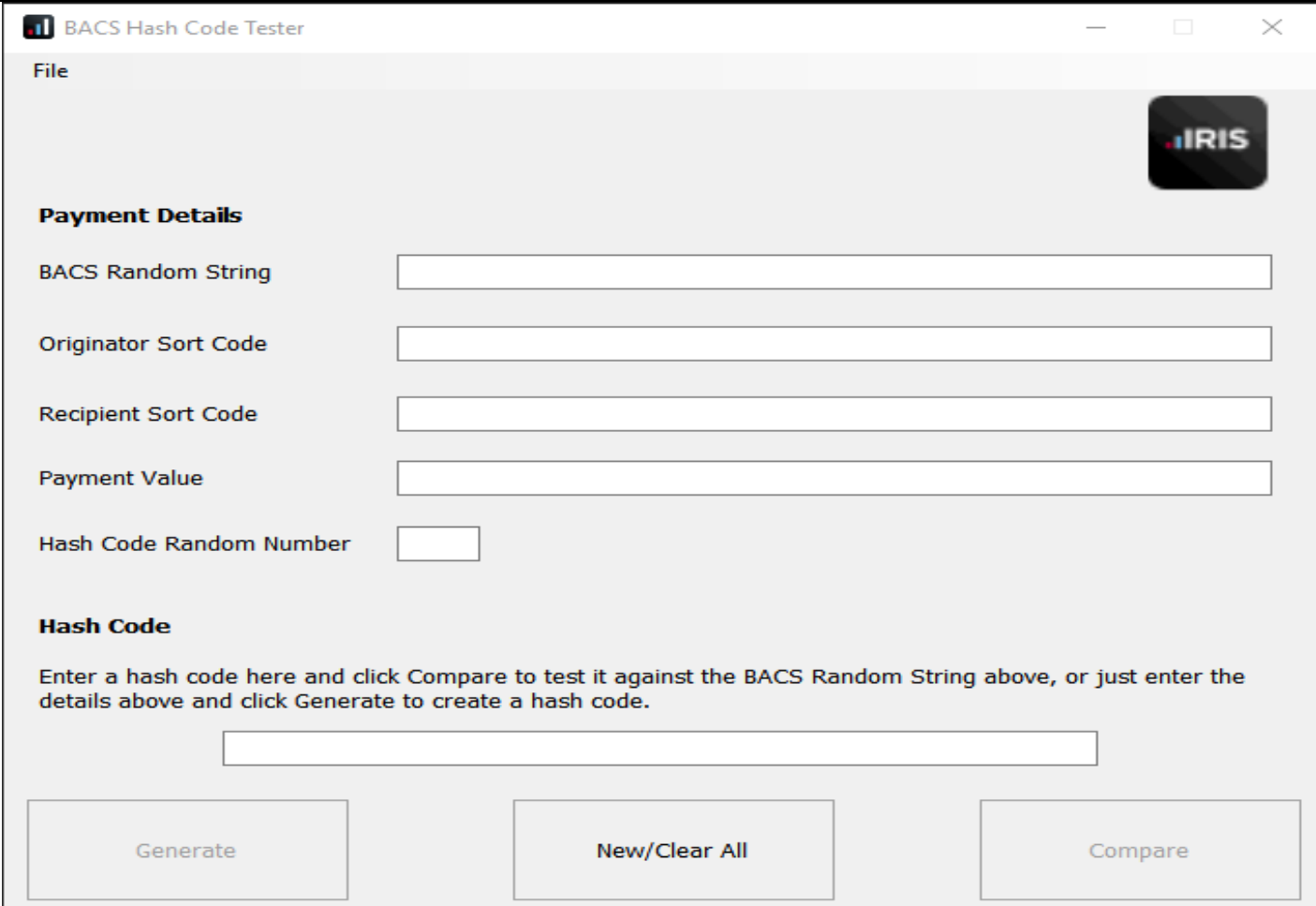
## Document History

Version	Date	Author	Details
1.0	14/11/2019	Richard	Initial Draft

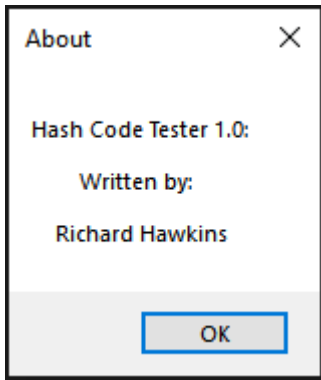
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## 1. HashCode Tester Screen Design

Test No.	Ref	Test
1.1.		HashCode Tester Screen Design
<b>Expected Procedure &amp; Outcome</b>		
		
Test No.	Ref	Test
1.2.		
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>

## 2. Functions

Test No.	Ref	Test
2.1.		File menu
<b>Expected Procedure &amp; Outcome</b>		
Added a File menu with the following items: <ul style="list-style-type: none"><li>New/Clear All (the keyboard shortcut is 'Alt + C') (This clear <b>all</b> textboxes of information)</li><li>Help (the keyboard shortcut is 'F1') (This displays the help file)</li></ul> Exit (the keyboard shortcut is 'Alt + X') (This exits the HashCode Tester)		
Test No.	Ref	Test
2.2.		Picturebox
<b>Expected Procedure &amp; Outcome</b>		
Created a picturebox icon that displays the author & version of the program.		
		
Test No.	Ref	Test
2.3.		Frames
<b>Expected Procedure &amp; Outcome</b>		
Created 2 frames <ol style="list-style-type: none"><li>Payment Details</li><li>Hash Code</li></ol>		
Test No.	Ref	Test
2.4.		Text boxes
<b>Expected Procedure &amp; Outcome</b>		
Created 6 text boxes: <ol style="list-style-type: none"><li>The 'BACS Random String' textbox allows any character up to a maximum of 64.</li><li>The 'Originator Sort Code' textbox allows up to 6 numerical characters only, a warning message will be displayed if the digits are below 6.</li><li>The 'Recipient Sort Code' textbox allows up to 6 numerical characters only, a warning message will be displayed if the digits are below 6.</li><li>The 'Payment Value' textbox allows up to 12 numerical characters only, including negative values.</li><li>The 'Hash Code Random Number' textbox allows any character up to a maximum of 4. A warning message will be displayed if the digits are below 4.</li><li>The Hash Code textbox will display the Hash Code generated from once the above textboxes have been fully completed. In addition, this textbox allows any character up to a maximum of 64.</li></ol>		

Test No.	Ref	Test
2.5.		Buttons
<b>Expected Procedure &amp; Outcome</b>		
Added a 'New/Clear All' button to clear <b>all</b> textboxes of information		
Added a 'Generate' button to generate the Hash-256 code		
Added a 'Compare' button, to compare the 2 BACS Hash codes & added code to verify that the 2 hash codes do or do not match.		
<b>Note:</b> Both the 'Generate' & 'Compare' buttons will be disabled until the details have been entered fully within the 'Payment Details' frame.		
Test No.	Ref	Test
2.6.		Tooltips
<b>Expected Procedure &amp; Outcome</b>		
Added tooltips for all textboxes & buttons		
Test No.	Ref	Test
2.7.		
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>

### 3. Use of the HashCode Tester

Test No.	Ref	Test
3.1.		How to Use (step-by-step guide)
<b>Expected Procedure &amp; Outcome</b>		
<b>Pass</b>		
<p>1<sup>st</sup> step: Ensure that the employees are to be paid via BACS</p> <p>2<sup>nd</sup> step: Print out a report displaying the employee's pay details, including the Hash Code</p> <p>3<sup>rd</sup> step: Submit your FPS</p> <p>4<sup>th</sup> step: Open your send.xml file, usually located in the 'xml' directory of your installation folder</p> <p>5<sup>th</sup> step: Locate the BACS random string that was created by your payroll product &amp; paste that into the 'BACS Random String' textbox.</p> <p>6<sup>th</sup> step: Enter the employer's sort code in the format of nnnnnn [6n]</p> <p>7<sup>th</sup> step: Enter the employee's sort code in the format of nnnnnn [6n]</p> <p>8<sup>th</sup> step: Enter the employee's NET pay, up to a maximum value of 12 digits.</p> <p>9<sup>th</sup> step: Enter the Hash Code generated by your payroll product</p> <p>10<sup>th</sup> step: Once all the above has been entered, clicking the 'Generate' button will display the Hash Code.</p> <p>11<sup>th</sup> step: Clicking the 'Compare' button will compare step 5 with step 10.</p> <p>12<sup>th</sup> step: This will clear all data on the screen, ready for the whole process to start over.</p>		
<b>Note:</b> different payroll products may differ in the steps required.		
Test No.	Ref	Test
3.2.		
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>

## 4. Functional Unit Tests

Test No.	Ref	Test
4.1.		File menu
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>
<p>Check that a File menu has been added to the 'HashCode tester' with the following 3 items:</p> <ol style="list-style-type: none"> <li>1. New/Clear All</li> </ol> <p>Check that clicking 'New/Clear All' menu item must clear all textboxes of information without error.</p> <p>Check that the keyboard shortcut of 'Alt + C' must behave in the same way as clicking the 'New/Clear All' menu item.</p> <p><b>HashCodeForm1.cs code lines: 402-417</b></p> <p>Check that once the keyboard shortcut of 'Alt + C' has been used, focus will be in the 'BACS Random String' textbox.</p> <p><b>HashCodeForm1.cs code line: 419</b></p> <ol style="list-style-type: none"> <li>2. Help</li> </ol> <p>Check that clicking 'Help' menu item must display the 'Help' file without error.</p> <p>Check that the keyboard shortcut of 'F1' must behave in the same way as clicking the 'Help' menu item.</p> <p><b>HashCodeForm1.cs code lines: 398-401</b></p> <ol style="list-style-type: none"> <li>3. Exit</li> </ol> <p>Check that clicking 'Exit' menu item must display a message asking if exiting the application is what you want to do, with 'Yes/No' buttons without error.</p> <p>Check that clicking the 'No' button must return you back to the 'HashCode Tester' main screen without error.</p> <p>Check that clicking the 'Yes' button must exit the application without error.</p> <p>Check that the keyboard shortcut of 'Exit' must display a message asking if exiting the application is what you want to do, with 'Yes/No' buttons without error.</p> <p>Check that clicking the 'No' button must return you back to the 'HashCode Tester' main screen without error.</p> <p>Check that clicking the 'Yes' button must exit the application without error.</p> <p><b>HashCodeForm1.cs code lines: 176-179</b></p>		
4.2.		Picturebox
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>
<p>Check that clicking the Picturebox icon must display a <a href="#">message</a> showing the version of the application &amp; the author of the software.</p> <p><b>HashCodeForm1.cs code lines: 33-36</b></p>		

Test No.	Ref	Test
4.3.		Frames
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>
<p>Check that there are 2 frames called:</p> <ol style="list-style-type: none"> <li>1. Payment Details</li> </ol> <p><b>HashCodeForm1.cs code lines: 17-21</b></p> <p>Check that the following textboxes are contained within the above frame</p> <ul style="list-style-type: none"> <li>• BACS Random String</li> <li>• Originator Sort Code</li> <li>• Recipient Sort Code</li> <li>• Payment Value</li> <li>• Hash Code Random Number</li> </ul> <ol style="list-style-type: none"> <li>2. Hash Code</li> </ol> <p><b>HashCodeForm1.cs code lines: 24-26</b></p> <p>Check that a textbox is contained within the above frame, this is where the BACS Hash Code is displayed when the 'Generate' button is clicked &amp; all pertinent information has been entered.</p>		
Test No.	Ref	Test
4.4.		Text Boxes
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>
<p>Check that there are 6 text boxes:</p> <ol style="list-style-type: none"> <li>1. BACS Random String</li> </ol> <p>Check that this textbox allows any character up to a maximum of 64.</p> <p>Check that this textbox allows alphanumeric &amp; special characters</p> <p><b>HashCodeForm1.cs code lines: 146-150</b></p> <p>Check that if you leave this 'BACS Random String' empty, a message will be displayed with the text 'Please enter the BACS Random String!'.</p> <p>Check that after clicking 'OK' to the above-mentioned message, the 'BACS Random String' field will be highlighted in yellow.</p> <p><b>HashCodeForm1.cs code lines: 258-261</b></p>		

Test No.	Ref	Test
4.1.		File menu
Expected Procedure & Outcome		Pass
<p>2. Originator Sort Code</p> <p>The 'Originator Sort Code' textbox allows up to 6 numerical characters only, a warning message will be displayed if the digits are below 6.</p> <p><b>HashCodeForm1.cs code lines: 160-164</b></p> <p>Check that if you leave this 'Originator Sort Code' empty, a message will be displayed advising of the correct sort code format.</p> <p>Check that after clicking 'OK' to the above-mentioned message, the 'Originator Sort Code' field will be highlighted in yellow.</p> <p><b>HashCodeForm1.cs code lines: 262-265</b></p> <p>3. Recipient Sort Code</p> <p>The 'Recipient Sort Code' textbox allows up to 6 numerical characters only, a warning message will be displayed if the digits are below 6.</p> <p><b>HashCodeForm1.cs code lines: 166-169</b></p> <p>Check that if you leave this 'Recipient Sort Code' empty, a message will be displayed advising of the correct sort code format.</p> <p>Check that after clicking 'OK' to the above-mentioned message, the 'Recipient Sort Code' field will be highlighted in yellow.</p> <p><b>HashCodeForm1.cs code lines: 266-269</b></p> <p>4. Payment Value</p> <p>The 'Payment Value' textbox allows up to 12 numerical characters only, including negative values.</p> <p><b>HashCodeForm1.cs code lines: 171-174</b></p> <p>Check that if you leave this 'Payment Value' empty, a message will be displayed with the text 'Please enter the employee's NET pay'</p> <p>Check that after clicking 'OK' to the above-mentioned message, the 'Payment Value' field will be highlighted in yellow.</p> <p><b>HashCodeForm1.cs code lines: 270-273</b></p>		



Test No.	Ref	Test
4.1.		File menu
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>
<p>5. Hash Code Random Number</p> <p>The 'Hash Code Random Number' textbox allows any character up to a maximum of 4. A warning message will be displayed if the digits are below 4.</p> <p><b>HashCodeForm1.cs code lines: 93-102</b></p> <p>Check that if you leave this 'Hash Code Random Number' empty, a message will be displayed with the text 'Please enter the Hash Code Number!'</p> <p>Check that after clicking 'OK' to the above-mentioned message, the 'Hash Code Random Number' field will be highlighted in yellow.</p> <p><b>HashCodeForm1.cs code lines: 2740-277</b></p> <p>6. The Hash Code textbox will display the Hash Code generated, once the above textboxes have been fully completed. In addition, this textbox allows any character up to a maximum of 64.</p> <p><b>HashCodeForm1.cs code lines: 93-102</b></p> <p>Check that this textbox allows alphanumeric &amp; special characters</p> <p>The Hash Code textbox will display the Hash Code generated from once the above textboxes have been fully completed. In addition, this textbox allows any character up to a maximum of 64.</p>		
Test No.	Ref	Test
4.5.		Buttons
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>
<p>Check that there will be 3 buttons positioned at the bottom of the 'HashCode Tester' screen:</p> <p>1. Generate</p> <p>Check that the above button will be disabled, until the textboxes (i.e. 'BACS Random String', 'Originator Sort Code', 'Recipient Sort Code', 'Payment Value' &amp; 'Hash Code Random Number') have been correctly completed.</p> <p>Check that once all mentioned textboxes have been completed, the 'Generate' button will become enabled.</p> <p>Check that clicking the 'Generate' button will create the BACS Hash-256 Code &amp; display this code within the 'Hash Code' textbox.</p>		

Test No.	Ref	Test
4.1.		File menu
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>
<p><b>HashCodeForm1.cs code lines: 50-61</b></p> <p>2. New/Clear All</p> <p>Check that the above button will always be enabled.</p> <p>Check that clicking the above button will clear all textboxes of information, displaying a message asking if this is what you want to do, with 'Yes/No' buttons</p> <p>Check that clicking 'No' will close the message taking you back to the 'HashCode Tester' screen, without error.</p> <p>Check that clicking 'Yes' will close the message &amp; delete all the information entered in the textboxes above, all without error.</p> <p><b>HashCodeForm1.cs code lines: 37-49</b></p> <p>Check that once the 'New/Clear All' button has been used; focus will be in the 'BACS Random String' textbox.</p> <p><b>HashCodeForm1.cs code line: 256</b></p> <p>3. Compare</p> <p>Check that once the 'BACS Random String' has been copied/pasted from your payroll product, the 'Generate' button will automatically move from disabled to enabled.</p> <p><b>HashCodeForm1.cs code lines: 62-90</b></p> <p><b>Note:</b> Both the 'Generate' &amp; 'Compare' buttons will be disabled until the details have been entered fully within the 'Payment Details' frame.</p>		
Test No.	Ref	Test
4.6.		Tooltips
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>
<ul style="list-style-type: none"> <li>Check that a tooltip has been added to the 'BACS Random String' textbox &amp; the tooltip will be: 'Copy &amp; Paste the BACS hash code from your payroll product'</li> </ul> <p><b>HashCodeForm1.cs code lines: 293-294</b></p> <ul style="list-style-type: none"> <li>Check that a tooltip has been added to the 'Originator Sort Code' textbox &amp; the tooltip will be: 'Enter the Employers Bank Sort Code'</li> </ul> <p><b>HashCodeForm1.cs code lines: 297-298</b></p> <ul style="list-style-type: none"> <li>Check that a tooltip has been added to the 'Recipient Sort Code' textbox &amp; the tooltip will be: 'Enter the Employees Bank Sort Code'</li> </ul> <p><b>HashCodeForm1.cs code lines: 301-302</b></p>		

Test No.	Ref	Test
4.1.		File menu
Expected Procedure & Outcome		Pass
<ul style="list-style-type: none"><li>Check that a tooltip has been added to the 'Payment Value' textbox &amp; the tooltip will be: 'Enter the Employees NET pay'</li></ul> <b>HashCodeForm1.cs code lines: 305-306</b> <ul style="list-style-type: none"><li>Check that a tooltip has been added to the 'Hash Code Random Number' textbox &amp; the tooltip will be: 'Enter the Hash Code'</li></ul> <b>HashCodeForm1.cs code lines: 309-310</b> <ul style="list-style-type: none"><li>Check that a tooltip has been added to the 'Hash Code' textbox &amp; the tooltip will be: 'Copy &amp; Paste the 'BACS Hash Code' to Compare or click Generate'</li></ul> <b>HashCodeForm1.cs code lines: 313-314</b> <ul style="list-style-type: none"><li>Check that a tooltip has been added to the 'Generate' button &amp; the tooltip will be: 'Generate a hash code'</li></ul> <b>HashCodeForm1.cs [Design] tooltip1</b> <ul style="list-style-type: none"><li>Check that a tooltip has been added to the 'New/Clear All' button &amp; the tooltip will be: 'Clear all details'</li></ul> <b>HashCodeForm1.cs [Design] tooltip2</b> <ul style="list-style-type: none"><li>Check that a tooltip has been added to the 'Compare' button &amp; the tooltip will be: 'Compare hash codes'</li></ul> <b>HashCodeForm1.cs [Design] tooltip3</b>		
Test No.	Ref	Test
4.7.		
Expected Procedure & Outcome		Pass

## 5. Location of Functions

Test No.	Ref	Test
5.1.		Location of Functions
<b>Expected Procedure &amp; Outcome</b>		
<ul style="list-style-type: none"> <li>Frame title: Payment Details: HashCodeForm1 = 20-23</li> <li>Frame title: Hash Code: HashCodeForm1 = 26-28</li> <li>Icon title: About Box: HashCodeForm1 = 34-38</li> <li>Button title: New/Clear All: HashCodeForm1 = 39-51</li> <li>Button title: Generate: HashCodeForm1 = 52-63</li> <li>Button title: Compare: HashCodeForm1 = 64-82</li> <li>Textbox title: Originator Sort Code: HashCodeForm1 = 161-165</li> <li>Textbox title: Recipient Sort Code: HashCodeForm1 = 166-170</li> <li>Textbox title: Payment Value: HashCodeForm1 = 171-175</li> <li>Menu strip: Exit: HashCodeForm1 = 176-180</li> <li>Click on Close icon (top right): HashCodeForm1 = 190-192</li> <li>Only allow numeric characters: Payment value: HashCodeForm1 = 200-216</li> <li>Only allow numeric characters: Recipient Sort Code: HashCodeForm1 = 217-221</li> <li>Only allow numeric characters: Originator Sort Code: HashCodeForm1 = 222-226</li> <li>Enable buttons: HashCodeForm1 = 360-378</li> <li>BACS Random String highlight &amp; validate: HashCodeForm1 = 419-441</li> <li>Originator Sort Code highlight &amp; validate: HashCodeForm1 = 442-464</li> <li>Recipient Sort Code highlight &amp; validate: HashCodeForm1 = 465-487</li> <li>Payment Value highlight &amp; validate: HashCodeForm1 = 488-510</li> <li>Random Number highlight &amp; validate: HashCodeForm1 = 511-533</li> </ul>		
Generated Hash highlight & validate: HashCodeForm1 = 534-550		
Test No.	Ref	Test
5.2.		
<b>Expected Procedure &amp; Outcome</b>		<b>Pass</b>

## 6. For Future Use

Test No.	Ref	Test
6.1.		
Expected Procedure & Outcome		Pass
Test No.	Ref	Test
6.2.		
Expected Procedure & Outcome		Pass
Test No.	Ref	Test
6.3.		
Expected Procedure & Outcome		Pass
Test No.	Ref	Test
6.4.		
Expected Procedure & Outcome		Pass
Test No.	Ref	Test
6.5.		
Expected Procedure & Outcome		Pass
Test No.	Ref	Test
6.6.		
Expected Procedure & Outcome		Pass
Test No.	Ref	Test
6.7.		
Expected Procedure & Outcome		Pass
Test No.	Ref	Test
6.8.		
Expected Procedure & Outcome		Pass