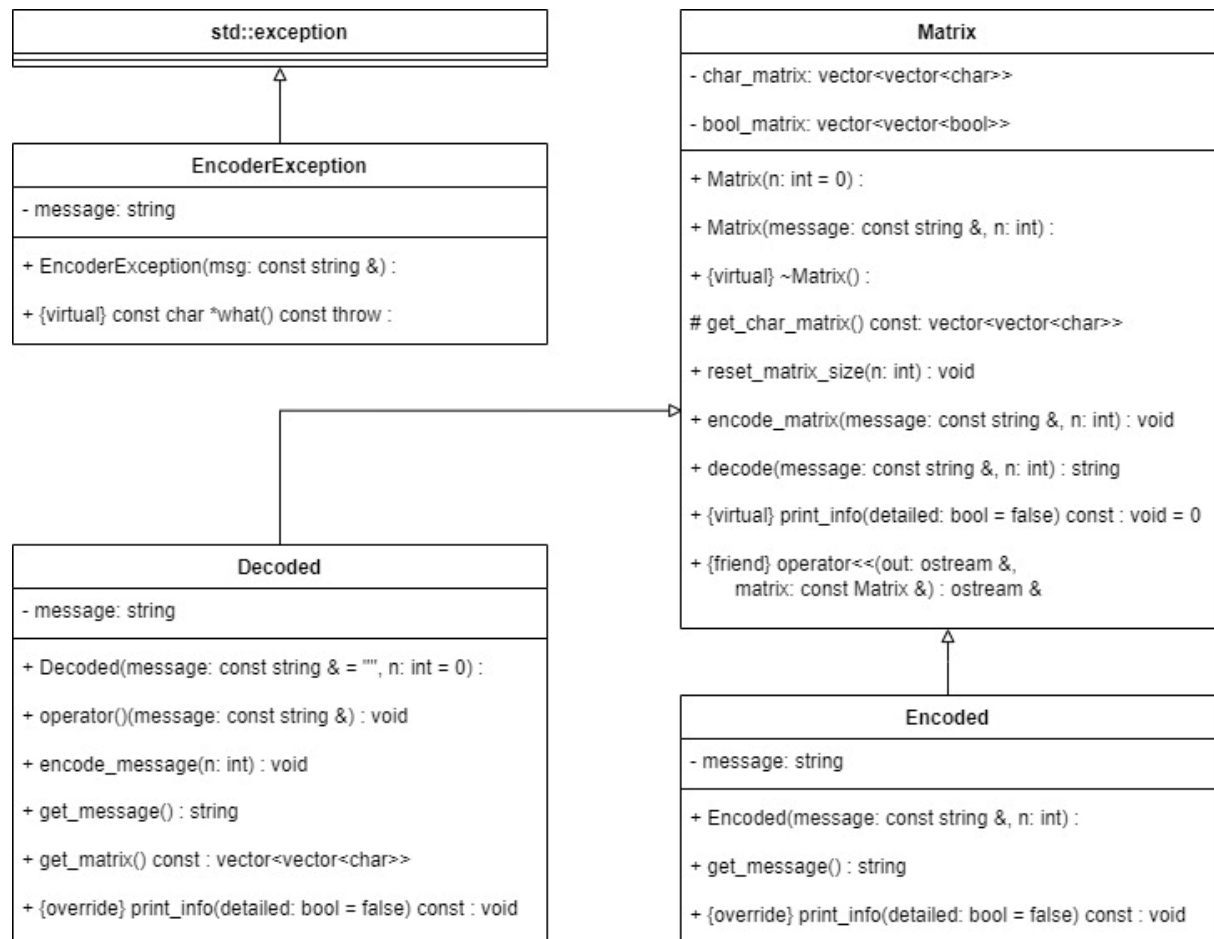


OOP ASSIGNMENT DOCUMENTATION (2800ICT)

Matthew Prendergast - s5283740

UML DIAGRAM



TESTING

OPTION	NORMAL INPUT	ABNORMAL INPUT
1	<pre> ***** * 1. Enter a message * * 2. Load an encoded message from a file * * 3. Encode a message * * 4. Decode a message * * 5. Save the encoded & decoded message to a file * * 6. Quit * ***** ENTER YOUR SELECTION: 1 ENTER MESSAGE (TYPE 'QUIT' TO RETURN TO MENU): GENERALTSONEEDSCHICKENNOW WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): n Encoded Message: FGIEPVKCONSRKJBEDNCANGEEWNLHDEKOITKUHNCSPPJFOKHZ ***** * 1. Enter a message * * 2. Load an encoded message from a file * * 3. Encode a message * * 4. Decode a message * * 5. Save the encoded & decoded message to a file * * 6. Quit * ***** ENTER YOUR SELECTION: 1 ENTER MESSAGE (TYPE 'QUIT' TO RETURN TO MENU): GENERALTSONEEDSCHICKENNOW WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): y MATRIX SIZE (RANGE: 7 - 31): 31 Encoded Message: JAWQQYADYLUBJCFKIMGRVCTUXUBSOIHAXEPHXZAXLSKHMZVHBRBCUFLKJQLFFXTPSEQJFNDNFHDXBFEQQNIX TTTRFPTLXVPLXQUTEBQQHBCPYQLFTRPECTGHIHACTDSBESZUTLKAKFBQZTLBEGQKFPGBXQBGWNKSJZXVUUEPVOUQGJITIJTCHACC OZOLTYBMHMXNKGWXSPPFWMEVDFSGICVHKILVDJQENBYVQJXWIBADXDQQTMEVNIIVFQELTPZCUOCYVDSNATRTKMLVEYHLJLKWUMPNIT SFQNTZEMCUIEDAGWITQKQLDVERMLQRGSFEXYUMXYJZERLZTWMPYPBYRMVEGZOZHAQZVTRXJPHESDHJFUOMZOIRWYXCTADXPZDNDNCNR TZPCKTWRFFOKKCPOMEVZCSGSRWUEUDUCMMXYIPFJIVEODJMDBCMVCGGWDMYFESUBUNXYIBFMSFYKIHRSRREZFYIHENFSPRLBITGG YZDRGEARJDKMLBYBYSAKKCUCPMXJAPVXYLIUOTYVXXPRKPRVFZHHKODDQZVWYXZKAETNFVINCYPYHVAOMXONOBVRVQLAVTEUTFO HELOBLQWZQZDIEQTNEXFROADZFRHHRBQYVYVWVGSEFPEBULKIRFWGCUUEYJBAHZPSNATARTPUZSSBMMKPTNMIPFKALTAQJQJSMFINZS YEPHJNHITQJTBUXWFKTSNDFZSRMZYZJZDBVRMFJAXODLFCGILZYTQQQZZVYVFKFTHXRZCTXXZSMHDBDWSXCUGARPGVQJUZJZYTWCFMEK EMAQJBMABZNMCSPTGOONSARJPKPFVWMLDRHSHSCJAMLMBPMXTBMTGEPZSIMONDMEHQAGGDUFPGGIBCEMMDYBBXQQUSELHUMJQZPUJQNH SHKTLVONCGNEXVIVSLSLJBOE ***** * 1. Enter a message * * 2. Load an encoded message from a file * * 3. Encode a message * * 4. Decode a message * * 5. Save the encoded & decoded message to a file * * 6. Quit * ***** ENTER YOUR SELECTION: 1 ENTER MESSAGE (TYPE 'QUIT' TO RETURN TO MENU): quit </pre>	<pre> ***** * 1. Enter a message * * 2. Load an encoded message from a file * * 3. Encode a message * * 4. Decode a message * * 5. Save the encoded & decoded message to a file * * 6. Quit * ***** ENTER YOUR SELECTION: 0 ERROR: Invalid selection. Please select from the menu above. ***** * 1. Enter a message * * 2. Load an encoded message from a file * * 3. Encode a message * * 4. Decode a message * * 5. Save the encoded & decoded message to a file * * 6. Quit * ***** ENTER YOUR SELECTION: 1 ENTER MESSAGE (TYPE 'QUIT' TO RETURN TO MENU): JAWQQYADYLUBJCFKIMGRVCTUXUBSOIHAXEPHXZAXLSKHMZV HBRBCUFLKJQLFFXTPSEQJFNDNFHDXBFEQQNIXTTTRFPTLXVPLXQUTEBQQHBCPYQLFTRPECTGHIHACTDSBESZUTLKAKFBQZTL BEGQKFPGBXQBGWNKSJZXVUUEPVOUQGJITIJTCHACCZOLTYBMHMXNKGWXSPPFWMEVDFSGICVHKILVDJQENBYVQJXWIBADXDQQT MEVNIIVFQELTPZCUOCYVDSNATRTKMLVEYHLJLKWUMPNITSFQNTZEMCUIEDAGWITQKQLDVERMLQRGSFEXYUMXYJZERLZTWMPYP BYRMVEGZOZHAQZVTRXJPHESDHJFUOMZOIRWYXCTADXPZDNDNCNRNZPCKTWRFFOKKCPOMEVZCSGSRWUEUDUCMMXYIPFJIVEOD JMDBCMVCGGWDMYFESUBUNXYIBFMSFYKIHRSRREZFYIHENFSPRLBITGGYZDRGEARJDKMLBYBYSAKKCUCPMXJAPVXYLIUOTYVXX PRKPRVFZHHKODDQZVWYXZKAETNFVINCYPYHVAOMXONOBVRVQLAVTEUTFOHELOBLQWZQZDIEQTNEXFROADZFRHHRBQYVYVWVG SEFPEBULKIRFWGCUUEYJBAHZPSNATARTPUZSSBMMKPTNMIPFKALTAQJQJSMFINZSYEPHJNHITQJTBUXWFKTSNDFZSRMZYZJZ DBVRMFJAXODLFCGILZYTQQQZZVYVFKFTHXRZCTXXZSMHDBDWSXCUGARPGVQJUZJZYTWCFMEKEMAQJBMABZNMCSPTGOONSARJ PKPFVWMLDRHSHSCJAMLMBPMXTBMTGEPZSIMONDMEHQAGGDUFPGGIBCEMMDYBBXQQUSELHUMJQZPUJQNHSHKTLVONCGNEXVIVS LSLJBOE ERROR: Message too long. (MAX LENGTH: 481 - EXCLUDING WHITESPACE). ***** * 1. Enter a message * * 2. Load an encoded message from a file * * 3. Encode a message * * 4. Decode a message * * 5. Save the encoded & decoded message to a file * * 6. Quit * ***** ENTER YOUR SELECTION: 1 ENTER MESSAGE (TYPE 'QUIT' TO RETURN TO MENU): GENERALTSONEEDSCHICKENNOW WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): i ERROR: Invalid input. WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): 3 ERROR: Invalid input. WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): fdsg ERROR: Invalid input. WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): █ </pre>

2

```
*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file               *
* 3. Encode a message                                   *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 2
WOULD YOU LIKE TO OPEN A CUSTOM FILENAME? (Y/N): n
WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): n

Decoded Message: IAMTHEWALRUSU
```

```
*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file               *
* 3. Encode a message                                   *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 2
WOULD YOU LIKE TO OPEN A CUSTOM FILENAME? (Y/N): y
FILENAME (USAGE: filename.emf): test.emf
WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): n

Decoded Message: IAMTHEWALRUSU
```

```
*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file               *
* 3. Encode a message                                   *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 2
WOULD YOU LIKE TO OPEN A CUSTOM FILENAME? (Y/N): y
FILENAME (USAGE: filename.emf): test
ERROR: Invalid filename. Please enter a valid filename and extension.
```

```
*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file               *
* 3. Encode a message                                   *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 2
WOULD YOU LIKE TO OPEN A CUSTOM FILENAME? (Y/N): y
FILENAME (USAGE: filename.emf): invalid.emf
ERROR: Unable to open file. Please try again.
```

3

```
* * * * *
* 1. Enter a message *
* 2. Load an encoded message from a file *
* 3. Encode a message *
* 4. Decode a message *
* 5. Save the encoded & decoded message to a file *
* 6. Quit *
* * * * *

ENTER YOUR SELECTION: 1
ENTER MESSAGE (TYPE 'QUIT' TO RETURN TO MENU): GENERALTSONEEDSCHICKENNOW
WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): n

Encoded Message: NDTENYHXUNSRLSWEDNCAHGEEWNHLSEKOITPPENCSAUQBJODWG

* * * * *
* 1. Enter a message *
* 2. Load an encoded message from a file *
* 3. Encode a message *
* 4. Decode a message *
* 5. Save the encoded & decoded message to a file *
* 6. Quit *
* * * * *

ENTER YOUR SELECTION: 3
WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): n

Stored Message: GENERALTSONEEDSCHICKENNOW
Encoded Message: SOQEYAKXQNSRQCSIEDNCAIGEEWNHLCEKOITLXMINCSVHKDAOUSQ
```

```
* * * * *
* 1. Enter a message *
* 2. Load an encoded message from a file *
* 3. Encode a message *
* 4. Decode a message *
* 5. Save the encoded & decoded message to a file *
* 6. Quit *
* * * * *

ENTER YOUR SELECTION: 3
ERROR: There is no message currently stored in memory.
```

NOTE: To re-encode a message using menu option 3, first there must be a message in memory.

4

```
*****
* 1. Enter a message *
* 2. Load an encoded message from a file *
* 3. Encode a message *
* 4. Decode a message *
* 5. Save the encoded & decoded message to a file *
* 6. Quit *
*****
ENTER YOUR SELECTION: 4
ENTER MESSAGE TO DECODE (TYPE 'QUIT' TO RETURN TO MENU): THEESEARENSRNTAEDNCACGEEWNHILTEKOITUALNCSLYRANODOM
Decoded Message: GENERALTSONEEDSCHICKENNOW
```

```
*****
* 1. Enter a message *
* 2. Load an encoded message from a file *
* 3. Encode a message *
* 4. Decode a message *
* 5. Save the encoded & decoded message to a file *
* 6. Quit *
*****
ENTER YOUR SELECTION: 4
ENTER MESSAGE TO DECODE (TYPE 'QUIT' TO RETURN TO MENU):
ERROR: Invalid message length. Encoded messages must be an the square of an odd number.

*****
* 1. Enter a message *
* 2. Load an encoded message from a file *
* 3. Encode a message *
* 4. Decode a message *
* 5. Save the encoded & decoded message to a file *
* 6. Quit *
*****
ENTER YOUR SELECTION: 4
ENTER MESSAGE TO DECODE (TYPE 'QUIT' TO RETURN TO MENU): three
ERROR: Invalid message length. Encoded messages must be an the square of an odd number.
```

```
*****
* 1. Enter a message *
* 2. Load an encoded message from a file *
* 3. Encode a message *
* 4. Decode a message *
* 5. Save the encoded & decoded message to a file *
* 6. Quit *
*****
ENTER YOUR SELECTION: 4
ENTER MESSAGE TO DECODE (TYPE 'QUIT' TO RETURN TO MENU): EDVFMIDQZUNKBWCVKCIPSNITVOKSLJGSPWGNBMSZHTXSghw
ZCGSSTXQFYMBIKLSJHPDAIFENMDQOIEHOQRJCVPCOLNEPXUFLNCLXLLJEBOKPCJGGABZEKNICYVLFHSIFTEJSTERUCQDRHRCRCERFQVFX
XQJYLACFEINYGJNNPNIEMQDFXWDBKBHNRXVJLXOBVAKUSEESVFNDQEEJKSHIEJSTAHKMSZDRHQVHGKEQKQNYXSYQZUJUVLOKITENDSY
NBNQVVSDFROUSTLNDJVOQPYPLZMYGJGBBYXCJQDUMQWHLWTGLRASSMARMAAOVNQQLRBYREEYCVQSTKCTRILFRFYBONSBJDBPKRBWHSDB
RRYAQXIKVEVDIFJTWLEVRQXLXGVZMYTJBERKGNZURCZRLHUKQARUCUUSIKWZHNTQDHEWCEQJKEWDKOVXQXOKOVSYAJDZHKJGRDAPSTN
FMTGUJEBHOCVVAIWNVDJWZCLLQFNZQRWITGTGDMWUQVMRPFMBCHPPXSPWACQCDMEBDBPBYVGNLPTINJMERXKXBMWZUTBVXGIXTLTWC
NYUTWCQMTZGHWLZGZYUDRLVTJVAQZBZUSCZDQMEFHMIDZRAJPPXNUZDANFBATQWVAVXNQAJXLTKWJCHCZLFWELTXNQZJVRILJJCZOLVRO
PPHCQMGCGNVDRTJXWDXHSORSFTLGHISNYOCICQBXGTHAJJWSHDKJHOTLLRCZMAPOBNHRCTCVBJETXEBJFZYGCJBJNHZVUDALFQNYKVF
BSRESYAHNTPHMLFCFPZLQEMSESCKQHDLBZVBCFOPZFDXZFRARJYJVDJPHJZPTLWDXPXICHIGWHAAGLDQLEQVYZJEBJTUTXFORLBGHWIT
WFDEARGJSTDAIVALQCAWVRGZXHWODLKZZRCLFHEWAPYOWBKPDAVZHHQWMIPTA
ERROR: Invalid message length. (MAX LENGTH: 961).
```

5

```
*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file                *
* 3. Encode a message                                    *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 1
ENTER MESSAGE (TYPE 'QUIT' TO RETURN TO MENU): GENERALTSONEEDSCHICKENNOW
WOULD YOU LIKE TO SET THE MATRIX SIZE? (Y/N): n

Encoded Message: DTUEPOOCUNSRPOEDNCADGEEWNHILNEKOITVYPNCSDBFCEOCWK

*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file                *
* 3. Encode a message                                    *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 5
WOULD YOU LIKE TO SET A CUSTOM FILENAME? (Y/N): n
YOUR FILE HAS BEEN SAVED: encoded-file.emf
```

```
*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file                *
* 3. Encode a message                                    *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 5
WOULD YOU LIKE TO SET A CUSTOM FILENAME? (Y/N): y
FILENAME (DO NOT INCLUDE A FILE EXTENSION): test
YOUR FILE HAS BEEN SAVED: test.emf
```

```
*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file                *
* 3. Encode a message                                    *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 5
ERROR: There is no message currently stored in memory.
```

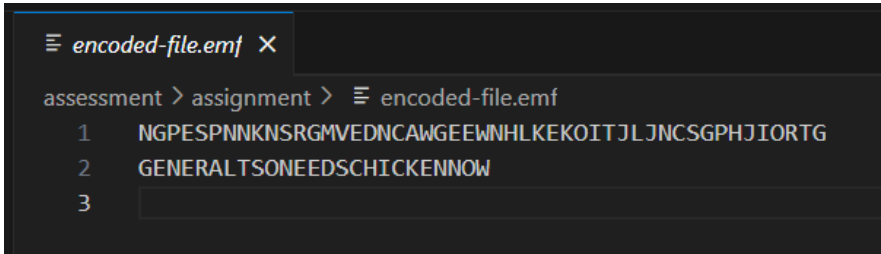
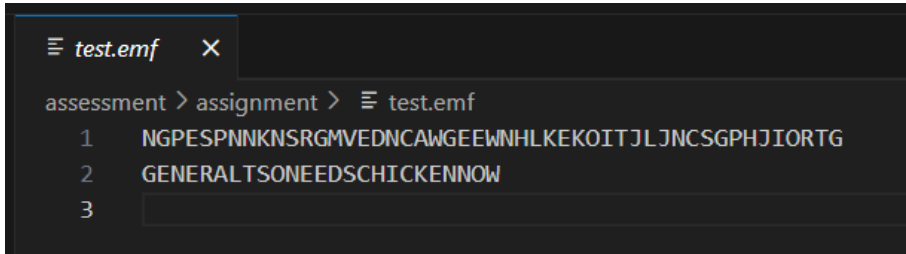
```
*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file                *
* 3. Encode a message                                    *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 5
WOULD YOU LIKE TO SET A CUSTOM FILENAME? (Y/N): y
FILENAME (DO NOT INCLUDE A FILE EXTENSION):
ERROR: Invalid filename. Please enter a valid filename.
```

```
*****
* 1. Enter a message                                     *
* 2. Load an encoded message from a file                *
* 3. Encode a message                                    *
* 4. Decode a message                                    *
* 5. Save the encoded & decoded message to a file       *
* 6. Quit                                                *
*****
ENTER YOUR SELECTION: 5
WOULD YOU LIKE TO SET A CUSTOM FILENAME? (Y/N): y
FILENAME (DO NOT INCLUDE A FILE EXTENSION): test$$$#@ special %$#@ characters
YOUR FILE HAS BEEN SAVED: test--special---characters.emf
```

NOTE: To save a message using menu option 5, first there must be a message in memory.

6	<pre> ***** * 1. Enter a message * * 2. Load an encoded message from a file * * 3. Encode a message * * 4. Decode a message * * 5. Save the encoded & decoded message to a file * * 6. Quit * ***** ENTER YOUR SELECTION: 6 PS C:\Users\Griffith University\OneDrive - Griffith University\Desktop\Projects\Object Orientated Programming> </pre>	<pre> ***** * 1. Enter a message * * 2. Load an encoded message from a file * * 3. Encode a message * * 4. Decode a message * * 5. Save the encoded & decoded message to a file * * 6. Quit * ***** ENTER YOUR SELECTION: quit ERROR: Invalid selection. Please select from the menu above. </pre>
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SAVE FILE SCREENSHOTS

DEFAULT FILENAME	CUSTOM FILENAME
 <p>The screenshot shows a file explorer window with the title bar 'encoded-file.emf'. The address bar displays the path 'assessment > assignment > encoded-file.emf'. The file list contains three items: '1 NGPESPNNKNSRGMVEDNCAWGEEWNHLKEKOITJLJNCSGPHJIORTG', '2 GENERALTSONEEDSCHICKENNOW', and '3' followed by an empty text input field.</p>	 <p>The screenshot shows a file explorer window with the title bar 'test.emf'. The address bar displays the path 'assessment > assignment > test.emf'. The file list contains three items: '1 NGPESPNNKNSRGMVEDNCAWGEEWNHLKEKOITJLJNCSGPHJIORTG', '2 GENERALTSONEEDSCHICKENNOW', and '3' followed by an empty text input field.</p>