

```
1 // Matthew Bowker, CS3060-001, Assignment #1 Problem 2.28
2
3 // Assignment 1a #2.28 (Digets of an Integer) Write a program that inputs a five-digit
  integer, separates the integer into its digits and prints them separated by three
  spaces each.
4 // HINT: Use the integer division and modulus operators.
5
6 #include <iostream>
7 #include <stdio.h>
8
9 using namespace std;
10
11 int main()
12 {
13     // Declaring Variables
14     int number;          // Number given by the user
15     int tenThousands;    // Number in the 10.000s place
16     int thousands;       // Number in the 1.000s place
17     int hundreds;       // Number in the 100s place.
18     int tens;           // Number in the 10s place
19
20     // Printing a welcome message to the user, as well as basic directions.
21     cout << "Hello, and welcome to the Integer splitting application." << endl;
22     cout << "Please enter a five-digit integer" << endl;
23
24     // Recieve the input and store it in an integer.
25     cin >> number;
26
27     // Basic error checking... error out if the number isn't five digits.
28     if (number < 10000 || number > 99999) {
29         cout << "That's not a number that I can process!" << endl;
30         return 1;
31     }
32
33
34     // Split out the 10000s
35     tenThousands = number / 10000;
36     number = number % 10000;
37
38     // Split out the 1000s
39     thousands = number / 1000;
40     number = number % 1000;
41
42
43     // Split out the 100s
44     hundreds = number / 100;
45     number = number % 100;
46
47
48     // Split out the 10s
49     tens = number / 10;
50     number = number % 10;
51
52     // Output all of the information to the console
```

```
53     cout << tenThousands;
54     cout << "    ";
55     cout << thousands;
56     cout << "    ";
57     cout << hundreds;
58     cout << "    ";
59     cout << tens;
60     cout << "    ";
61     cout << number;
62     cout << endl;
63
64     // We're done here :)
65     return 0;
66 }
67
68
```

```
1  Matthew Bowker; CS3060-001; Assignment #1 Problem 2.28 Output
2
3  -----
4  | Run #1: |
5  -----
6
7  Last login: Mon Apr 28 15:37:01 on ttys000
8  /Users/Matthew/Documents/School/CPP/Homework/Homework\ 1/Part\
9  A/build-HMW1_a-Desktop_Qt_5_2_1_clang_64bit-Release/HMW1_a ; exit;
10 -bash: Desktop: command not found
11 macbookpro-8810:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
12 1/Part\ A/build-HMW1_a-Desktop_Qt_5_2_1_clang_64bit-Release/HMW1_a ; exit;
13 Hello, and welcome to the Integer splitting application.
14 Please enter a five-digit integer
15 79332
16 7 9 3 3 2
17 logout
18
19 [Process completed]
20
21 -----
22 | Run #2: |
23 -----
24
25 Last login: Mon Apr 28 15:37:46 on ttys000
26 -bash: Desktop: command not found
27 macbookpro-8810:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
28 1/Part\ A/build-HMW1_a-Desktop_Qt_5_2_1_clang_64bit-Release/HMW1_a ; exit;
29 Hello, and welcome to the Integer splitting application.
30 Please enter a five-digit integer
31 12345
32 1 2 3 4 5
33 logout
34
35 [Process completed]
36
37 -----
38 | Run #3: |
39 -----
40
41 Last login: Mon Apr 28 15:39:58 on ttys000
42 -bash: Desktop: command not found
43 macbookpro-8810:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
44 1/Part\ A/build-HMW1_a-Desktop_Qt_5_2_1_clang_64bit-Release/HMW1_a ; exit;
45 Hello, and welcome to the Integer splitting application.
46 Please enter a five-digit integer
47 9999
48 That's not a number that I can process!
49 logout
50
51 [Process completed]
```

```
51
52 -----
53 | Run #4: |
54 -----
55
56 Last login: Mon Apr 28 15:41:00 on ttys000
57 -bash: Desktop: command not found
58 macbookpro-8810:~ Matthew$ cd /; /Applications/Qt/Qt\
Creator.app/Contents/MacOS/../../Resources/qtcreator_process_stub run
/var/folders/90/2pt8ybrn18bct15l9clf6cmr0000gn/T/QtCreator.mF3826/stub-socket Press\
\<RETURN\>\ to\ close\ this\ window...
/Users/Matthew/Documents/School/CPP/Homework/Homework\ 1/Part\
A/build-HMW1_a-Desktop_Qt_5_2_1_clang_64bit-Release
/var/folders/90/2pt8ybrn18bct15l9clf6cmr0000gn/T/QtCreator.fB3826
/Users/Matthew/Documents/School/CPP/Homework/Homework\ 1/Part\
A/build-HMW1_a-Desktop_Qt_5_2_1_clang_64bit-Release/HMW1_a
59 Hello, and welcome to the Integer splitting application.
60 Please enter a five-digit integer
61 100000
62 That's not a number that I can process!
63 logout
64
65 [Process completed]
66
67
68 -----
69 | Run #5: |
70 -----
71
72 Last login: Mon Apr 28 15:41:09 on ttys000
73 -bash: Desktop: command not found
74 macbookpro-8810:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
1/Part\ A/build-HMW1_a-Desktop_Qt_5_2_1_clang_64bit-Release/HMW1_a ; exit;
75 Hello, and welcome to the Integer splitting application.
76 Please enter a five-digit integer
77 98765
78 9 8 7 6 5
79 logout
80
81 [Process completed]
```

```
1  // Matthew Bowker, CS3060-001, Assignment #1 Problem 3.16 (HeartRates.H)
2
3  #ifndef HEARTRATES_H
4  #define HEARTRATES_H
5
6  #endif // HEARTRATES_H
7
8  using namespace std;
9
10 class HeartRates {
11 public:
12     HeartRates();
13     HeartRates(string, string, int, int, int);
14     string getFirstName();
15     void setFirstName(string);
16     string getLastName();
17     void setLastName(string);
18     int getMonth();
19     void setMonth(int);
20     int getDay();
21     void setDay(int);
22     int getYear();
23     void setYear(int);
24     int getCurrentMonth();
25     void setCurrentMonth(int);
26     int getCurrentDay();
27     void setCurrentDay(int);
28     int getCurrentYear();
29     void setCurrentYear(int);
30     int getAge();
31     int getMaximumHeartRate();
32     int getTargetHeartRate(int);
33     void generateReport();
34 private:
35     string firstName;
36     string lastName;
37     int month;
38     int day;
39     int year;
40     int currentMonth;
41     int currentDay;
42     int currentYear;
43 };
44
45 HeartRates::HeartRates() {
46
47 }
48
49 HeartRates::HeartRates(string tempFirstName, string tempLastName, int tempMonth, int
tempDay, int tempYear) {
50     firstName = tempFirstName;
51     lastName = tempLastName;
52     month = tempMonth;
53     day = tempDay;
```

```
54     year = tempYear;
55 }
56
57 string HeartRates::getFirstName() {
58     return firstName;
59 }
60
61 void HeartRates::setFirstName(string tempFirstName) {
62     firstName = tempFirstName;
63 }
64
65 string HeartRates::getLastName() {
66     return lastName;
67 }
68
69 void HeartRates::setLastName(string tempLastName) {
70     lastName = tempLastName;
71 }
72
73 int HeartRates::getMonth() {
74     return month;
75 }
76
77 void HeartRates::setMonth(int tempMonth) {
78     month = tempMonth;
79 }
80
81 int HeartRates::getDay() {
82     return day;
83 }
84
85 void HeartRates::setDay(int tempDay) {
86     day = tempDay;
87 }
88
89 int HeartRates::getYear() {
90     return year;
91 }
92
93 void HeartRates::setYear(int tempYear) {
94     year = tempYear;
95 }
96
97 int HeartRates::getCurrentMonth() {
98     return currentMonth;
99 }
100
101 void HeartRates::setCurrentMonth(int tempMonth) {
102     currentMonth = tempMonth;
103 }
104
105 int HeartRates::getCurrentDay() {
106     return currentDay;
107 }
```

```

108
109 void HeartRates::setCurrentDay(int tempDay) {
110     currentDay = tempDay;
111 }
112
113 int HeartRates::getCurrentYear() {
114     return currentYear;
115 }
116
117 void HeartRates::setCurrentYear(int tempYear) {
118     currentYear = tempYear;
119 }
120
121 int HeartRates::getAge() {
122
123     if (currentYear == 0) { // Have we set the year yet?
124         cout << "Please enter the current year:";
125         cin >> currentYear;
126     }
127
128     return currentYear - year;
129 }
130
131
132 int HeartRates::getMaximumHeartRate() {
133     return 220 - getAge();
134 }
135
136 int HeartRates::getTargetHeartRate(int choice) {
137     switch (choice) {
138         case 1: // Min
139             return getMaximumHeartRate() * .5;
140             break;
141         case 2:
142             return getMaximumHeartRate() * .85;
143             break;
144         default:
145             cout << "Error: You haven't specified a "
146                 << "valid case for getTargetHeartRate()" << endl;
147             return 0;
148             break;
149     }
150
151 }
152
153 void HeartRates::generateReport() {
154     cout << "-----" << endl;
155     cout << "|    Patient HeartRate Report    |" << endl;
156     cout << "|    Dr. Albert Brouillette    |" << endl;
157     cout << "-----" << endl;
158     cout << "Patient Name: " << getLastName() << ", " << getFirstName() << endl;
159     cout << "Patient Date of Birth: " << getMonth() << "/" << getDay() << "/" << getYear
160         () << endl;
161     cout << "-----" << endl;

```

```
161     cout << "Maximum Heart Rate: " << getMaximumHeartRate() << endl;
162     cout << "-----" << endl;
163     cout << "Target Heart Rate: " << getTargetHeartRate(1) << " - " <<
    getTargetHeartRate(2) << endl;
164     cout << "-----" << endl;
165     cout << "Report generated on: " << getCurrentMonth() << "/" << getCurrentDay() <<
    "/" << getCurrentYear() << endl;
166
167
168 }
169
```



```
1  // Matthew Bowker, CS3060-001, Assignment #1 Problem 3.16
2
3  #include <iostream>
4  #include <string>
5
6  #include "HeartRates.h"
7
8  using namespace std;
9
10 int main()
11 {
12     HeartRates rate;
13     string tempFirstName;
14     string tempLastName;
15     int tempMonth;
16     int tempDay;
17     int tempYear;
18     int tempCurrentMonth;
19     int tempCurrentDay;
20     int tempCurrentYear;
21     int i;
22
23     cout << "Welcome to the Heart Rate Calculator program" << endl;
24     cout << "Please enter the Patient's first name: ";
25     cin >> tempFirstName;
26     cout << "Please enter the Patient's last name: ";
27     cin >> tempLastName;
28     cout << "Please enter the Patient's month of birth in numbers: ";
29     cin >> tempMonth;
30     cout << "Please enter the Patient's day of birth in numbers: ";
31     cin >> tempDay;
32     cout << "Please enter the Patient's year of birth in numbers: ";
33     cin >> tempYear;
34     cout << "Please enter the current month in numbers: ";
35     cin >> tempCurrentMonth;
36     cout << "Please enter the current day in numbers: ";
37     cin >> tempCurrentDay;
38     cout << "Please enter the current year in numbers: ";
39     cin >> tempCurrentYear;
40     rate.setFirstName(tempFirstName);
41     rate.setLastName(tempLastName);
42     rate.setMonth(tempMonth);
43     rate.setDay(tempDay);
44     rate.setYear(tempYear);
45     rate.setCurrentMonth(tempCurrentMonth);
46     rate.setCurrentDay(tempCurrentDay);
47     rate.setCurrentYear(tempCurrentYear);
48
49     cout << "Generating report...." << endl;
50     for (i=0; i < 50; i++) {
51         cout << endl;
52     }
53
54     rate.generateReport();
```

```
55     return 0;  
56 }  
57  
58
```

```
1 Matthew Bowker; CS3060-001; Assignment #1 Problem 3.16 Output
2
3 cd /; /Applications/Qt/Qt\
  Creator.app/Contents/MacOS/../../Resources/qtcreator_process_stub run
  /var/folders/90/2pt8ybrn18bct15l9clf6cmr0000gn/T/QtCreator.wJl346/stub-socket Press\
  \<RETURN>\>\ to\ close\ this\ window...
  /Users/Matthew/Documents/School/CPP/Homework/Homework\ 1/Part\
  B/build-HMW1_b-Desktop_Qt_5_2_1_clang_64bit-Debug
  /var/folders/90/2pt8ybrn18bct15l9clf6cmr0000gn/T/QtCreator.LG1346
  /Users/Matthew/Documents/School/CPP/Homework/Homework\ 1/Part\
  B/build-HMW1_b-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_b
4 Last login: Mon May 12 17:02:51 on console
5 -bash: Desktop: command not found
6 Matthews-MacBook-Pro:~ Matthew$ cd /; /Applications/Qt/Qt\
  Creator.app/Contents/MacOS/../../Resources/qtcreator_process_stub run
  /var/folders/90/2pt8ybrn18bct15l9clf6cmr0000gn/T/QtCreator.wJl346/stub-socket Press\
  \<RETURN>\>\ to\ close\ this\ window...
  /Users/Matthew/Documents/School/CPP/Homework/Homework\ 1/Part\
  B/build-HMW1_b-Desktop_Qt_5_2_1_clang_64bit-Debug
  /var/folders/90/2pt8ybrn18bct15l9clf6cmr0000gn/T/QtCreator.LG1346
  /Users/Matthew/Documents/School/CPP/Homework/Homework\ 1/Part\
  B/build-HMW1_b-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_b
7 Welcome to the Heart Rate Calculator program
8 Please enter the Patient's first name: Matthew
9 Please enter the Patient's last name: Bowker
10 Please enter the Patient's month of birth in numbers: 7
11 Please enter the Patient's day of birth in numbers: 25
12 Please enter the Patient's year of birth in numbers: 1993
13 Please enter the current month in numbers: 5
14 Please enter the current day in numbers: 12
15 Please enter the current year in numbers: 2014
16 Generating report....
17
18
19
20
21
22
23
24
25
26
27
28
29
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32
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35
36
37
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```

```
39
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52
53
54
55
56
57
58
59
60
61
62
63
64
65
66 -----
67 | Patient HeartRate Report |
68 | Dr. Albert Broullette |
69 -----
70 Patient Name: Bowker, Matthew
71 Patient Date of Birth: 7/25/1993
72 -----
73 Maximum Heart Rate: 199
74 -----
75 Target Heart Rate: 99 - 169
76 -----
77 Report generated on: 5/12/2014
78 Press <RETURN> to close this window...
79
80
```

```
1  Matthew Bowker; CS3060-001; Assignment #1 Problem 4.36 decryption Output
2
3  -----
4  | Run #1: |
5  -----
6
7  Last login: Sun May  4 17:22:02 on ttys000
8  -bash: Desktop: command not found
9  Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
10  1/Part\ C/build-HMW1_c-decrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-decrypt ; exit;
11  Welcome to the decryption program!
12  Enter the number to decrypt here: 4895
13  Here is your encrypted number: 2871
14  logout
15
16  [Process completed]
17
18  -----
19  | Run #2: |
20  -----
21
22  Last login: Sun May  4 17:24:18 on ttys000
23  -bash: Desktop: command not found
24  Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
25  1/Part\ C/build-HMW1_c-decrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-decrypt ; exit;
26  Welcome to the decryption program!
27  Enter the number to decrypt here: 6544
28  Here is your encrypted number: 7798
29  logout
30
31  [Process completed]
32
33  -----
34  | Run #3: |
35  -----
36
37  Last login: Sun May  4 17:24:59 on ttys000
38  -bash: Desktop: command not found
39  Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
40  1/Part\ C/build-HMW1_c-decrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-decrypt ; exit;
41  Welcome to the decryption program!
42  Enter the number to decrypt here: 999
43  That's not a number that I can process!
44  logout
45
46  [Process completed]
47
48  -----
49  | Run #4: |
50  -----
51
```

```
52 Last login: Sun May  4 17:25:34 on ttys000
53 -bash: Desktop: command not found
54 Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
1/Part\ C/build-HMW1_c-decrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-decrypt ; exit;
55 Welcome to the decryption program!
56 Enter the number to decrypt here: 10001
57 That's not a number that I can process!
58 logout
59
60 [Process completed]
61
62
63 -----
64 | Run #5: |
65 -----
66 Last login: Sun May  4 17:25:41 on ttys000
67 -bash: Desktop: command not found
68 Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
1/Part\ C/build-HMW1_c-decrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-decrypt ; exit;
69 Welcome to the decryption program!
70 Enter the number to decrypt here: 3335
71 Here is your encrypted number: 6866
72 logout
73
74 [Process completed]
```

```
1  // Matthew Bowker, CS3060-001, Assignment #1 Problem 4.26 decryption
2
3  #include <iostream>
4
5  using namespace std;
6
7  int decrypt(int value) {
8      value = value + 20;
9      value = value - 7;
10     value = value % 10;
11     return value;
12 }
13
14 int swapNumbers(int value1, int value2, int value3, int value4) {
15     return (value3 * 1000) + (value4 * 100) + (value1 * 10) + value2;
16 }
17
18 int main()
19 {
20     int number;
21     int thousands;
22     int hundreds;
23     int tens;
24
25     cout << "Welcome to the decryption program!" << endl;
26     cout << "Enter the number to decrypt here: ";
27     cin >> number;
28
29     if (number < 1000 || number > 9999) {
30         cout << "That's not a number that I can process!" << endl;
31         return 1;
32     }
33
34     // Split out the 1000s
35     thousands = number / 1000;
36     number = number % 1000;
37
38
39     // Split out the 100s
40     hundreds = number / 100;
41     number = number % 100;
42
43
44     // Split out the 10s
45     tens = number / 10;
46     number = number % 10;
47
48     thousands = decrypt(thousands);
49     hundreds = decrypt(hundreds);
50     tens = decrypt(tens);
51     number = decrypt(number);
52
53     cout << "Here is your encrypted number: " << swapNumbers(thousands, hundreds, tens,
    number) << endl;
```

```
54     return 0;  
55 }  
56
```



```
1  Matthew Bowker; CS3060-001; Assignment #1 Problem 4.36 encryption Output
2
3  -----
4  | Run #1: |
5  -----
6
7  Last login: Sun May  4 17:18:26 on ttys000
8  /Users/Matthew/Documents/School/CPP/Homework/Homework\ 1/Part\
9  C/build-HMW1_c-encrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-encrypt ; exit;
10 -bash: Desktop: command not found
11 Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
12 1/Part\ C/build-HMW1_c-encrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-encrypt ; exit;
13 Welcome to the encryption program!
14 Enter the number to encrypt here: 2871
15 Here is your encrypted number: 4895
16 logout
17
18 [Process completed]
19
20 -----
21 | Run #2: |
22 -----
23
24 Last login: Sun May  4 17:20:23 on ttys000
25 -bash: Desktop: command not found
26 Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
27 1/Part\ C/build-HMW1_c-encrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-encrypt ; exit;
28 Welcome to the encryption program!
29 Enter the number to encrypt here: 7798
30 Here is your encrypted number: 6544
31 logout
32
33 [Process completed]
34
35 -----
36 | Run #3: |
37 -----
38
39 Last login: Sun May  4 17:20:52 on ttys000
40 -bash: Desktop: command not found
41 Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
42 1/Part\ C/build-HMW1_c-encrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-encrypt ; exit;
43 Welcome to the encryption program!
44 Enter the number to encrypt here: 999
45 That's not a number that I can process!
46 logout
47
48 [Process completed]
49
50 -----
51 | Run #4: |
```

```
51  -----
52
53  Last login: Sun May  4 17:21:13 on ttys000
54  -bash: Desktop: command not found
55  Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
56  1/Part\ C/build-HMW1_c-encrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-encrypt ; exit;
57  Welcome to the encryption program!
58  Enter the number to encrypt here: 10001
59  That's not a number that I can process!
60  logout
61
62  [Process completed]
63
64  -----
65  | Run #5: |
66  -----
67
68  Last login: Sun May  4 17:21:47 on ttys000
69  -bash: Desktop: command not found
70  Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
71  1/Part\ C/build-HMW1_c-encrypt-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_c-encrypt ; exit;
72  Welcome to the encryption program!
73  Enter the number to encrypt here: 6866
74  Here is your encrypted number: 3335
75  logout
76
77  [Process completed]
```

```
1  // Matthew Bowker, CS3060-001, Assignment #1 Problem 4.36 encryption
2
3  #include <iostream>
4
5  using namespace std;
6
7  int encrypt(int value) {
8      value = value + 7;
9      value = value % 10;
10     return value;
11 }
12
13 int swapNumbers(int value1, int value2, int value3, int value4) {
14     return (value3 * 1000) + (value4 * 100) + (value1 * 10) + value2;
15 }
16
17 int main()
18 {
19     int number;
20     int thousands;
21     int hundreds;
22     int tens;
23
24     cout << "Welcome to the encryption program!" << endl;
25     cout << "Enter the number to encrypt here: ";
26     cin >> number;
27
28     if (number < 1000 || number > 9999) {
29         cout << "That's not a number that I can process!" << endl;
30         return 1;
31     }
32
33     // Split out the 1000s
34     thousands = number / 1000;
35     number = number % 1000;
36
37
38     // Split out the 100s
39     hundreds = number / 100;
40     number = number % 100;
41
42
43     // Split out the 10s
44     tens = number / 10;
45     number = number % 10;
46
47     thousands = encrypt(thousands);
48     hundreds = encrypt(hundreds);
49     tens = encrypt(tens);
50     number = encrypt(number);
51
52     cout << "Here is your encrypted number: " << swapNumbers(thousands, hundreds, tens,
53     number) << endl;
54     return 0;
```

```
54     }
```

```
55
```

```
56
```

```

1  // Matthew Bowker, CS3060-001, Assignment #1 Problem 5.24
2
3  #include <iostream>
4  #include <string>
5
6  using namespace std;
7
8  string genIndividualRows(int rowNum) {
9      string buffer;
10     (rowNum == 10) ? buffer = buffer + "*" : buffer = buffer + " ";
11     (9 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
12     (8 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
13     (7 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
14     (6 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
15     (5 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
16     (4 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
17     (3 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
18     (2 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
19     (1 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
20     (2 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
21     (3 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
22     (4 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
23     (5 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
24     (6 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
25     (7 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
26     (8 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
27     (9 <= rowNum && rowNum <= 10) ? buffer = buffer + "*" : buffer = buffer + " ";
28     (rowNum == 10) ? buffer = buffer + "*" : buffer = buffer + " ";
29
30     return buffer;
31 }
32
33 void genStars(int rows) {
34     int finalRows;
35     int i;
36
37     i = 0;
38
39     finalRows = rows;
40
41     rows = rows - 1;
42     rows = rows / 2;
43
44     finalRows = finalRows - rows;
45
46     while (i < rows) {
47         i++;
48         cout << genIndividualRows(i) << endl;
49     }
50
51     cout << genIndividualRows(finalRows) << endl;
52
53     while (i > 0) {
54         cout << genIndividualRows(i) << endl;

```

```
55         i--;  
56     }  
57 }  
58  
59 int main()  
60 {  
61     int numRows;  
62     cout << "Please enter the number of rows of stars you would like (between 1 and 19,  
        odd numbers only): ";  
63     cin >> numRows;  
64  
65     if (numRows < 1 || numRows > 19) {  
66         cout << "Sorry, that number won't work for me. " << endl;  
67         return 1;  
68     }  
69  
70     if ((numRows % 2) != 1) {  
71         cout << "That's not an odd number, bro! Try again please." << endl;  
72         return 1;  
73     }  
74  
75     genStars(numRows);  
76  
77     return 0;  
78 }  
79
```

```

1  Matthew Bowker; CS3060-001; Assignment #1 Problem 5.24 Output
2
3  -----
4  | Run #1: |
5  -----
6
7  Last login: Mon May 12 23:43:13 on ttys000
8  -bash: Desktop: command not found
9  Matthews-MacBook-Pro:~ Matthew$ cd /; /Applications/Qt/Qt\
Creator.app/Contents/MacOS/../../Resources/qtcreator_process_stub run
/var/folders/90/2pt8ybrn18bct15l9clf6cmr0000gn/T/QtCreator.xsl346/stub-socket Press\
\

```

```

44  -----
45  | Run #3: |
46  -----
47
48  Last login: Mon May 12 23:47:40 on ttys000
49  -bash: Desktop: command not found
50  Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
1/Part\ D/build-HMW1_d-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_d ; exit;
51  Please enter the number of rows of stars you would like (between 1 and 19, odd numbers
only): 19
52      *
53      ***
54      *****
55      *******
56      *********
57      ***********
58      *************
59      *************
60      *************
61      *************
62      *************
63      *************
64      *************
65      *************
66      *************
67      *******
68      *****
69      ***
70      *
71  logout
72
73  [Process completed]
74
75
76  -----
77  | Run #4: |
78  -----
79
80  Last login: Mon May 12 23:47:58 on ttys000
81  -bash: Desktop: command not found
82  Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
1/Part\ D/build-HMW1_d-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_d ; exit;
83  Please enter the number of rows of stars you would like (between 1 and 19, odd numbers
only): 21
84  Sorry, that number won't work for me.
85  logout
86
87  [Process completed]
88
89
90  -----
91  | Run #5: |
92  -----
93

```



```
94 Last login: Mon May 12 23:48:11 on ttys000
95 -bash: Desktop: command not found
96 Matthews-MacBook-Pro:~ Matthew$ /Users/Matthew/Documents/School/CPP/Homework/Homework\
1/Part\ D/build-HMW1_d-Desktop_Qt_5_2_1_clang_64bit-Debug/HMW1_d ; exit;
97 Please enter the number of rows of stars you would like (between 1 and 19, odd numbers
only): 1
98      *
99 logout
100
101 [Process completed]
```