

LAB MANUAL :7

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Question :1

The screenshot shows a C++ IDE with a source file named 'Untitled1.cpp' and a terminal window titled 'C:\Users\hp\Desktop\Untitled1.exe'. The code in the source file is as follows:

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     const int arr = 10;
5     int numbers[arr];
6
7
8     cout << "Enter 10 integers:" << endl;
9     for (int i = 0; i < arr; ++i) {
10         cout << "Enter integer " << (i + 1) << ": ";
11         cin >> numbers[i];
12     }
13
14
15     cout << "The entered integers are:";
16     for (int i = 0; i < arr; ++i) {
17         cout << numbers[i] << " ";
18     }
19     cout << endl;
20
21     return 0;
22 }
```

The terminal window shows the execution of the program. It prompts the user to enter 10 integers, and the user enters the values 1 through 10. The program then prints the entered integers: "The entered integers are: 1 2 3 4 5 6 7 8 9 0". The program exits after 7.571 seconds with a return value of 0.

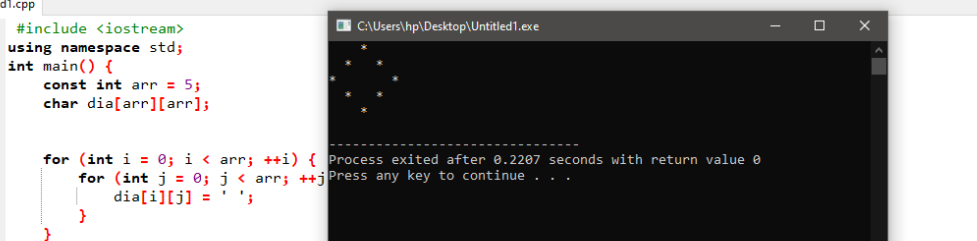
Question 2

The screenshot shows a C++ IDE with a source file named 'Untitled1.cpp' and a terminal window titled 'C:\Users\hp\Desktop\Untitled1.exe'. The code in the source file is as follows:

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     const int arr = 5;
5     int numbers[arr];
6
7
8     cout << "Enter 5 integers:" << endl;
9     for (int i = 0; i < arr; ++i) {
10         cout << "Enter integer " << (i + 1) << ": ";
11         cin >> numbers[i];
12     }
13
14     int sum = 0;
15     long product = 1;
16
17     for (int i = 0; i < arr; ++i) {
18         product *= numbers[i];
19         sum += numbers[i];
20     }
21
22
23     cout << "Product of the elements: " << product << endl;
24     cout << "Sum of the elements: " << sum << endl;
25
26
27     return 0;
28 }
```

The terminal window shows the execution of the program. It prompts the user to enter 5 integers, and the user enters the values 1 through 5. The program then prints the product and sum of the elements: "Product of the elements: 120" and "Sum of the elements: 15". The program exits after 9.813 seconds with a return value of 0.

Question 3



The screenshot displays a C++ IDE with a source code editor and a terminal window. The source code in 'Untitled1.cpp' defines a constant integer `arr = 5` and a character array `dia[arr][arr]`. It contains three nested loops: the first prints a diamond shape of asterisks, the second prints a horizontal line of asterisks in the middle, and the third prints a single asterisk in the center. The terminal window shows the output of the program, which is a diamond pattern of asterisks, followed by a message indicating the process exited after 0.2207 seconds with a return value of 0.

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     const int arr = 5;
5     char dia[arr][arr];
6
7
8     for (int i = 0; i < arr; ++i) {
9         for (int j = 0; j < arr; ++j)
10             dia[i][j] = ' ';
11     }
12
13
14     for (int i = 0; i < arr / 2 + 1;
15         dia[i][arr / 2 - i] = '*';
16         dia[i][arr / 2 + i] = '*';
17     }
18
19
20     for (int i = arr / 2 + 1; i < arr; ++i)
21         dia[i][i - arr / 2] = '*';
22     }
23
24
25     for (int i = 0; i < arr; ++i) {
26         for (int j = 0; j < arr; ++j)
27             cout << dia[i][j] << ' ';
28         cout << '\n';
29     }
30 }
```

```
C:\Users\hpl\Desktop\Untitled1.exe
 *
 * *
* * *
 * *
  *

-----
Process exited after 0.2207 seconds with return value 0
Press any key to continue . . .
```