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**L1F24BSCS0934**

**LAB-11**

Hollow Triangle

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the height of the triangle: ";

cin >> n;

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= n - i; j++) {

cout << " ";

}

for (int j = 1; j <= 2 \* i - 1; j++) {

if (j == 1 || j == 2 \* i - 1 || i == n)

cout << "\*";

else

cout << " ";

}

cout << endl;

}

return 0;

}

**FILLED TRIANGLE**

**#include <iostream>**

**using namespace std;**

**int main() {**

**int n;**

**cout << "Enter the height of the triangle: ";**

**cin >> n;**

**for (int i = 1; i <= n; i++) {**

**for (int j = 1; j <= n - i; j++) {**

**cout << " ";**

**}**

**for (int j = 1; j <= 2 \* i - 1; j++) {**

**cout << "\*";**

**}**

**cout << endl;**

**}**

**return 0;**

**}**

**Filled Hexagon**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the side length of the hexagon: ";

cin >> n;

for (int i = 0; i < n; i++) {

for (int j = 0; j < n - i - 1; j++) {

cout << " ";

}

for (int j = 0; j < n + 2 \* i; j++) {

cout << "\*";

}

cout << endl;

}

for (int i = n - 2; i >= 0; i--) {

for (int j = 0; j < n - i - 1; j++) {

cout << " ";

}

for (int j = 0; j < n + 2 \* i; j++) {

cout << "\*";

}

cout << endl;

}

return 0;

}

**HOLLOW HEXAGON**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the side length of the hexagon: ";

cin >> n;

for (int i = 0; i < n; i++) {

for (int j = 0; j < n - i - 1; j++) {

cout << " ";

}

for (int j = 0; j < n + 2 \* i; j++) {

if (j == 0 || j == n + 2 \* i - 1)

cout << "\*";

else

cout << " ";

}

cout << endl;

}

for (int i = n - 2; i >= 0; i--) {

// Print leading spaces

for (int j = 0; j < n - i - 1; j++) {

cout << " ";

}

for (int j = 0; j < n + 2 \* i; j++) {

if (j == 0 || j == n + 2 \* i - 1)

cout << "\*";

else

cout << " ";

}

cout << endl;

}

return 0;

}

**HOLLOW SQUARE**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the side length of the square: ";

cin >> n;

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= n; j++) {

if (i == 1 || i == n || j == 1 || j == n)

cout << "\*";

else

cout << " ";

}

cout << endl;

}

return 0;

}

**FILLED SQUARE**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the side length of the square: ";

cin >> n;

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= n; j++) {

cout << "\*";

}

cout << endl;

}

return 0;

}

**HOLLOW DIAMOND**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the number of rows: ";

cin >> n;

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= n - i; j++) {

cout << " ";

}

for (int j = 1; j <= (2 \* i - 1); j++) {

if (j == 1 || j == (2 \* i - 1)) {

cout << "\*";

} else {

cout << " ";

}

}

cout << endl;

}

for (int i = n - 1; i >= 1; i--) {

for (int j = 1; j <= n - i; j++) {

cout << " ";

}

for (int j = 1; j <= (2 \* i - 1); j++) {

if (j == 1 || j == (2 \* i - 1)) {

cout << "\*";

} else {

cout << " ";

}

}

cout << endl;

}

return 0;

}

**FILLED DIAMOND**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the number of rows: ";

cin >> n;

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= n - i; j++) {

cout << " ";

}

for (int j = 1; j <= (2 \* i - 1); j++) {

cout << "\*";

}

cout << endl;

}

for (int i = n - 1; i >= 1; i--) {

for (int j = 1; j <= n - i; j++) {

cout << " ";

}

for (int j = 1; j <= (2 \* i - 1); j++) {

cout << "\*";

}

cout << endl;

}

return 0;

}

**FILLED TRIANGLES**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the number of rows: ";

cin >> n;

cout << "Part (a):\n";

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= i; j++) {

cout << "\*";

}

cout << endl;

}

cout << "Part (b):\n";

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= n - i; j++) {

cout << " ";

}

for (int j = 1; j <= i; j++) {

cout << "\*";

}

cout << endl;

}

return 0;

}

**FILLED TRIANGLES**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the number of rows: ";

cin >> n;

cout << "Part (a):\n";

for (int i = n; i >= 1; i--) {

for (int j = 1; j <= i; j++) {

cout << "\*";

}

cout << endl;

}

cout << "Part (b):\n";

for (int i = n; i >= 1; i--) {

for (int j = 1; j <= n - i; j++) {

cout << " ";

}

for (int j = 1; j <= i; j++) {

cout << "\*";

}

cout << endl;

}

return 0;

}

**NUMBERD TRIANGLE**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the number of rows: ";

cin >> n;

cout << "Part (a):\n";

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= i; j++) {

cout << j << " ";

}

cout << endl;

}

cout << "Part (b):\n";

for (int i = n; i >= 1; i--) {

for (int j = 1; j <= i; j++) {

cout << j << " ";

}

cout << endl;

}

return 0;

}

**NUMBERD TRIANGLE**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the number of rows: ";

cin >> n;

for (int i = n; i >= 1; i--) {

for (int j = i; j >= 1; j--) {

cout << j << " ";

}

cout << endl;

}

return 0;

}

**NUMBERD TRIANGLE**

#include <iostream>

using namespace std;

int main() {

int n;

cout << "Enter the number of rows: ";

cin >> n;

cout << "Part (a):\n";

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= i; j++) {

cout << i << " ";

}

cout << endl;

}

cout << "Part (b):\n";

for (int i = n; i >= 1; i--) {

for (int j = 1; j <= i; j++) {

cout << i << " ";

}

cout << endl;

}

return 0;

}