

**Quiz 4 (DS-A)**  
**A**

**Roll #** \_\_\_\_\_

**Name** \_\_\_\_\_

```
int main() {
    int n = 5;
    for (int i = 1; i <= n; i++) {
        for (int j = n; j > i; j--)
            cout << " ";
        for (int j = 1; j <= (2 * i - 1); j++) {
            if (j == 1 || j == (2 * i - 1)) {
                if (i % 3 == 1)
                    cout << '*';
                else if (i % 3 == 2)
                    cout << '#';
                else
                    cout << '@';
            } else {
                cout << ' ';
            }
        }
        cout << endl;
    }
    for (int i = n - 1; i >= 1; i--) {
        for (int j = n; j > i; j--)
            cout << " ";
        for (int j = 1; j <= (2 * i - 1); j++) {
            if (j == 1 || j == (2 * i - 1)) {
                if (i % 3 == 1)
                    cout << '*';
                else if (i % 3 == 2)
                    cout << '#';
                else
                    cout << '@';
            } else {
                cout << ' ';
            }
        }
        cout << endl;
    }
    return 0;
}
```

Output/Error :



```
int main() {
    int n = 5;
    for (int i = 0; i < n; i++) {
        for (int j = n; j > i; j--)
            cout << " ";
        int C = 1;
        for (int j = 0; j <= i; j++) {
            cout << C << " ";
            C = C * (i - j) / (j + 1);
        }
        cout << endl;
    }
    return 0;
}
```

Output/Error :

```

      1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1
```

```
int main() {
    int n = 5;
    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 if ((i + j) % 2 == 0) {
                if (i % 2 == 0) {
                    cout << "* ";
                } else {
                    cout << "@ ";
                }
            } else {
                cout << " ";
            }
        }
        cout << endl;
    }
    return 0;
}
```

Output/Error :

```

#####
# * * #
# @ #
# * * #
#####
```

```

int main() {
    for (int i = 1; i <= 1; i++) {
        for (int j = 1; j <= 1; j++) {
            for (int k = 1; k <= 1; k++) {
                for (int l = 1; l <= 2; l++) {
                    for (int m = 1; m <= 2; m++) {
                        for (int n = 1; n <= 1; n++) {
                            cout << i << j << k << l << m << n << endl;
                        }
                    }
                }
            }
        }
    }
    return 0;}

```

Output/Error :

```

111111
111121
111211
111221

```

```

void printCombinations() {
    for (char i = 'A'; i <= 'B'; i++) {
        for (char j = 'A'; j <= 'B'; j++) {
            for (char k = 'A'; k <= 'B'; k++) {
                if (i == j && j == k) {
                    cout << i << j << k << "#" << endl;
                } else {
                    cout << i << j << k << "*" << endl;
                }
            }
        }
    }
}

int main() {
    printCombinations();
    return 0;}

```

Output/Error :

```

AAA#
AAB*
ABA*
ABB*
BAA*
BAB*
BBA*
BBB#

```

```

void complexProcess(int num) {
    int result = 0;
    for (int i = 1; i <= num; ++i) {
        if (i % 2 == 0) {
            result += i * i;
        }
    }
    cout << "Result from complexProcess: " << result << endl;
}

int main() {
    int totalSum = 0;
    for (int i = 1; i <= 5; ++i) {
        totalSum += i;
        cout << "Current totalSum: " << totalSum << endl;
        for (int j = 1; j <= 3; ++j) {
            if (j == 2) {
                complexProcess(i * j);
            }
        }
    }
    return 0;
}

```

## Output/Error

```

Current totalSum: 1
Result from complexProcess: 4
Current totalSum: 3
Result from complexProcess: 20
Current totalSum: 6
Result from complexProcess: 56
Current totalSum: 10
Result from complexProcess: 120
Current totalSum: 15
Result from complexProcess: 220

```

