**Following are the time complexity analysis to the given questions.**

int a = 0, b = 0;---------------------------------O1

for (i = 0; i < N; i++) {

a = a + rand();-----------------------------------On

}

for (j = 0; j < M; j++) {

b = b + rand();----------------------------------On

}

Final time complexity On

int a = 0—-----------------------------------------O1

for (i = 0; i < N; i++) {---------------------------On

for (j = N; j > i; j--) {

a = a + i + j;---------------------------------------On

}

}

final time complexity On square

int i, j, k = 0;--------------------------------------O1

for (i = n / 2; i <= n; i++) {---------------------On

for (j = 2; j <= n; j = j \* 2) {

k = k + n / 2;--------------------------------------Ologn

}

}

Final time complexity OnLog(n)

int a = 0, i = N;

while (i > 0) {

a += i;

i /= 2;--------------------------------------------Ologn

}

Final time complexity

for(var i=0;i<n;i++)

i\*=k—------------------------------------Ologn

Final time complexity Ologn

def fun(n):

if (n < 5):

print("GeeksforGeeks", end ="")

else:

for i in range(n):

print(i, end= " ")

Final time complexity On

def fun(a, b):

while (a != b):

if (a > b):

a = a - b

else:

b = b - a

Final time complexity O1

void fun(int n)

{

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

cout<<"GeeksforGeeks";

}

Final time complexity On

void fun(int n, int x)

{

for (int i = 1; i < n; i = i \* x) //or for(int i = n; i >=1; i = i / x)

cout << "GeeksforGeeks";

}

Final time complexity Ologn

void fun(int n)

{

for (int i = 0; i < n / 2; i++)--------------------------------On

for (int j = 1; j + n / 2 <= n; j++)-------------------------On

for (int k = 1; k <= n; k = k \* 2)--------------------------Ologn

cout << "GeeksforGeeks";

}

Final time complexity On square Logn

void fun(int n)

{

int i = 1;

while (i < n) {

int j = n;

while (j > 0) {

j = j / 2;

}

i = i \* 2;

}

}

Final time complexity Ologn\*Ologn

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