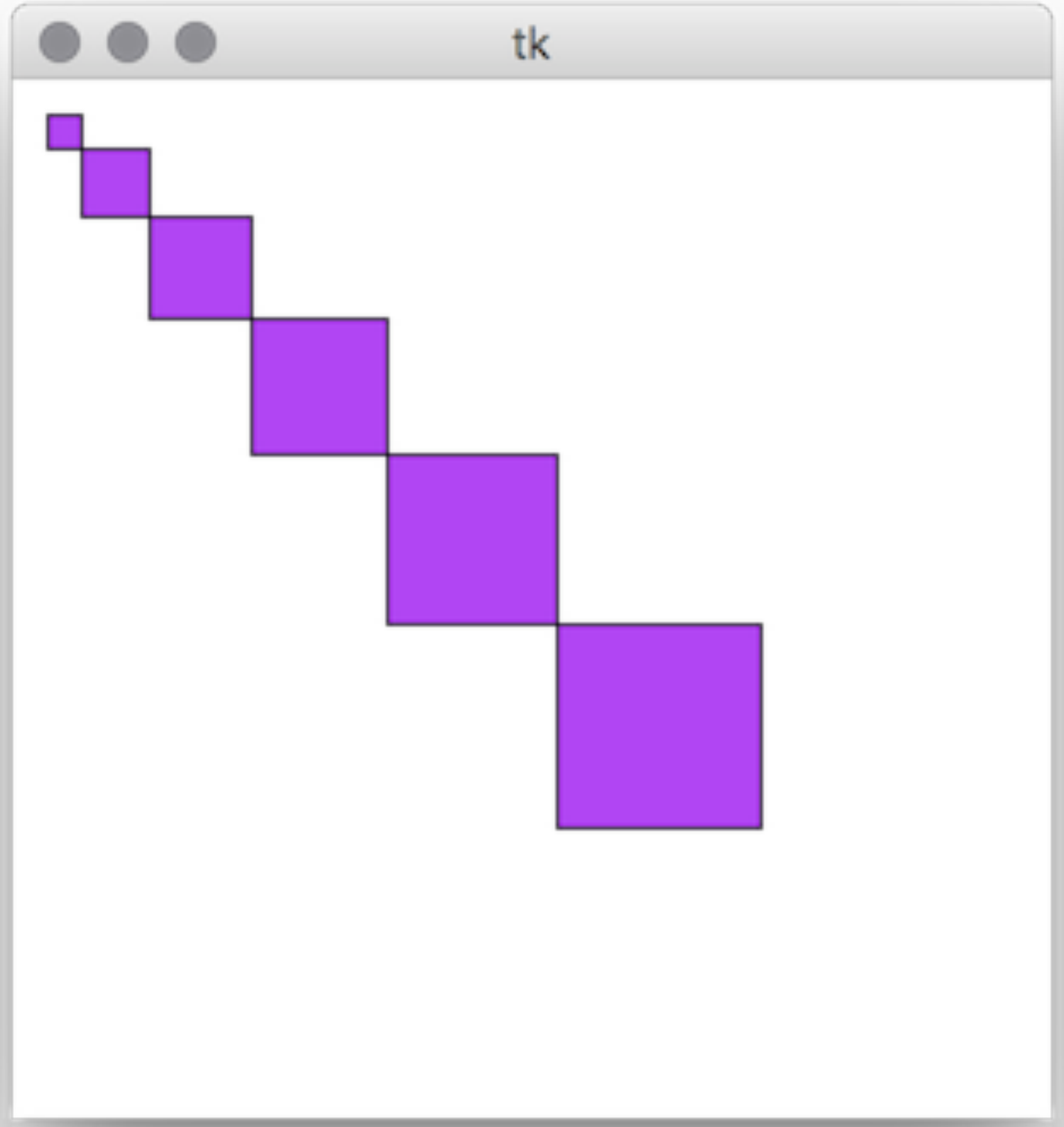
HORVÁTH DONÁT | [Hordon13]

DEMO: PURPLE STEPS 3D

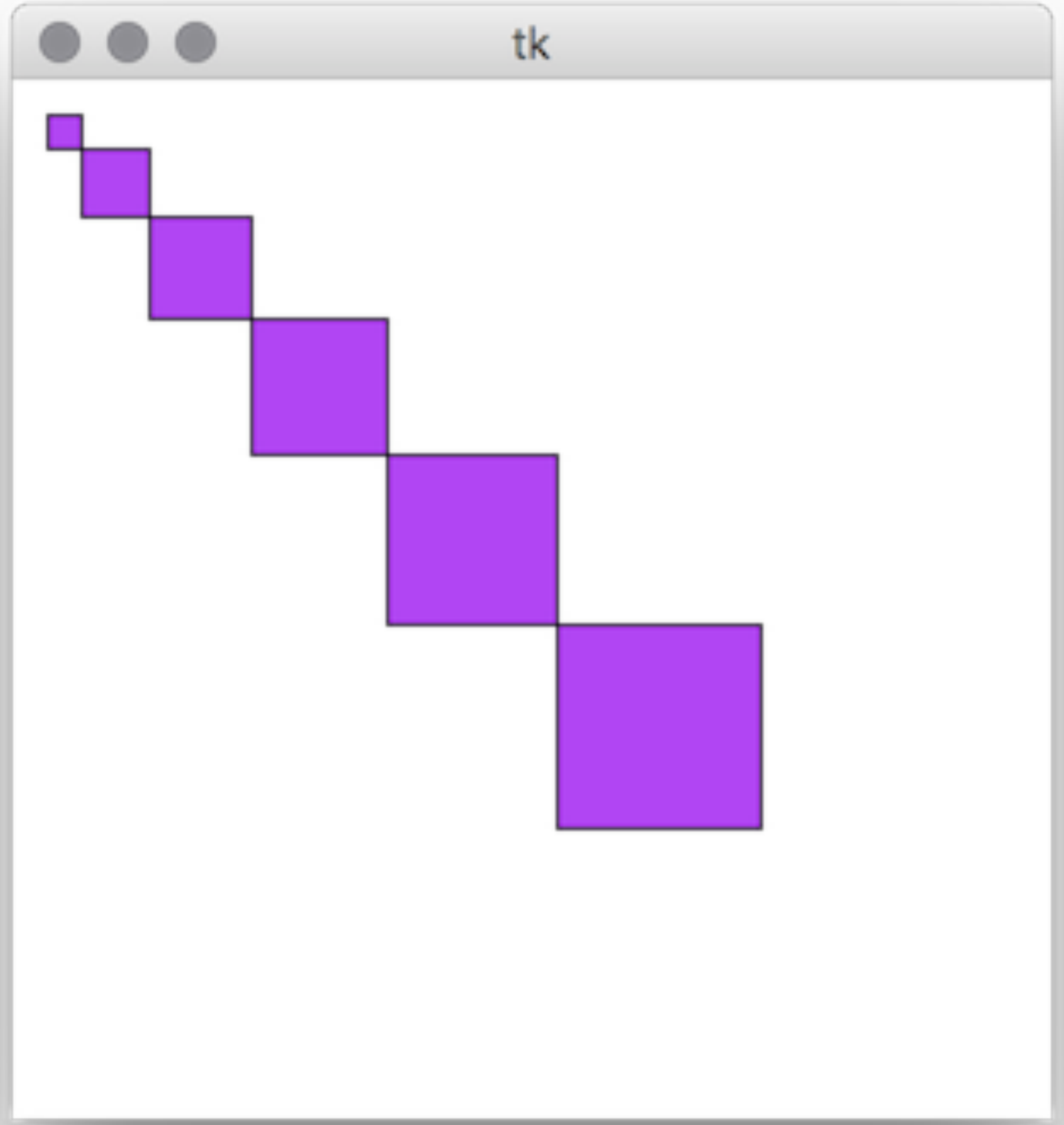
OVERVIEW

- Task: recreate the shape on the picture
- Used methods:
  - Bunch of (int) variables
  - While loop
  - For loop
  - SDL 2



CHALLENGES

- Only use the 75% of the available screensize
- The first block's size should be changeable
- The next block's size is bigger than the previous by the first block size (which is changeable)



```
const int SCREEN_WIDTH = 640;
const int SCREEN_HEIGHT = 640;
```

SCREEN SIZE

```
void purpleSteps3D(int);
```

PROTOTYPE

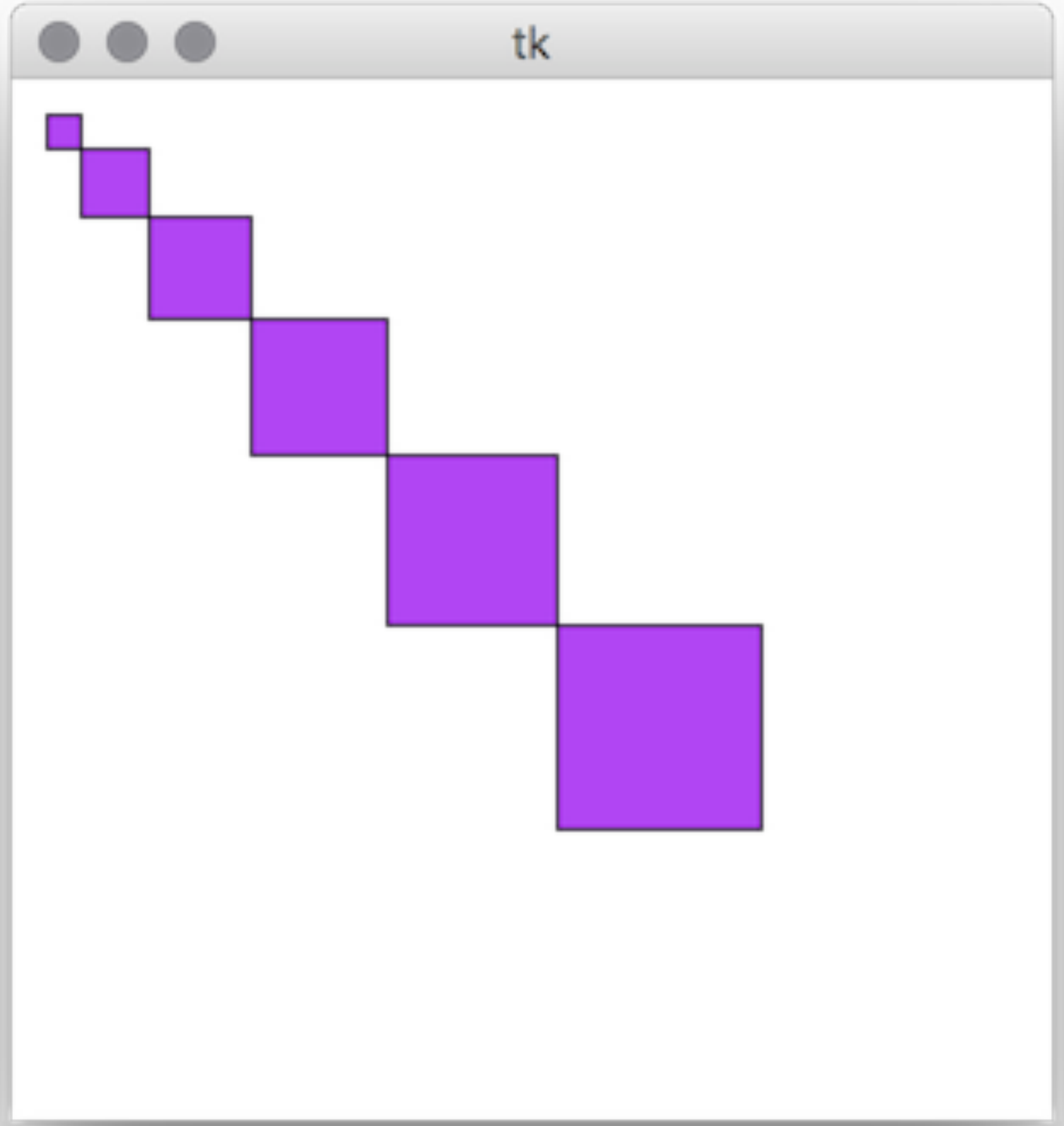
```
void draw() {

    purpleSteps3D(20);
}
```

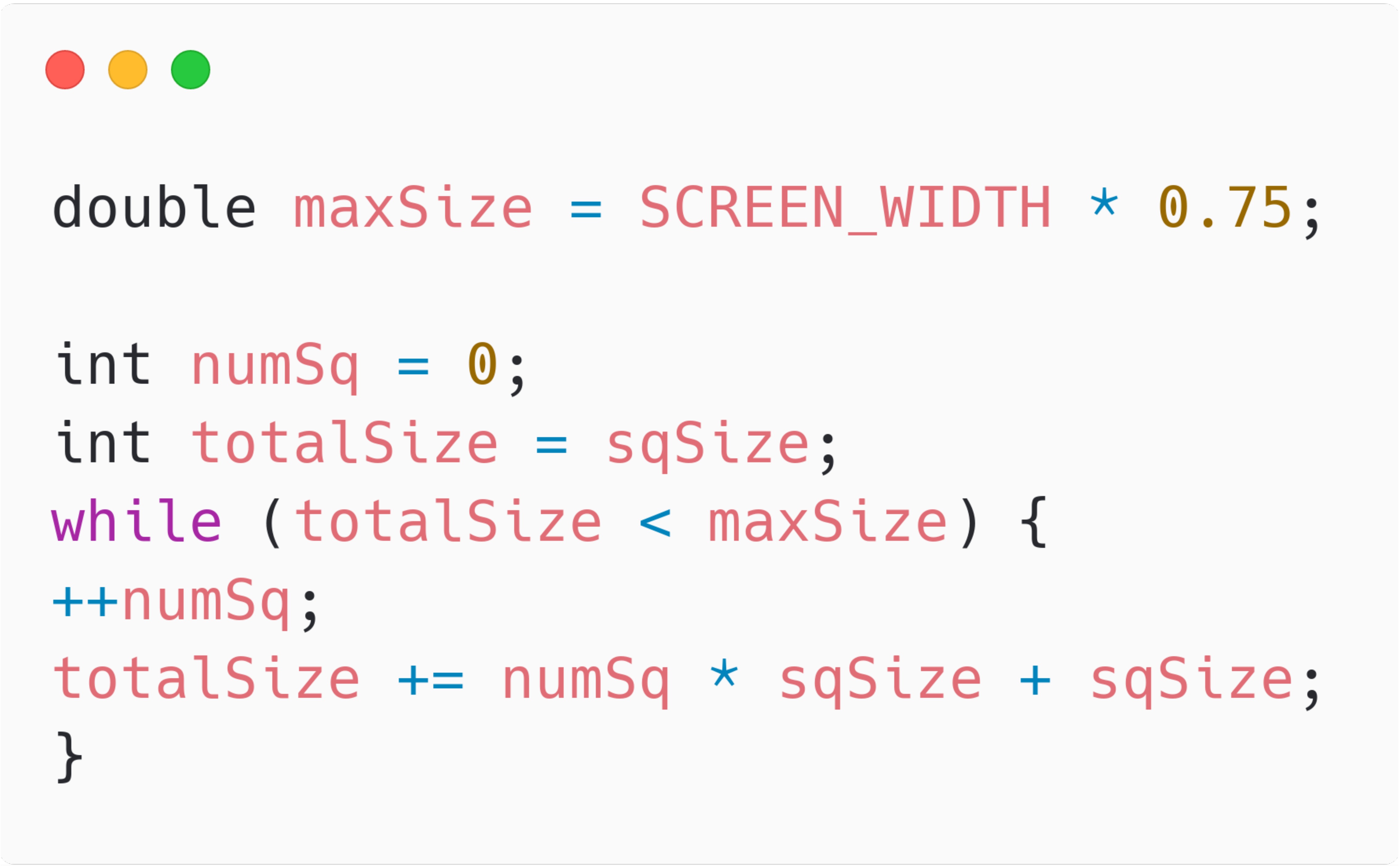
CALL

```
void purpleSteps3D(int sqSize) {

    double maxSize = SCREEN_WIDTH * 0.75;

    int numSq = 0;
    int totalSize = sqSize;
    while (totalSize < maxSize) {
        ++numSq;
        totalSize += numSq * sqSize + sqSize;
    }

    int position = 0;
    for (int i = 0; i < numSq; ++i) {
        SDL_SetRenderDrawColor(gRenderer, 148, 0, 211, 1);
        SDL_Rect sq = {position, position, i * sqSize + sqSize, i * sqSize + sqSize};
        SDL_RenderFillRect(gRenderer, &sq);
        SDL_SetRenderDrawColor(gRenderer, 0, 0, 0, 1);
        SDL_RenderDrawRect(gRenderer, &sq);
        position += i * sqSize + sqSize;
    }
}
```

FUNCTION

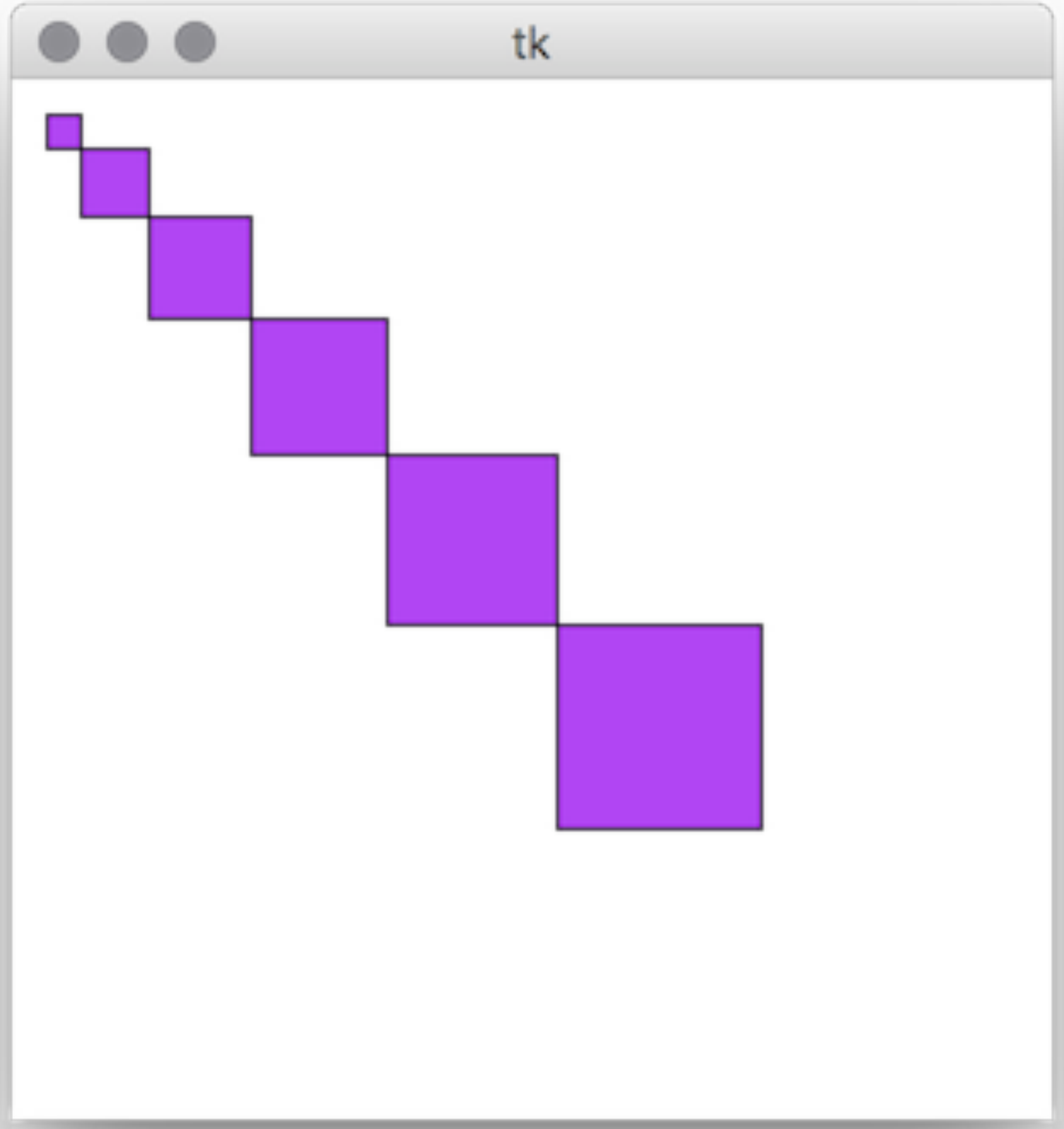
NUMBER OF SQUARES

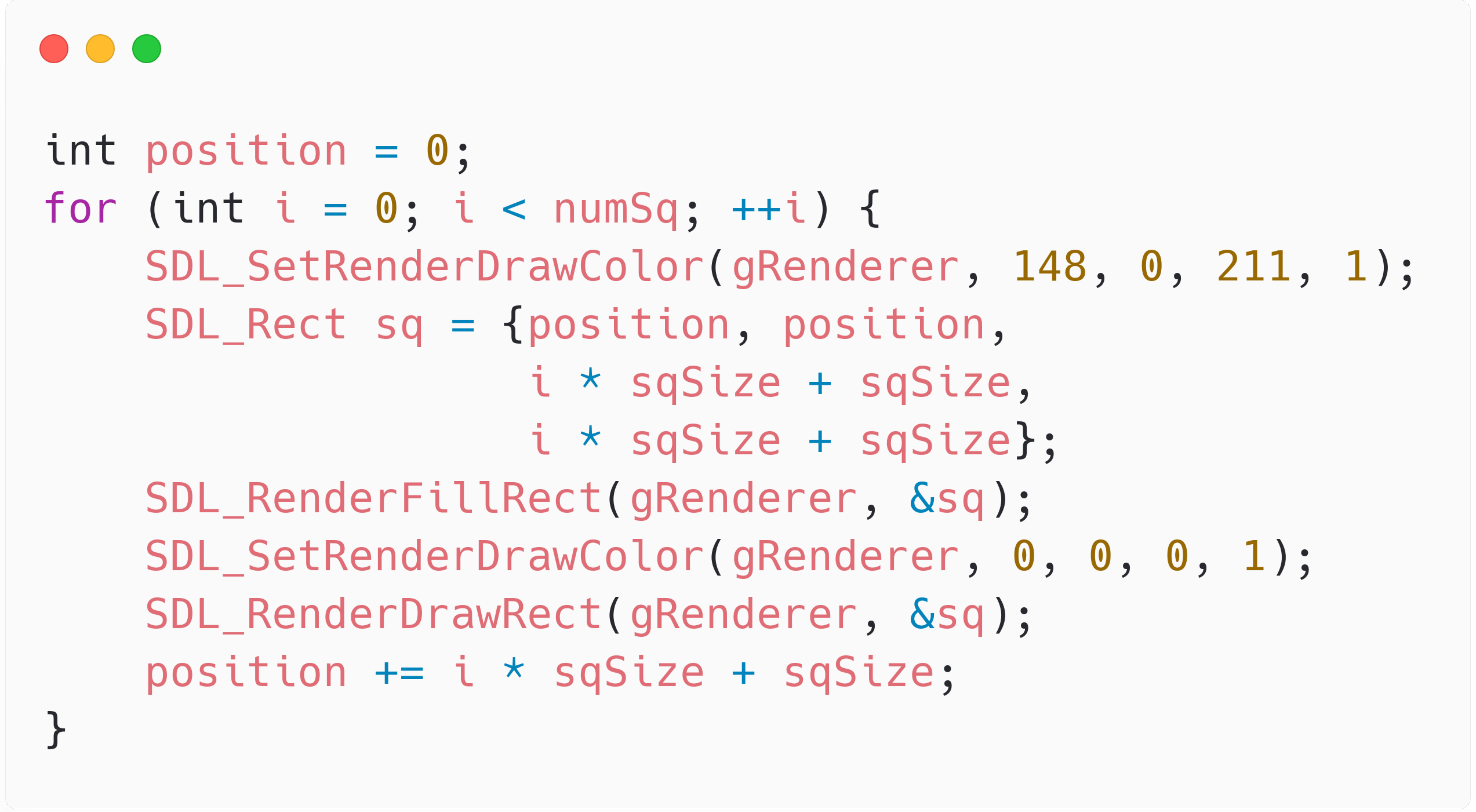




```
double maxSize = SCREEN_WIDTH * 0.75;

int numSq = 0;
int totalSize = sqSize;
while (totalSize < maxSize) {
++numSq;
totalSize += numSq * sqSize + sqSize;
}
```

POSITION OF THE SQUARES





```
int position = 0;
for (int i = 0; i < numSq; ++i) {
    SDL_SetRenderDrawColor(gRenderer, 148, 0, 211, 1);
    SDL_Rect sq = {position, position,
                   i * sqSize + sqSize,
                   i * sqSize + sqSize};
    SDL_RenderFillRect(gRenderer, &sq);
    SDL_SetRenderDrawColor(gRenderer, 0, 0, 0, 1);
    SDL_RenderDrawRect(gRenderer, &sq);
    position += i * sqSize + sqSize;
}
```

SDL_DestroyDemo()