

Largest Rectangle

```
#include <stdio.h>

#include <stdlib.h>

// Function to find the maximum area of the histogram

long largestRectangle(int* h, int n) {

    // write your code here

}

while (top != -1) {

    int tp = stack[top--];

    area_with_top = h[tp] * (top == -1 ? i : i - stack[top] - 1);

    if (max_area < area_with_top) {

        max_area = area_with_top;

    }

}

free(stack);

return max_area;

}

int main() {

    int n;

    scanf("%d", &n);

    int* h = (int*)malloc(n * sizeof(int));

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

        scanf("%d", &h[i]);

    }

}
```

```
}
```

```
printf("%ld\n", largestRectangle(h, n));
```

```
free(h);
```

```
return 0;
```

```
}
```