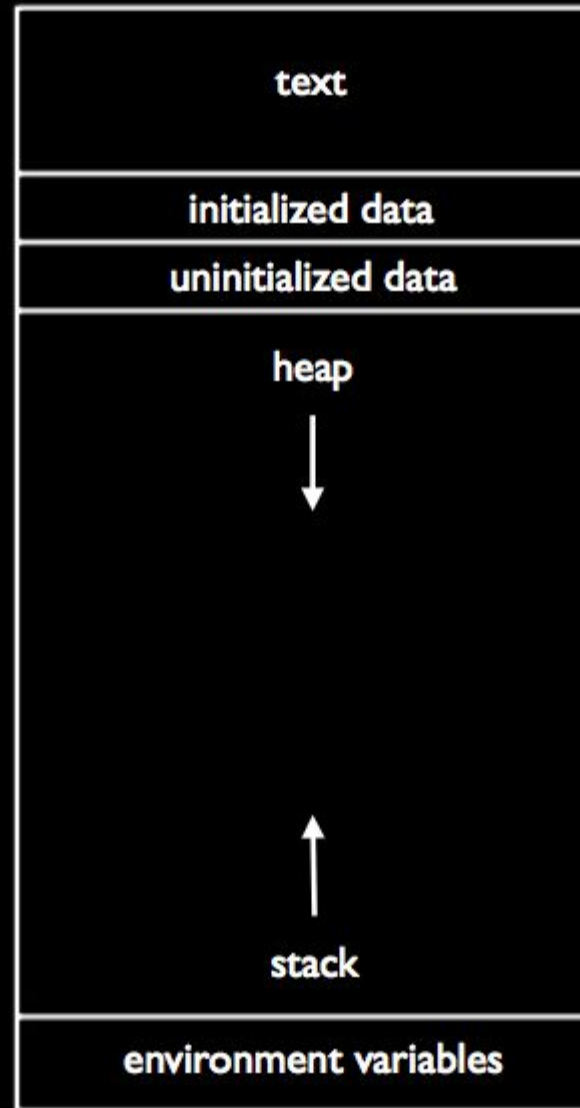


Dynamic Memory Allocation



A call to malloc()

prototype:

```
void* malloc(size in bytes);
```

example:

```
int* ptr = malloc(sizeof(int) * 10);
```

Check for NULL!

```
int* ptr = malloc(sizeof(int) * 10);
```

```
if (ptr == NULL)
```

```
{
```

```
    printf("Error -- out of memory.\n");
```

```
    return 1;
```

```
}
```

A call to free()

prototype:

```
void free(pointer to heap memory);
```

example:

```
free(ptr);
```

```
#include <stdio.h>
```

```
#include <cs50.h>
```

```
int main(void)
```

```
{
```

```
    int* ptr = malloc(sizeof(int));
```

```
    if (ptr == NULL)
```

```
    {
```

```
        printf("Error -- out of memory.\n");
```

```
        return 1;
```

```
    }
```

```
    *ptr = GetInt();
```

```
    printf("You entered %d.\n", *ptr);
```

```
    free(ptr);
```

```
}
```