Footer

```
min block size = 16 bytes
```

```
malloc (1) h
```

```
16_{16} → 0x10
```

```
alloc bit = 0x01
```

```
0x11
```

```
payload
```

```
0x11
```

```
padding
```

```
16 bytes
```

```
footer.
```

```
0x11
```

```
payload
```

```
0x11
```

```
padding
```

```
16 bytes
```

```
4 bytes
```

```
1 bytes
```

```
7 bytes
```

```
4 bytes
```

```
16 bytes
```
free block of size 16 bytes

\[
\begin{array}{c}
\text{0x10} \\
\text{0x10}
\end{array}
\]

\[\begin{align*}
\{ & 8 \text{ bytes} \\
& 4
\end{align*}\]
free(ptr);

b1 \rightarrow 16
b2 \rightarrow 16
b3 \rightarrow 24
\underline{56}
free(p);

P-4

P
prevblock

next block.
Doubly linked list

3 free blocks
Allocator design in PS

Single word aligned

Block sizes → 4, 8, 12, ...

0x04 0x08 0x0c

0000 0000 0000 1000 0000 1100

Heap block

allocated bit
Min block size = 12 bytes

Free block

Header value = size of (payload + padding) bit-OR allocated - bit
prev -> next = free(p)

prev -> next = current -> next;

2410

8 words
\[ \times 4 \]
\[ \frac{32}{-} \]