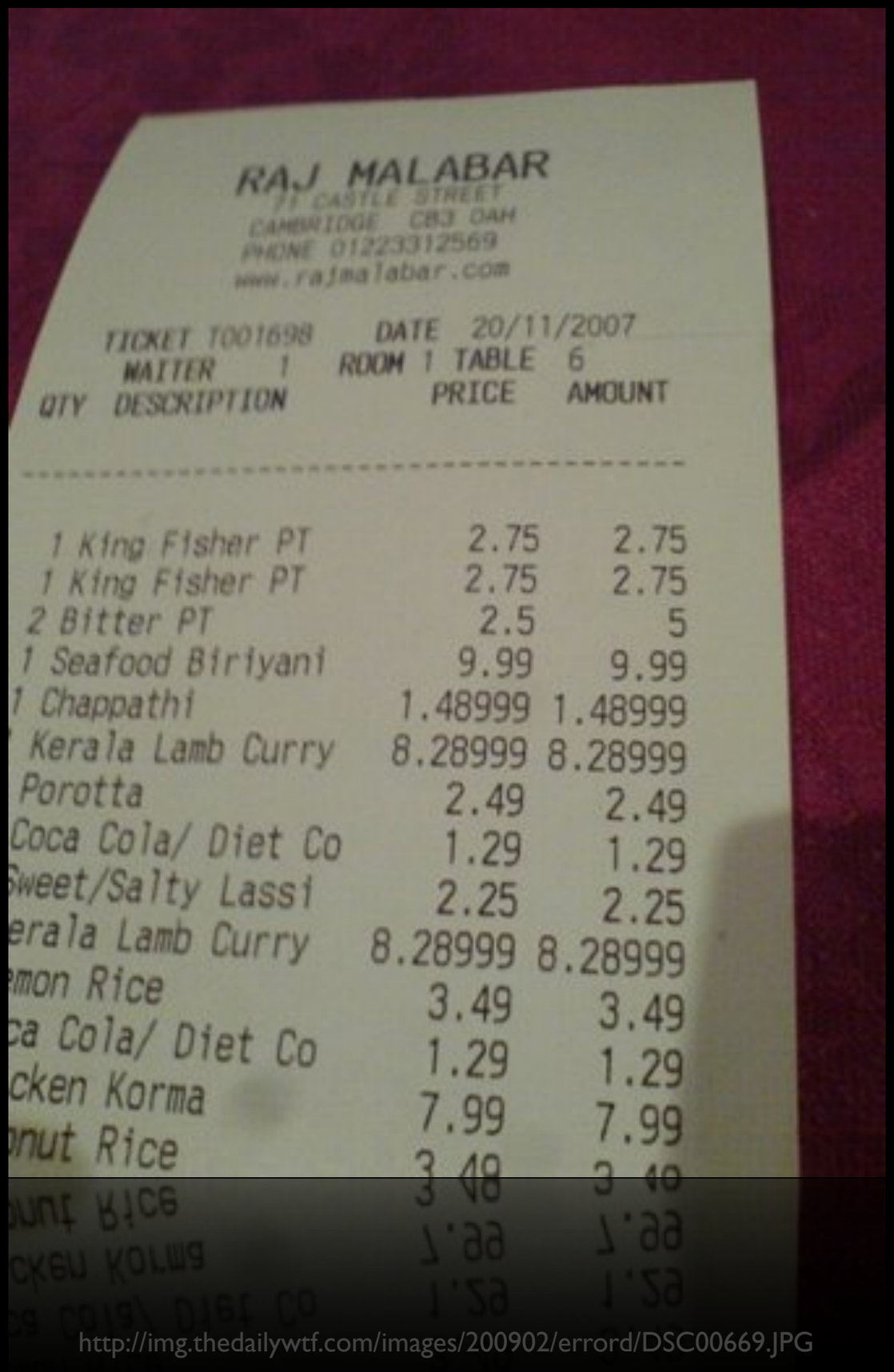

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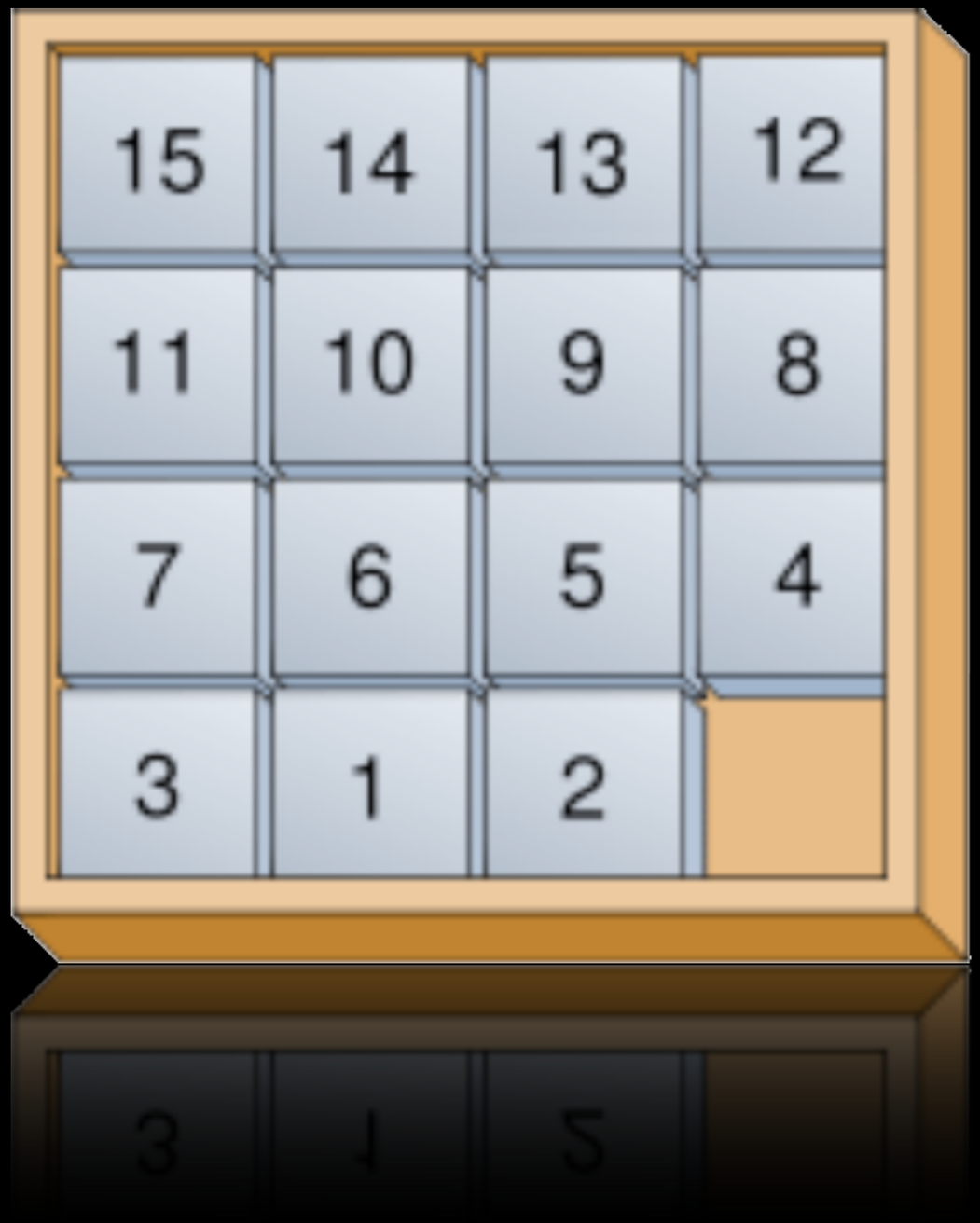
TICKET T001698 DATE 20/11/2007
WAITER 1 ROOM 1 TABLE 6

QTY	DESCRIPTION	PRICE	AMOUNT
1	King Fisher PT	2.75	2.75
1	King Fisher PT	2.75	2.75
2	Bitter PT	2.5	5
1	Seafood Biriyani	9.99	9.99
1	Chappathi	1.48999	1.48999
	Kerala Lamb Curry	8.28999	8.28999
	Porotta	2.49	2.49
	Coca Cola/ Diet Co	1.29	1.29
	Sweet/Salty Lassi	2.25	2.25
	erala Lamb Curry	8.28999	8.28999
	mon Rice	3.49	3.49
	ca Cola/ Diet Co	1.29	1.29
	cken Korma	7.99	7.99
	nut Rice	3.49	3.49

http://img.thedailywtf.com/images/200902/errord/DSC00669.JPG

problem set 3



CS50 Wi-Fi

CS50 Lunch

cs50.net/rsvp

4 2 6 8 1 3 7 5

debugging

gdb

recursion

```
On input of n elements:
    If n < 2
        Return.
    Else:
        Sort left half of elements.
        Sort right half of elements.
        Merge sorted halves.
```

$$T(n) = 0, \text{ if } n < 2$$

$$T(n) = T(n/2) + T(n/2) + n, \text{ if } n > 1$$

$$T(16) = 2 \cdot T(8) + 16$$

$$T(16) = 2 \cdot T(8) + 16$$
$$T(8) = 2 \cdot T(4) + 8$$

$$T(16) = 2 \cdot T(8) + 16$$
$$T(8) = 2 \cdot T(4) + 8$$
$$T(4) = 2 \cdot T(2) + 4$$

$$T(16) = 2 \cdot T(8) + 16$$
$$T(8) = 2 \cdot T(4) + 8$$
$$T(4) = 2 \cdot T(2) + 4$$
$$T(2) = 2 \cdot T(1) + 2$$

$$
\begin{aligned}
T(16) &= 2 \cdot T(8) + 16 \\
T(8) &= 2 \cdot T(4) + 8 \\
T(4) &= 2 \cdot T(2) + 4 \\
T(2) &= 2 \cdot T(1) + 2 \\
T(1) &= 0
\end{aligned}
$$

$$
\begin{aligned}
T(16) &= 2 \cdot T(8) + 16 \\
T(8) &= 2 \cdot T(4) + 8 \\
T(4) &= 2 \cdot T(2) + 4 \\
T(2) &= 2 \cdot 0 + 2 \\
T(1) &= 0
\end{aligned}
$$

$$
\begin{aligned}
T(16) &= 2 \cdot T(8) + 16 \\
T(8) &= 2 \cdot T(4) + 8 \\
T(4) &= 2 \cdot 2 + 4 \\
T(2) &= 2 \cdot 0 + 2 \\
T(1) &= 0
\end{aligned}
$$

$$
\begin{aligned}
T(16) &= 2 \cdot T(8) + 16 \\
T(8) &= 2 \cdot 8 + 8 \\
T(4) &= 2 \cdot 2 + 4 \\
T(2) &= 2 \cdot 0 + 2 \\
T(1) &= 0
\end{aligned}
$$

$$
\begin{aligned}
T(16) &= 2 \cdot 24 + 16 \\
T(8) &= 2 \cdot 8 + 8 \\
T(4) &= 2 \cdot 2 + 4 \\
T(2) &= 2 \cdot 0 + 2 \\
T(1) &= 0
\end{aligned}
$$

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$n \log n$

to be continued...