

Fig 1.1

I have chosen this entity relationship diagram (Fig 1.1) as allotment plots are often broken down into half plots and third plots. This means that one plot (and the accompanying rent) can belong to many people as well as one person having many plots. This would create problems in the program as the plot subdivisions would have to be calculated individually, especially if one person has 1½ plots. This subdivision mitigates these problems as ⅙ of a plot can only belong to one person as the greatest divisions are ⅓ and ½ of a plot and 6 is the lowest common multiple of these two numbers as demonstrated by the fact that both 2 and 3 are prime and that 2\*3 = 6.

Now, the cost of renting a plot for one year is £15.00. The subdivision of a plot into sixths will reduce this to £2.50 per ⅙ plot. This means that there is no problem with division (as there would be if the rent was £10 per year - ⅓ of a plot would cost £3.33 and there would be an unexpected loss of 1p upon that plot.

Each member also buys a share in the allotment upon joining - this I can add into my code as when a new member is inputted into the plot holders table. As no more shares are bought when new plots are gained - see Fig 1.2 - there is no need for any mechanism for shares to be bought by existing members.