PROGRESS OUTCOME 6

Designing a flexible booking system

Context

The school catering department holds an annual fundraiser in support of local charities. The department has asked Abby's digital technology class to create a program to manage the sale of tickets and collection of revenue and to produce PDF tickets electronically. The program needs to produce a spreadsheet giving the numbers of meals required for one lunchtime and two evening sittings, customers' specific dietary requirements, and their table and seat numbers.

Insight 1: Design decisions

In planning the program, I used a flowchart and pseudocode to include all of the required functionality. As there were many variables, I decided the best solution was a program that included a GUI (graphical user interface) easy for the person taking bookings to use and that would generate the information needed by the caterers.

My aim was to make the user interface as simple and inviting as possible to ensure a smooth booking process. Inputting the data was going to be tricky to organise because it contained multiple variables and input events. I discussed my initial plans with the catering manager to check if I'd overlooked anything.

Insight 2: Writing the program

As I began writing the code, I took account of the caterer's wish to be able to reuse the program for subsequent events. This meant I needed to use a modular design to add flexibility. I had to battle early on with the reset facility because an incomplete booking could give an incorrect remaining number of seats. I corrected this after finding an error missing from the reset code that would have stopped the program from running.

Insight 3: Refining and trialling the program

As the fundraiser is for charity, I wanted the program to give the person buying the seats a couple of opportunities to confirm they were happy with their purchase. I also decided to add a countdown of remaining seats on the GUI to encourage buyers to tell their friends they were selling out. I tested the program with classmates to ensure that seats couldn't be double-booked and that it was easy to use.

In the final testing session, the catering manager noticed that the PDF tickets didn't include the seat number. I had missed this error when running my planned test cases, which showed that it's important to test a system with its end-users. I was happy that I could fix this error after the catering manager discovered it.

Insight 4: Evaluating the final outcome

Our debugging had fixed all the errors, so the final program worked efficiently.

Being able to reuse the program means other groups in the school can also use it. The school production team has asked for my help to set it up for their performances. In the next version I'll include a function to check if there are enough tickets left each time a purchase is made, and to provide feedback if there are not. To encourage ticket sales, I'll also add the ability to automatically email a link to event information on the school website to a buyer's friends when the buyer is making a booking.

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