



Rewarding Learning
ADVANCED
General Certificate of Education
2022

Software Systems Development

Unit A2 2

Software Systems Development

[ADV22]

VALID FROM SEPTEMBER 2021

INSTRUCTIONS TO CANDIDATES

You must complete the A2 2 Implementing Solutions Task using this Pre-release Case Study

Pre-release Case Study

SIMPSONS

Simpson's Department Store has been an integral part of the Newtown community for as long as anyone can remember. A family business handed down through three generations of Simpsons, it has always been the place where one could buy anything. Delivering quality is central to the ethos at Simpsons and is applied to the goods supplied and the services provided in the store.

Like most high street businesses, Simpsons has struggled to maintain an adequate profit margin in recent years. This is largely due to the increasing popularity of internet shopping as well as the economic climate. Faced with rising inflation and soaring household bills, customers are exercising caution when it comes to new purchases.

Consequently, the current owner George Simpson and the management team at Simpsons have been forced to seriously consider the future of the store. After lengthy deliberation, they have come up with what they consider to be an innovative and quite radical plan to save the store from impending bankruptcy.

They gathered as much information as possible to inform their decision. In the course of this information gathering process, the management team recognised the deficiency in their current reporting systems. These did not readily yield the required information. The management team identified the need for much better reporting procedures in the future.

At present, the store is divided into the following sections:

- Ladies' wear;
- Men's wear;
- Children's wear;
- Cosmetics;
- Leather goods (handbags, suitcases, briefcases, wallets, purses);
- Shoes;
- Household goods (bedding, china, cutlery, appliances);
- Lighting;
- Electrical goods and electrical services;
- Furniture and upholstery services;
- Wedding;
- Alterations;
- Café.

The management examined each of these sections in great detail and identified some major issues. In the first place, a rather old fashioned management style has been in place for generations. There is a general manager, Henry Wilson, who oversees all sections and deals with staffing and all HR matters including recruitment. Each section of the store has a section head. Henry is only accountable to Mr George Simpson, the current owner, and tends to act autonomously. He has been known to appoint new staff who, in many cases, are unsuitable, without any consultation with the section heads. He also assumes that the section heads are solely responsible for managing their sections. This includes day to day issues relating to staff hours, finance and sales recording, stock control including ordering, organisation and layout of the section, as well as any marketing and sale strategies used.

As a result of their investigations, the management team has recognised that this approach is catastrophic and lacks cohesion and consistency. Each section has a different approach to identifying order items. Little attention has been paid to overstocking, and in all clothes sections the stock rooms are bursting with items that should never have been ordered and which should at least have been offered as sale items. It has also been discovered that deliveries are seldom checked and reconciled against delivery dockets. Section heads just automatically pass on invoices to the finance manager who has limited means of validating their accuracy. Many items are now well out of fashion and there is little chance that they will be sold. Some sections are also over staffed by personnel who are not suited to sales roles.

In terms of finance and daily reconciliation of cash and totals, there is no fixed procedure for section heads to follow. While the management has always believed in trust and integrity, it is now very clear that proper monitoring and control is not in place.

The management team has considered every section carefully. They have made some very difficult decisions to save the store. The premises themselves are quite extensive and the cost of maintenance and general upkeep is significant. However, given the nature of the prime location in town, it is an important and very valuable building to maintain.

The entire top floor of the store will now be converted into office space for rent. Conference facilities will be available. This will earn much-needed income and help pay for the rates and general upkeep of the premises.

The team has decided to prioritise areas where skills and services are needed that cannot be obtained from the internet and to abandon sections which are no longer profitable.

They have decided to stop trading in any type of clothing apart from wedding apparel. The team considers that the store can no longer compete with internet availability and cut price shops, both of which can provide a vast range of well-priced clothes. They do however recognise that many people now wish to repair and renovate garments instead of buying new items. The store has highly skilled staff and excellent facilities for this type of work, and the team plans to extend their current provision and provide a first class dressmaking, tailoring and alteration service to the public.

The store already has a very well-appointed wedding salon with trained staff and exclusive stock. This will be further developed into a wedding hire service which should attract considerable interest from the public.

The team has decided to maintain the sale of designer cosmetics but will now offer beauty services to the public. This will include the normal range of treatments available in any beauty salon. Pre-wedding beauty packages for weddings will be available and it is hoped that this will attract many customers who have purchased or hired wedding attire. There will be an appointment system as well as a drop-in facility. This could possibly involve the hiring of new staff but full training is to be offered to existing staff in other sections in order to offset redundancies.

Although the store has a highly skilled team of upholstery staff, the management team do not intend to provide refurbishment services for furniture or to stock furniture items at present.

The team has decided to maintain their range of household goods as they see opportunities for sales associated with wedding lists and quality gift items.

In addition, Simpsons has always supplied an exclusive range of leather goods such as suitcases, briefcases and handbags. However, it has been decided not to retain these ranges at present.

The management team recognise that there are many long-serving members of staff who would welcome retirement packages. Other members of staff will be offered redeployment or retraining. The team hopes that this will minimise possible redundancies.

In terms of management of the new store, teams will be created within each area. Staff will be given opportunities to move between teams so that knowledge and awareness of the full range of facilities will be enhanced. There will be an overall senior manager and team leaders from each area. Teams in each area will meet regularly and team leaders will meet the senior manager weekly so that all information is shared and there is good control over everything that is happening across the store. Policies and procedures will be put in place to ensure consistency throughout. It is hoped that Simpsons will provide the following goods and services:

- Office and conference facility rental;
- Wedding dresses/bride/bridesmaids, wedding suits, mother of the bride outfits, available for purchase or hire. (Wedding shoes will also be available);
- Dressmaking and alterations;
- Cosmetics and beauty services;
- Household goods (bedding, china, cutlery, appliances).

The reorganisation means that the following sections will no longer operate:

- Ladies' wear;
- Men's wear;
- Children's wear;
- Leather goods (handbags, suitcases, briefcases, wallets, purses);
- Shoes (with the exception of wedding shoes);
- Lighting;
- Furniture and upholstery services;
- Electrical goods and electrical services;
- Café.

The management at Simpsons insists that any new system must allow for stock required by any department to be ordered through a central system that records the item and provides tracking of the item, from the point of order to actual sale and through delivery. This will apply to all office equipment, bridal wear and accessories, materials and sewing products, cosmetics for sale, all beauty products, and all household goods.

Office and Conference Facility Rental

With the total redesign of the store, the top floor will accommodate ten office suites and one conference suite. The management would prefer rental agreements to be for no less than one year. However, they have decided in the first instance to allow two of the offices to be let on shorter leases – three months and six month blocks respectively. They acknowledge the fact that small enterprises may not be successful and in the long term unsustainable. In order to secure a booking, prospective tenants must pay 20% of the cost of each time span in advance and thereafter every four weeks. The offices and conference facilities will be serviced by the cleaning staff already in place in Simpsons. Payment for these services must be made monthly and will include daily cleaning and maintenance of all fittings and furnishings.

The conference suite can be booked for a half day, a full day or for blocks of days. When the suite is booked, a 20% non-refundable deposit must be paid, regardless of the time span required. Clients requiring catering facilities must be quite clear about their requirements as catering must be arranged through an external provider. Tea, coffee, scones, biscuits and sandwich lunches can be provided. These facilities must be booked at least one week in advance. A client will accrue an additional charge of 10% of the total if they try to arrange catering within three days of the event. Catering bookings cannot be taken on the day before the event. Dates must be thoroughly checked.

When booking the conference facility, detailed information must be provided. This will include dates, times, the number of delegates, any special requirements in terms of access. If catering is to be included, dietary requirements, allergy information, whether bottled water is to be provided, and if morning break, afternoon break or lunch catering is required must be noted.

The management of the offices and conference suite is a critical factor in terms of providing income. The management team requires a fully operational booking system that will provide detailed information of all bookings including the client details, dates, deposits and payments. The system must provide a comprehensive invoicing option and detailed payment information for individual clients as well as collective summarised monthly reports for all clients using the facilities.

Wedding dresses/bride/bridesmaids, wedding suits, mother of the bride outfits, wedding hire. (Wedding shoes will also be available)

This area will be fully developed so that Simpsons will become specialists in the delivery of full wedding provision. A full range of wedding stock will be retained and customers can purchase or hire individual items or a range of items. In order to promote sales, Simpsons will offer a 10% discount to customers who buy outfits for more than one member of the wedding party. This could be a bride and her bridesmaids or a groom, or other combinations. The discount will be offered providing at least one other member of the bridal party buys their wedding outfit at Simpsons.

Appointments for potential customers to consider bridal outfits must be made at least two weeks in advance. They must be made through the bridal salon and the number of people attending should be noted. There is no charge for this type of appointment.

If a customer expresses significant interest in a wedding dress but has not fully decided, it is possible, for a fee of £20, for the item to be set aside for a period of two weeks. The fee will be refunded if the customer declines any further interest within this time. Otherwise the fee will be retained and the item returned to stock.

When a customer decides to purchase an item that requires alteration, 10% of the total cost of the item must be paid. Any proposed alterations to items must be recorded with specific details and bookings taken for further fittings. Details of the date of the wedding and when items must be available for collection must also be recorded.

Attendance at preliminary bookings and any subsequent fittings should be noted on the system.

When alterations are complete, the balance for the purchase must be paid in full, along with charges for the work carried out in the alterations and the charge for each fitting.

Every effort will be made in the salon to promote the use of other in-store facilities.

Any customer wishing to place a wedding gift list in the store will be given a £50 voucher to spend in Simpsons.

Any customer wishing to avail of a beauty wedding package will be offered a 5% reduction in the overall cost of that package regardless of the number of people in the wedding party.

Dressmaking and alterations

Although Simpsons has always provided an alteration service for customers, the provision of a dressmaking service is a new idea. People frequently have a clear idea of what they would like to wear but cannot find a suitable outfit.

When a client wishes to have a bespoke garment, they must make an appointment with the team leader of this section, who is herself a highly skilled designer. This first appointment is free. The team leader will either suggest an existing pattern for the request or produce a design for the client. When a decision has been made, client details and measurements are recorded, a fabric is chosen and costed and further fitting appointments are scheduled and booked on the system. An overall estimate is given to the customer and a deposit of £50 must be paid before any work can commence. The final customer invoice will include a full breakdown of the material required and any necessary accessories such as buttons and zips, as well as the cost of the fitting appointments and the labour involved.

When clients wish to have alterations made to garments, a detailed form must be completed with the client details, the nature of the alteration, cost and expected completion date. Clients are given a copy order docket detailing all the information. Clients generally pay when the work is completed but can pay at any time.

Any alteration requests coming from the bridal salon should also be recorded on the system in a similar manner and details of the work done passed back to the salon so that final invoices can be prepared.

All ordering of stock must take place through the central system.

As with all other sections in the store, the management now requires detailed information on all sales and charges. This must take the form of a weekly report and a monthly summary prepared for the management team.

Cosmetics and beauty services

Simpsons has always stocked designer beauty products and intend to continue with this provision. The development of a fully equipped beauty salon will provide new services to the public. A full range of beauty treatments will be provided at the salon. Four fully qualified beauty therapists have been employed to manage the salon. Two of the therapists are full-time members of staff and two are part-time. Neither of the part-time staff work on Fridays and both only work half days for the rest of the week. This is problematic as it has been noted that Friday is quite a busy day. The designated area for the salon comprises a small reception area and three treatment rooms as well as a small nail bar area. Bookings should be made in advance and recorded on the system. However, the salon will also take drop-in clients wherever possible. The nail bar is particularly popular at weekends.

Any member of staff can record a booking on the system. It is vital that these bookings are carefully managed in terms of scheduling the availability of staff and treatment rooms. When a booking is made, full contact details are recorded as well as the treatment required. Sometimes, a client will arrive for a particular treatment and then change their minds about what they require. This is hard to manage as some treatments take longer than others. The team leader is responsible for ensuring that the schedule is appropriate and allows sufficient coverage for all bookings.

When a client first uses the salon, they must complete a questionnaire entered online by the therapist. This questionnaire relates to health issues and allergies and must be recorded before any treatment can be carried out.

Household goods (bedding, china, cutlery, appliances)

This area must be tightly controlled as the sustainability of the sales of these goods must be regularly reviewed. The management requires the stock for this area to be managed in the same way as for all other sections. Stock must be ordered through the central system that records the item ordered and provides tracking of the item, from the point of order to actual sale and through to delivery. The management is particularly keen to identify fast- and slow-moving items and considers that the best way to do this is to get the sales staff to identify these and produce suitable reports. This will assist promotional drives to clear slow-moving stock items.

The management at Simpsons is very clear about requiring totally accurate stock and sales reports. These must be maintained meticulously and generated weekly as well as on a monthly summarised basis.

Simpsons hope to develop sales through special promotions and wedding lists. When a client wishes to place a wedding list at the store, an appointment is made by the bridal salon for the couple to view the available products in the household goods section. This means that a member of the household goods sales staff, usually the team leader must be available to accompany the couple when they first view the stock. This helps the client to identify items in a range of prices. When the couple has decided on the items for inclusion, a member of staff will record the items required and provide a list to the couple for verification. When the list is completed, it is made available in printed form for anyone wishing to purchase a gift. There is also an on-line version of the list available for viewing at a terminal in the store. This gives someone wishing to make a purchase full information about the product, it also shows which items have already been sold as the list must be updated when a sale is made.

When an item is purchased from a wedding list, the sale must be recorded both in the normal way as for any item, but also separately so that the total sales for the wedding list is accumulated.

It is important for the management to get accurate weekly stock and sales figures from this section as well as summarised monthly reports. Reports on wedding lists must also be available in a similar manner. This will enable the management to keep very tight control of the section.

SUMMARY

Managing the entire provision at Simpsons will be challenging and will require a complete review of all administrative systems. A fully integrated system is required that can be built in separate developments and combined to provide an effective, efficient system. Solutions must resolve the issues being experienced in the following areas and address any future developments noted:

- Office and conference facility rental;
- Wedding dresses/bride/bridesmaids, wedding suits, mother of the bride outfits, wedding hire. (Wedding shoes will also be available)
- Dressmaking and alterations;
- Cosmetics and beauty services;
- Household goods (bedding, china, cutlery, appliances).

Development and implementation of any of these subsystems would be very welcome.

PROBLEM

The management at Simpsons recognises the administrative deficiencies at the store and with the new proposals are keen to ensure effective change. They want to implement a computer system that can be built gradually with defined elements developed separately but linked into an overall structure.

They consider that this would be the best way to develop a comprehensive system that would enable the efficient management of the new Simpsons store.

TASK

You must produce a solution, presented on appropriate electronic media, to the specified problem that includes the following:

- A detailed project plan that reflects the actual project development.
- A detailed User Requirements Specification.
- The design of your solution including final ER diagram and normalisation to 3rd normal form of the solution.
- The development and implementation of your solution using a selected software tool to connect the required database to the GUI for the specified problem.
- Documentation of the solution including the code to create and populate the supporting database; code to develop the solution; and an instructional user guide.
- A test plan.
- Implement test plan, recording only failed tests and corrective action.
- A critical evaluation of your solution to the problem to include project plan; user requirements; test procedures; and personal performance.

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