

Assignment Guidance and Front Sheet

This sheet is to be populated by the Module Tutor, checked by the Programme Team, and uploaded to Moodle for students to fill in their ID and submit with their assessment.

Student ID or IDs for group work	Student fill in own ID and attach document for submission
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Module Title & Code	<i>WM142 – Information Risk Management</i>
Module Owner	<i>Peter Norris</i>
Module Tutor	<i>Alexandra Samantha Driscoll</i>
Module Marker	<i>Alexandra Samantha Driscoll</i>
Assessment type	<i>Essay</i>
Date Set	<i>Wednesday 2nd March 2022</i>
Submission Date (excluding extensions)	<i>Friday 13th May 2022</i>
Marks return date (excluding extensions)	<i>Tuesday 14th June 2022</i>
Weighting of mark	<i>70%.</i>

Assessment Detail	<i>Please see below</i>	
Additional details	<i>The wordcount is 3,000 words.</i>	
Module learning outcomes (numbered)	<i>1 – Apply a relevant risk management approach to a given organisation or scenario</i>	
Learning outcomes assessed in this assessment (numbered)	<i>1 – Apply a relevant risk management approach to a given organisation or scenario</i>	
Marking guidelines	Task	Mark
	1: Choose an appropriate methodology for performing information risk assessment and briefly explain and justify how you applied your chosen methodology. You should include examples of what you did in the appendix.	10
	2: Identify the most relevant information risks and complete a risk register.	20
	3: Select and explain the top four risks from your risk register (discuss the threat actors, threat, vulnerability, impact, and likelihood) and recommend ways to treat them.	40
	4: Create a presentation for the owner and managers of Sherbourne House. explaining the top four risks and the recommended treatments.	20
	5: Provide a variety of references from a variety of sources, including academic sources to support the key arguments within the report.	5
	6: The assignment is formatted appropriately. Marks will also be awarded for presentation, including spelling and grammar	5
	TOTAL:	100

	<i>Please see below for a more detailed marking scheme</i>
Submission guidance	<i>All work must be submitted to Tabula, please see below for more details.</i>
Academic Guidance	<i>Academic guidance to be provide throughout the module.</i>
Resubmission details	The University policy is that students should be given the opportunity to remedy any failure at the earliest opportunity. What that “earliest opportunity” means in terms of timing and other arrangements is different depending on Programme (i.e. Undergraduate, Full Time Masters, Part Time Postgraduate, or Overseas). Students are advised to consult your Programme Team or intranet for clarity.
Late submission details	If work is submitted late, penalties will be applied at the rate of 5 marks per University working day after the due date, up to a maximum of 10 working days late. After this period the mark for the work will be reduced to 0 (which is the maximum penalty). “Late” means after the submission deadline time as well as the date – work submitted after the given time even on the same day is counted as 1 day late.

Assessment

Introduction

During this module you have been learning how to identify information risks and treat them. Usually, information risk management is conducted within teams. To replicate this you will be asked to work in groups. This will give you an opportunity to gain experience with working in groups, which is a vital skill for both information risk management and cyber security.

Information risk management will involve consultation with members of the organisation, many of which may have little knowledge of information security. Information risk management practitioners do not decide which risk controls to implement, but make recommendations to senior management, who will make the final decision. Those in senior management are often busy, with little spare time and may not have a full understanding of information security. Because of this it is vital that as information risk management practitioners we can communicate effectively with others.

In this assignment you will be asked to conduct an information risk assessment at a hotel and conference centre. Once you have completed the risk assessment process, you will write a report outlining the top four risks along with recommended treatments aimed at the owner. No risks may be ignored or accepted.

Finally, you will create a presentation explaining the top four risks, along with recommended treatments for the owner of Sherbourne House and its managers. This presentation will be ten minutes and you will be expected to present it and answer questions at a viva.

The case study for this assignment can be found at the end of this document. The case study is large and contains a significant number of information assets and potential risks. Information risk practitioners will never be able to identify every single risk.

You are not expected to identify every possible risk from the case study. Focus on identifying the most relevant risks. You should aim to identify at least twenty risks.

Tasks

You must complete the following tasks.

1. Choose an appropriate methodology for performing information risk assessment and briefly explain and justify how you applied your chosen methodology. You should discuss examples of how you used this methodology. Any examples should be placed in the appendix.
2. Identify the most relevant information risks and complete a risk register.
 - You should aim to identify at least twenty risks.
3. Create a report aimed at the owner. You should discuss the top four information risks (discuss the threat actors, threat, vulnerability, impact, and likelihood) and recommend ways to treat them
 - If your group only has three members, then pick the top three risks
4. Create a presentation to explain the top four risks and their treatments to the owner and managers of Sherbourne House.
 - The top risks and treatments should be the same as the ones in task 3
 - The presentation should be around ten minutes
 - The presentation should be appropriate for the owner and managers, who may have little knowledge about information security
 - You will be expected to present your presentation at a viva
 - During the viva you will be expected to answer questions
 - Attendance at the viva is mandatory for all group members
 - Once you have submitted your assignment you are not allowed to modify your presentation

Deliverables

Your final submission will consist of a report of up to 3,000 words (excluding references, tables, and appendices). The risk register and presentation does not count towards the word count. Any submissions beyond 3,300 words will attract a penalty of 10%. The report should contain:

1. A table of contents
2. An introduction
3. A section explaining your chosen methodology
4. A section containing the report aimed at the owner discussing of the top four risks and any recommended risk treatments.
 - a. The report should be an appropriate document aimed at management, for example a board paper
5. A conclusion
6. A reference section
7. Any appendices

As well as the report you should also submit the following:

1. A copy of your risk register
2. A copy of your presentation slides

3. A folder containing any other files you may have created

Submission

You should submit the following to Tabula:

1. Your report, which should be called IRM_Assignment2_Report_Group[X].pdf
2. Your risk register which should be called IRM_Assignment2_RiskRegister_Group[x].xlsx
3. Your presentation which should be called IRM_Assignment2_Presentation[X].pptx
4. A folder containing any additional files called IRM_Assignment2_AdditionalFiles_Group[x]

Replace [X] with your group number. For example: IRM_Assignment2_Report_Group[1].pdf

All students must upload an identical copy of the assignment

Important Notes

1. No identified risks can be ignored or accepted
2. You must use the Harvard referencing system.
3. The report must be submitted as a pdf
4. Your risk register should be a spreadsheet
5. Your presentation slides should be submitted as a PowerPoint file.
6. All work should be done and saved in your assignment group on Microsoft Teams
7. Late submission penalties will apply
8. This is a group assignment
 - All members are expected to submit identical copies of the assignment
9. Group members are responsible for ensuring all members participate
 - If there are issues that cannot be resolved, then Alexandra will deal with them. However, students will have been expected to make reasonable attempts to resolve any issues
 - Any student not sufficiently participating will have their assignment mark capped at 40%
 - Any students who do not contribute to the assignment may not pass.
 - Any student who does not allow others to contribute may also be penalised
10. The assignment is due Friday 13th May 2022
11. All group members must attend a viva in the third semester
 - a. The dates and times will be announced nearer the
12. Contact Alexandra Driscoll if you have any questions:
alexandra.s.driscoll@warwick.ac.uk
13. Your group may be required to attend a viva in the third semester

Marking Scheme

The following marking scheme will be used. The assignment has a total of 100 marks.

Task	Criteria	Mark
1: Choose an appropriate methodology for performing information risk assessment and briefly explain and justify how you applied your chosen methodology. You should include examples of what you did in the appendix.	1a: An appropriate methodology was chosen	5
	1b: Explanation and justification for chosen methodology, which included a discussion of examples	5
2: Identify the most relevant information risks and complete a risk register.	2a: Appropriate information risks identified	10
	2b: An appropriate risk register is created	10
3: Select and explain the top four risks from your risk register (discuss the threat actors, threat, vulnerability, impact, and likelihood) and recommend ways to treat them.	3a: Top four risks identified	4
	3b: Components of top four risks discussed	16
	3c: Potential risk treatments for each risk identified	4
	3d: Potential risk treatments discussed and compared	16
4: Create a presentation for the owner and managers of Sherbourne House. explaining the top four risks and the recommended treatments.	4a: Presentation explains the top four risks and their treatments	8
	4b: Presentation slides are appropriately formatted, and the presentation is appropriate for the owner and managers of Sherbourne house.	12
5: Provide a variety of references from a variety of sources, including academic sources to support the key arguments within the report.	5a: Sources included	1
	5b: Academic sources included	1
	5c: Sources referenced correctly using the Harvard referencing system	3
6: The assignment is formatted appropriately. Marks will also be awarded for presentation, including spelling and grammar	6a: Report in an appropriate style and correct file formats used	1
	6b: Spelling and grammar	2
	6c: Appropriate formatting, including tables and figures appropriately labelled and cited within the document text	2

Sherbourne House Hotel and Conference Centre

Case Study

WM142 – Information Risk Assignment 2 2021/2022

Created by Alexandra Driscoll

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1. Introduction

Alex Driscoll owns and runs Sherbourne House, which is a hotel and conference centre, located in Kenilworth. It is based in a stately home built in 1787. Sherbourne House has an annual turnover of £2,000,000, yearly costs of £1,000,000 and currently has £80,000 in the company's bank account.

Sherbourne House has 100 hotel rooms, and four conference rooms, capable of holding between 50 and 100 people each. The hotel also has a bar and restaurant. While many customers are business customers, many non-business customers, including families also stay at the hotel. A variety of staff are employed, and the different roles can be found in Table 1-1. Each member of staff has a unique staff ID (5-digit number) and the hotel keeps a record of all former members of staff.

Role	Description	Number of Staff in Role
Receptionist	Receptionists assist guests with checking in and out and any other queries they have. They also handle all bookings.	7
IT Manager	The IT manager is responsible for maintaining all the IT infrastructure at Sherbourne House.	1
Owner	Alex Driscoll owns Sherbourne House and has overall responsibility.	1
Hotel Manager	This hotel manager is responsible for the smooth operation of the hotel.	1
Conference Manager	This member of staff oversees the conference centre and the running of conferences.	1
Restaurant and Bar Manager	This member of staff oversees running both the restaurant and bar.	1
Hotel Room Cleaners	These cleaners are responsible for cleaning the hotel rooms and collecting, cleaning, and returning any laundry.	15
Cleaners	The cleaners clean all parts of Sherbourne House (including conference rooms, bar, and restaurant), though they do not clean the hotel rooms.	5
Bar Staff	The bar staff work behind the bar. They take customers' orders, prepare drinks for both the bar and restaurant, bring bar food to customers in the bar and keep the bar tidy.	6
Waiters	Waiters work in the restaurant. They take the orders of the customers and bring them their food and drinks. They are also responsible for taking room service orders to the guests' rooms.	20
Chef	The chefs prepare food for both the bar and restaurant	4
Conference Staff	The conference staff are responsible for setting up conferences and providing support to customers. They also help conference members check in upon their arrival.	10
Maintenance Manager	The maintenance manager is in charge of the maintenance staff.	1
Maintenance Staff	Maintenance staff carry out any required maintenance.	5

Table 1-1 - Different staff roles

1.1. Staff Records

A record is created for each member of staff. This includes their unique staff ID, full name, address, phone number (landline and mobile number), date of birth, gender, bank account details, current salary, National Insurance number, a copy of the CV they sent when applying for their job, along with any references received, including the name and contact details (address, phone number and E-mail address) of the referees. Information about any time off, including the reason is also recorded along with any relevant medical information, including sick notes. When a member of staff leaves the hotel will keep this record and store the reason they left.

1.2. Maintenance

Members of staff can submit a maintenance request, which includes their staff ID, name, the date and time of the request, a location, and a description of the request. The maintenance staff will prioritise all the requests (which is recorded). When a member of the maintenance team attends a job, they record the date and time they attended, what they did and if the job is complete or additional work is required. Once the job is complete the request is closed and archived.

Sherbourne House has five maintenance staff. They are responsible for maintaining the main building and grounds. This includes performing maintenance in the hotel rooms. A member of the maintenance staff is on site 24/7. All members of the maintenance team have access to every room in the hotel. If an external contractor needs to be employed, approval is required from the owner. External contractors must be always accompanied by a member of the maintenance staff.

2. Hotel

The hotel has 100 rooms, five of which are designed for wheelchair users. There are three different types of rooms. These are single, double, and twin. All rooms have a bathroom. The rooms are spread across three floors, and each has a unique three-digit number, the first digit being the number of the floor.

2.1. Rooms

Each room has an RFID lock and guests use an RFID access card to unlock the door. The hotel room cleaners, maintenance staff, managers, the owner, and the waiters (who bring room service orders to the guests' room) can use their staff cards to access all the hotel rooms. The hotel room cleaners can only access rooms on the floor they have been assigned. All the door locks keep a record of when someone unlocks or locks the door.

Each room has one or more beds, a table, a TV (equipped with Freeview), a phone, a bedside table, and a mirror. Each room has a bathroom, which includes a toilet, sink, shaver socket, mirror, and bath. On the back of the door is a floorplan of Sherbourne House, which shows the guest how to evacuate the building in an emergency.

The hotel keeps a record about each room. This includes its number (a three-digit number, where the first digit is the floor it is on), the type of room, a record of any damage and who spotted it. A cleaning rota exists which states when a hotel room is to be cleaned and by whom. Whenever a room is cleaned a record of this is made. This includes who cleaned the room and when it was cleaned.

2.2. Booking a Room

The customer can book a room either via the hotel's website, by phoning the hotel, or by sending them an E-mail. When the customer books online, they fill in a form which is E-mailed to the hotel. When booking a room the customer must include their name, address (including country) and telephone number. The customer also needs to state how many rooms they require and how long they will be staying for. If the customer is booking for multiple guests, then they need to provide their names and state if any are under 18. International customers need to provide their passport number. Customers can also make requests, for example a fridge can be provided if a guest has medication which needs to be kept in a fridge.

The customer needs to provide details of a credit or debit card. This is done over the phone for security reasons. The customer is charged for their stay as soon as they have made a booking. Their payment details will be stored on their guest record, so Sherbourne House can charge them for any damage they cause. All guests are given a unique ID.

If the customer needs to cancel or change their booking, they phone the hotel. Usually there is no charge for changes to a booking, though if a cancellation is within 24 hours of their stay, they will not get a refund.

2.3. Checking In and Out of the Hotel

Upon arrival each guest checks in with reception. Each guest will need to complete and sign a check in form. The check in form will have the guests name, room ID, check in date, expected check out date and a box for their signature. Once the check in form has been completed and signed by the guest, they will be given their room keys (a RFID card) and the password for the hotel guests WiFi network ("Hotel Guest WiFi"). If a guest is parking a car in the carpark, they need to provide its make, colour, and registration. Both the check in form and guest's car details are entered into the system.

When checking out, guests need to return their key card. The customer responsible for the booking will then receive an invoice showing all the expenses, which will be charged to their chosen payment method. Once the key card has been returned, this is logged into the system and the key card is wiped. The key card is then placed in a box, where it can be reused for another guest.

2.4. Room Service and Facilities

The hotel provides a variety of services to guests. These include room service, where a guest can phone and order food and drinks (a menu is provided in their room). Room service orders are delivered by a waiter. Room service only operates when the bar is open. Guests can also phone reception and request a wakeup call and ask that a newspaper be delivered to their room. The hotel also offers a laundry service, which is operated by the hotel cleaning staff.

The hotel has a WiFi network for hotel guests (Hotel Guest WiFi). Once guests have checked in, they are given the password for this network.

3. Restaurant and Bar

The hotel has a restaurant and bar which serve both drinks and food. Both are open to guests of the hotel and the public. Hotel guests can charge any food and drinks to the account of the guest who is paying for the booking. When they do this, they tell the waiter or bar staff their room number. Members of the public must pay when they order. They can pay using cash, a credit card, or a debit card. Both the bar and restaurant have menus showing what food and drink is available and customers can fill out a feedback form.

Hotel guests can book a table in the restaurant from reception or by calling reception. Members of the public can also phone and book tables, however if there is a conference or the hotel is busy, members of the public are not allowed to book tables in advance.

Both the restaurant and bar have public WiFi, which is provided by BT. Hotel guests may use the Hotel Guest WiFi network from both the restaurant and bar.

4. Conference Centre

Conferences are a major source of income for Sherbourne House, with many occurring throughout the year. There are four conference rooms, three capable of holding 50 people, with a fourth capable of holding 100. Sometimes organisations may use multiple rooms.

Conference rooms are usually be booked via a company or organisation. The booking will include the name and contact details of everyone who is attending. There will also be a designated person (known as the conference organiser) who is responsible for the conference and paying for it. Sherbourne House offers catering for the conferences. Some conference organisers will allow conference attendees to charge food and drink from both the bar and restaurant to the organisation running the conference. To do this, the attendee just tells the appropriate member which conference they are attending. Many conference organisers will also book hotel rooms and tables in the restaurant. These costs are included with the costs of the conference and a single invoice is created, once the conference has ended.

Due to COVID-19 and the increase in conferences being held virtually, Sherbourne House has started offering wedding and civil partnership packages and are in the process of registering Sherbourne House as an approved premises for conducting marriages and civil partnerships. Sherbourne House have started marketing some packages, using the architecture of Sherbourne House as a selling point.

Each conference room has a projector (and projector screen), seats and tables which the conference organisers can arrange as appropriate. There is a computer connected to the projector, allowing presenters to either access resources from the Internet or load files from a USB pen drive. The computer is connected to Sherbourne House's wired network, to provide Internet access. The computer has a user account for presenters. The username and password are E-mailed to the conference organiser once their booking has been confirmed. Presenters can also bring their own laptop and connect it to the projector and Sherbourne House's network either via the WiFi or wired network. A WiFi network has been set up for conference guests ("Conference WiFi") and the password is E-mailed to the customer once they have made their booking.

Each conference is allocated a number of conference staff who assist with for setting up conferences and providing support to customers. They also help conference members check in upon their arrival. A member of the conference staff will be allocated as a point of contact for the conference guests. The number of staff allocated will vary depending on how many people are attending the conference.

5. Website

Sherbourne House has a website, which was created by Driscoll Webhosting Ltd, who also host and maintain the site.

The website is on a shared server, which runs Linux (CentOS 7) and cPanel. The webserver used is Apache 2.4.41. In 2000, a Yahoo E-mail account was set up. However, after information about the 2013 and 2014 Yahoo data breaches became public, Driscoll Webhosting took responsibility for Sherbourne House's E-mail accounts. The IT manager asked that the same password be used. All members of staff have their own E-mail accounts. The website was created using a mixture of PHP (7.4), JavaScript and HTML 5. When the website's content needs to be updates, the IT Manager E-mails the webhosting company with instructions of what to update.

The main purpose of the website is to attract customers. The site contains information about the hotel rooms, the conference centre and the restaurant and bar. This includes prices and menus for the bar and restaurant. Multiple photos are on the website showing the hotel rooms, the conference rooms and parts of Sherbourne House members of the public have access to.

The website has an "About Us" section, which contains a history of Sherbourne House along with a section which shows information about all the members of staff. This includes a photo, their name, where they are from, their job and a paragraph written by the staff members where they discuss their interests and background. Some members of staff have requested that their information is not placed onto the website and permission from staff members is sought before their information is placed on the website. Members of staff can request that their information is removed from the website at any time.

The website has a contact form allowing visitors to make enquires or book one or more rooms, conference rooms or tables at the restaurant. The visitor is asked to provide an E-mail address and phone number, along with their name. The completed form is E-mailed to Sherbourne House, and a receptionist will contact the visitor, either via E-mail or a phone call. A phone number is also provided on the contact form which members of the public can call if they have any enquiries or wish to make a booking. Sherbourne House's E-mail address, physical address and phone number appear as text at the bottom of the website (visible from every page).

6. Technical Issues

6.1. Network

Sherbourne House has a wired network, which has been in place since 2000. Every staff computer is connected to this network. Receptionists share two computers, and each manager has their own, as does the owner. Each department has a staff computer which is shared by members of staff within that department. The bar and restaurant have four point of sale terminals, which are also connected to the wired network.

The staff computers run Windows 10. There is a single server which runs Windows Server 2012 R2. All the staff computers have a copy of Microsoft Office. The hotel and conference system uses a custom-built piece of software for bookings and running the hotel and conference centre. It is built using asp.net and runs on IIS 8.5. All data is stored in a MySQL 7 database. All members of staff can access it via a web browser (Microsoft Edge) on the staff computers. Each member of staff has unique user credentials. Their username is their staff ID, and they are allowed to pick their own password. All files are stored on the server and are backed up daily to a cloud server located in the USA.

Two Wi-Fi networks have been installed, to allow hotel and conference guests to access the Internet. One is known as “Hotel Guest WiFi”, whilst the second is known as “Conference WiFi.” These connect directly to the wired network and are encrypted using WPA. The passwords are given to hotel guests when they check in and conference guests once the booking has been made. Table 6-1 shows the passwords used by the wireless networks. The restaurant and bar have a public WiFi network which is maintained by BT.

Network	Password
Hotel Guest WiFi	Sherbourne_Hotel_1787
Conference Wifi	Sherbourne_Conference_1787

Table 6-1 - Passwords for the wireless networks

All hotel rooms have an ethernet port allowing guests to connect to the hotel network so they can access the Internet. Alex is concerned this poses a security risk. However, the IT manager has told her to not worry about it “as most guests use WiFi these days”.

The hotel is testing out a new WiFi network for members of staff, this uses WPA-Enterprise. This network requires each member of staff to login with user credentials. They can connect to this with Android tablets running Android O/S 11. These are provided by Sherbourne House so they can access the system from anywhere in the hotel and conference centre and members of staff no longer need to share computers.

6.2. Access Control

Every door at Sherbourne House has an RFID lock. Each member of staff and guest is provided with a key card, which determines where they have access to. The cards use MiFare Classic 1K, which operate on 13.56MHz. The access control system is provided by Salto and a computer in reception is used to maintain and operate the access control system, including creating new cards, deactivating cards, and reprogramming existing cards.

The staff cards contain the staff members ID number, date the card was activated and their name. The guests key cards contain the number of the room the card is for (each card can only access a single hotel room) and a date the card will no longer operate. When the guest checks in, a card is programmed, and the date is set to when they will checkout. Staff cards have the staff members photo, name and job role printed on. The guests key cards have company logo printed on them. Staff cards are disposed of when they leave, and guests cards are reused.

6.3. CCTV

Sherbourne House has a CCTV system. Cameras are located in every room, excluding hotel rooms as well as outside the building. The external cameras are connected to the hotels staff WiFi network. A server is set up in the Hotel Manager's office. which stores all footage from the cameras for one month. Several monitors have also been set up, allowing the Hotel Manager to observe the cameras.