Case Study 1

1. A software house has developed a customized order processing system for a client. You are an employee of the software house that has been asked to organize a training course for the end-users of the system. At present, a user handbook has been produced, but no specific training material. A plan is now needed for the project which will set up the delivery of the training courses. The project can be assumed to have been completed when the first training course starts. Among the things that will need to be considered are the following:
   - Training materials will need to be designed and created.
   - A timetable will need to be drafted and agreed.
   - Date(s) for the course will need to be arranged.
   - The people attending the course will need to be identified and notified.
   - Rooms & computer facilities for the course will need to be provided for.

   a. Identify the main stakeholders for this project.
      • Client management – concerned that they have an effective accounting system and one aspect of this is that staff can use it effectively; also concerned about costs
      • User management – at a lower level than the above, they would share the higher management concerns, but also have operational ones such as cover in the office when staff attend training courses.
      • Users – they must feel that training is effective and relevant, concerned that it should not be inconvenient in terms of travel, timing etc.
      • Trainers – that appropriate training materials are produced that will meet the expectations of users etc.
      • Technical support – that a version of the new software is set up in a training environment suitable for use on the courses on time

   b. Draw up a statement of the objective(s) for this project.
      Objectives goes something along these lines:
      “To have in place by (dd/mm/yyyy) all the materials and arrangements needed to enable the delivery of the training courses relating to the user of the accounting package ABC at organization XYZ within the budget specified”. Note that the actual delivery of the material and training of staff is just outside the boundary of the ‘project’.

   c. For the objective(s), identify the measures of effectiveness.
      A checklist that can be used on dd/mm/yyyy that the necessary arrangements are in place, ex:

• Rooms and equipment booked.
• Delegates notified.
• Training materials prepared.

d. For each objective, identify relevant sub-objectives or goals and who would be responsible for each of them.
The checklist mentioned above could also be used to identify goals, e.g.
• Rooms booked – training administrator, premises manager.
• Dates/times of course notified to selected delegates: training admins.
• Training materials prepared: trainer.
• Catering booked: training administrator, catering manager.
• Installed software: technicians.
• Training materials copied: reprographics.

2. Most of the time, the need for defining what is to be learned from a prototype and the way that it will be evaluated to obtain the new knowledge are strongly required. Outline the learning outcomes and evaluation for the following:
   a. A final year degree student is to build an application that will act as a "suggestions box" in a factory. The application will allow employees to make suggestions about process improvements and will track the subsequent progress of the suggestion as it is evaluated. The student wants to use a web-based front-end with a conventional database. The student has not previously developed any applications using this mix of technologies.

      (1) It should also examine how well such a configuration works in a real operational environment.
      (2) Further questions relate to what would be an effective and easy-to-use web interface for use in a factory environment.
      (3) The application could be implemented in one factory first for a trial period to see if employees were willing to participate in the scheme.
      (4) The student would need to be careful in making clear what the main focus of the project was.

   b. An engineering company has to maintain a large number of different types of documents relating to current and previous projects. It has decided to evaluate the use of a computer-based document retrieval system and wishes to try it out on a trial basis.
      (1) Does the package meet its requirements?
      (2) Is it easy to use?

(3) Does it have all the functionality that they need?
(4) Is it secure?

c. A business which specializes in ‘e-solutions’ – the development of business applications that exploit the WWW has been approached by the computing school of a local university. The school is investigating setting up a special website for its former students. The website’s core will be information about job and training opportunities, and it is hoped that this will generate income through advertising. It is agreed that some kind of a pilot to evaluate the scheme is needed.

   The learning objectives here seem to relate mainly to the business case.
   (1) Would former students want to access the website?
   (2) Would employers want to put job vacancies on the site?
   (3) Would they be willing to pay to do so?
   If you wanted to use a physical prototype you would have to get the system up and running and to have it well-publicized.Preliminary surveys of former students and of employers might be a cheaper and safer way of getting the information you need.

3. Select the most suitable lifecycle models for the scenarios below:
   a. Developing an updated version of a factory operating system. The project includes the addition of 24 new functions, bug fixes, and enhanced UI. It is required to have at least 14 of the new functions ready for operation within 2 to 3 months, while the rest of the functions can be added in the next 4 months through one or two updates. Budget is reserved for the project up front and there is a chance for a good bonus if the whole project was delivered within 3 months. You are responsible for hiring the staff and determining their level of experience.

      The most suitable life cycle model for the scenario is the incremental model. The company already has a working factory operating system and is incrementally building on the full product through each new update. Updates are planned and functionality to be added is known, thus requirements are known and consistent. It is possible for the new functions, bug fixes and UI enhancements to be allocated to different teams working in parallel. An advantage of the incremental model is that increments can be delivered in short periods of time, allowing the company to release updates within 2-4 months. The duration of the development cycle can be reduced with this model, allowing the product to

be released quicker, in response achieving the bonus of delivering all features within 3 months. A spiral model could also be applied for this scenario however due to relatively low risk of the scenario, an incremental model is better suited.

b. A new technology has been recently introduced for wireless transmissions. An electronic company (medium-sized) wants to design a new product that uses this technology and be the first one to do so. The company has previous experience in wireless communications, but this is the first time it tries an extremely new technology. Engineering teams will be assembled from the current staff, with a possibility of hiring up to 4 field-specific specialists. Training/education on the new technology will be provided by the designer of the new technology for 10 days. The company wants to show either a working product (with basic functionality) or a proof-of-concept prototype in an upcoming conference four months from now.

   The most suitable life cycle model for the scenario is the spiral model. Given that the project is in an extremely new technology and the staff requires training on the subject, the scenario is very high risk. The spiral model is iterative and it produces working prototypes, which can be presented in the upcoming conference in 4 months. The engineering team responsible for the product is new and have not worked with one another and will likely need to produce several prototypes. The rapid prototyping model could be used, but there are lots of unknown requirements for the given scenario. An incremental model could be used, but it requires that there be a working product at the end of each increment, which likely isn't possible for this scenario.

c. A company wants to create a modern version of its current sales system. No new functions are required except for allowing the addition of different discount schemes in the future. You, as the supplier, are required to provide one or two prototypes during your development of the software. However, it is all up to when the client company hires an experienced evaluator. The emphasis is on verifying the current functions of the software are successfully transferred to the new software.

   The most suitable life cycle model for the scenario is the v-shaped model because the project is relatively simple. The requirements for the scenario

are well known and only 1 new function is required. This model emphasizes planning for verification and validation, and the scenario emphasizes verifying the current functions of the software in the new system. Given the need to provide one or two prototypes, the sawtooth or sharktooth variations of the v-shaped model are applicable. These variations allow you to check with the client's experienced evaluator to approve the prototypes.

d. A software project where the client demands his continuous involvement in the project, as they have some experience and want to add to it for future collaborations.

   The most suitable life cycle model for the scenario is the evolutionary rapid prototyping. The rapid prototyping model allows the client to see the system requirements as they are being gathered by the project team, and they can interact with the system in the early stages. The model also allows for less confusion or miscommunication in the system requirements, leading to a more accurate end product. The client has experience in the field and can add meaningful insight during the project stages. The spiral model could also be applied as it allows for the customer and company to actively work together, however the scenario mentions nothing about the risk or scale of the project and the spiral model is likely not necessary.