Case study-1) Brightmouth college is a higher education institution which is used to be managed by a local government authority but has now become autonomous. Its payroll is still administered by the local authority. The authority now charges the college for this service. The college management are of the opinion that it would be cheaper to buy an "off-the-shelf" payroll package and do the payroll processing themselves. What would be the main stages of the project to convert to independent payroll processing by the college? Bearing in mind that an off-the-shelf package is to be used, how would this project differ from one where the software was to be written from scratch?

Main Stages of the Project:

1. **Project Initiation:**
   - Define the project objectives, scope, and constraints.
   - Establish a project team, including key stakeholders and subject matter experts.
   - Develop a project plan, including timelines and budgets.
2. **Requirements Gathering:**
   - Identify the specific payroll needs and requirements of the college.
   - Document existing payroll processes and systems.
   - Define the data format and information needed for payroll processing.
3. **Vendor Selection:**
   - Research and evaluate off-the-shelf payroll software packages.
   - Compare features, costs, and support options.
   - Select the most suitable software package for the college's needs.
4. **Software Acquisition:**
   - Purchase the chosen off-the-shelf payroll software.
   - Ensure proper licensing and compliance.
5. **Data Migration and Integration:**
   - Extract existing payroll data from the local government's systems.
   - Transform and migrate data into the new payroll software.
   - Integrate the payroll software with other college systems if necessary.
6. **Customization and Configuration:**
   - Configure the payroll software to meet the college's specific requirements.
   - Customize payroll calculations, tax settings, and reporting as needed.
7. **Testing and Quality Assurance:**
   - Conduct thorough testing to ensure the payroll system functions accurately.
   - Test various scenarios, including different employee types and pay structures.
   - Address and rectify any issues or bugs.
8. **Training and Documentation:**
   - Train college staff responsible for payroll processing on how to use the new software.
   - Develop comprehensive documentation for payroll procedures and software usage.
9. **Change Management:**
   - Communicate the transition to college employees.
   - Implement change management strategies to ensure a smooth transition.
10. **Parallel Run and Validation:**
    - Run parallel payroll processing with both the new system and the old system.
    - Validate the accuracy and consistency of results between the two systems.
11. **Deployment and Go-Live:**

- Schedule the go-live date for the new payroll system.
- Ensure all necessary data and configurations are in place.
- Monitor the initial payroll runs for any issues.

12. **Post-Implementation Review:**
    - Evaluate the performance of the new payroll system.
    - Address any post-implementation issues or improvements.

Differences from Custom Software Development:

The main differences in this project compared to developing software from scratch are:

1. **Vendor Selection:** Instead of designing and developing a custom payroll system, you select an off-the-shelf package. This can save time and resources.
2. **Customization:** While off-the-shelf software can be configured and customized to some extent, you may have limitations compared to building a system from scratch. Customization options depend on the chosen software package.
3. **Development Time:** Developing custom software can take a considerable amount of time, whereas implementing an off-the-shelf solution is typically quicker.
4. **Cost:** Developing custom software can be more expensive due to development and maintenance costs. Off-the-shelf software usually has a fixed price.
5. **Support and Updates:** Off-the-shelf software comes with vendor support and regular updates, reducing the burden of ongoing maintenance and development.

In summary, implementing an off-the-shelf payroll package involves a structured project management approach with a focus on customization and integration, while custom software development would require a more extensive development and testing process but offers greater flexibility in meeting specific requirements. The choice between the two approaches depends on the college's budget, timeline, and unique payroll needs.

Case study-2) Assume that a software house has been asked to carry out a feasibility study to develop the payroll package for brightmouth college. The software house plans to develop the software by customizing one of its existing products. What are the main steps through which the project manager of the organization would carry out the feasibility study?

1. **Project Initiation:**
    - Define the purpose and objectives of the feasibility study.
    - Identify the stakeholders and key team members responsible for the study.
    - Establish a timeline and budget for conducting the study.
2. **Scope Definition:**
    - Clearly define the scope of the project, including the specific requirements of Brightmouth College.
    - Document the expected deliverables, functionalities, and features of the customized payroll package.
3. **Existing Product Assessment:**
    - Evaluate the suitability of the software house's existing product for customization.
    - Assess the compatibility of the existing product with the requirements of Brightmouth College.

- Identify any gaps between the existing product's features and the college's needs.

4. **Technical Feasibility:**
   - Examine the technical aspects of customizing the existing product.
   - Assess the software architecture, scalability, and technology stack.
   - Determine if the customization can be achieved without major technical challenges.
5. **Financial Feasibility:**
   - Estimate the costs associated with customizing the existing software.
   - Consider development, licensing, integration, and maintenance costs.
   - Compare these costs to the budget allocated for the project.
6. **Operational Feasibility:**
   - Analyze how the customized payroll package will fit into the college's existing operations.
   - Assess the impact on college staff and workflow.
   - Evaluate whether the college has the necessary resources and expertise to use and maintain the customized software.
7. **Legal and Compliance Considerations:**
   - Review legal and regulatory requirements related to payroll processing, data privacy, and software licensing.
   - Ensure that the customization complies with relevant laws and regulations.
8. **Risk Assessment:**
   - Identify potential risks and challenges associated with the customization project.
   - Develop risk mitigation strategies to address these challenges.
9. **Market Research (if applicable):**
   - If the software house plans to offer the customized payroll package to other institutions, conduct market research to assess demand and competition.
10. **Alternative Solutions Analysis:**
    - Explore alternative approaches to developing the payroll package, such as building it from scratch or using different off-the-shelf solutions.
    - Compare the pros and cons of each approach.
11. **Feasibility Report:**
    - Compile all findings and analysis into a comprehensive feasibility report.
    - Present the report to the software house's management and relevant stakeholders.
12. **Decision and Recommendations:**
    - Based on the feasibility study, make a recommendation on whether to proceed with customizing the existing software product for Brightmouth College.
    - If recommended, outline the project plan, timeline, and budget.
13. **Approval:**
    - Obtain approval from the software house's management and Brightmouth College before proceeding with the project.

Once the feasibility study is complete and the project is approved, the software house can move forward with the customization and development of the payroll package, following established project management methodologies and best practices.

a) Would an operating system on a computer be an informative system or an embedded system?
b) Would the project, to implement an independent payroll system at the brightmouth college, be an objective-driven project or a product driven project?

An operating system on a computer is considered an informative system. It provides the user with information about the state of the computer and facilitates communication between software applications and the hardware components of the system

- **Informative System:** An operating system provides a user-friendly interface and manages hardware resources to enable users to run various applications and perform a wide range of tasks on a computer. It is designed to be versatile and adaptable to different user needs, making it an informative system.
- **Embedded System:** In contrast, embedded systems are specialized computer systems with dedicated functions and are often built into specific devices or equipment. They are designed to perform specific tasks and are not as versatile as general-purpose operating systems.

2. **Project for Implementing an Independent Payroll System at Brightmouth College:** Whether the project to implement an independent payroll system at Brightmouth College is objective-driven or product-driven depends on the primary focus and outcome of the project.

The project to implement an independent payroll system at Brightmouth College would be considered an objective-driven project. This is because the project has a specific goal or objective (implementing a payroll system for Brightmouth College) and the project's success will be determined based on whether that objective is met. In contrast, a product-driven project would focus on creating a specific product (e.g., developing a new software product for sale in the market) without necessarily tying it to a specific client or organization.

- **Objective-Driven Project:** If the primary focus of the project is to achieve specific objectives or goals, such as improving payroll accuracy, efficiency, or compliance, it would be considered an objective-driven project. In this case, the project's success is measured by meeting these objectives.
- **Product-Driven Project:** On the other hand, if the primary emphasis is on delivering a specific product, such as the customized payroll software itself, and the success of the project is primarily judged by the quality and functionality of the product delivered, it would be considered a product-driven project.

Given the context provided, where Brightmouth College plans to implement an independent payroll system by customizing existing software, the project may be more product-driven, with a focus on delivering a functional payroll software product tailored to the college's needs. However, it's essential to consider the specific project objectives and how success will be measured to accurately categorize it as either objective-driven or product-driven.

Case-study-04) Paul Duggan is the manager of a software development section. On Tuesday at 10.00a.m. he and his fellow section heads have a meeting with their group manager about the staffing requirements for the coming year. Paul has already drafted a document 'bidding' for staff. This is based on the work planned for his section for the next year. The document is discussed at the meeting. At 2.00 p.m. Paul has a meeting with his senior staff about an important project his section is undertaking. One of the programming staff has just had a road accident and will be in hospital for some time. It is decided that the project can be kept on schedule by transferring

another team member from less urgent work to this project. A temporary replacement is to be brought in to do the less urgent work but this may take a week or so to arrange. Paul has to phone both the human resources manager about getting a replacement and the user for whom the less urgent work is being done, explaining why it is likely to be delayed. Identify which of the eight management responsibilities listed above Paul was responding to at different points during his day.

Paul Duggan's schedule for Tuesday is as follows:

1. **10:00 a.m. - Meeting with Section Heads and Group Manager**
   - Purpose: Discuss staffing requirements for the coming year based on the work planned for his section.
   - Activity: Discuss the staffing needs outlined in the drafted document.
2. **2:00 p.m. - Meeting with Senior Staff about Important Project**
   - Purpose: Discuss an important project that his section is currently undertaking.
   - Activity: Address the issue of a team member who had a road accident and needs to be temporarily replaced.
3. **Afternoon - Handling Staffing Adjustments**
   - Action 1: Determine which team member will be transferred to the important project to keep it on schedule.
   - Action 2: Initiate the process of arranging for a temporary replacement for the less urgent work.
   - Action 3: Contact the Human Resources Manager to request a replacement for the team member who had the accident.
   - Action 4: Contact the user who requested the less urgent work, explaining the potential delay and the reason for it.

It's worth noting that Paul's day involves a mix of strategic planning (staffing requirements meeting) and tactical problem-solving (addressing the staffing issue caused by the accident). He needs to balance the needs of ongoing projects with the unforeseen circumstances arising from the accident.

1. **Planning:** Paul's initial responsibility is related to planning when he drafts a document 'bidding' for staff based on the work planned for his section for the next year.
2. **Organizing:** During the meeting with the group manager about staffing requirements, Paul is involved in organizing his team's staffing needs for the upcoming year.
3. **Directing:** In the meeting with his senior staff about the important project, Paul is directing his team's efforts to ensure the project stays on schedule despite the unexpected staff shortage.
4. **Coordinating:** Coordinating efforts to transfer another team member and arranging for a temporary replacement is another aspect of Paul's role, ensuring the smooth operation of his section despite the unforeseen circumstances.
5. **Controlling:** Throughout the day, Paul is responsible for controlling various aspects of his section, from staffing needs to project timelines, to ensure that everything is on track and within the defined parameters.
6. **Staffing:** Paul's initial meeting with the group manager is focused on staffing requirements for the coming year, and later in the day, he has to contact the human

resources manager to arrange for a temporary replacement, which is also related to staffing.

7. **Decision Making:** Paul's decision to transfer another team member to the important project and to bring in a temporary replacement is a critical decision to ensure project continuity and resource allocation.
8. **Problem Solving:** Dealing with the unexpected road accident of one of his programming staff and arranging for a replacement involves problem-solving to address the immediate challenges his section faces.

Case-Study-05) 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 and computer facilities for the course will need to be provided

(a) Identify the main stakeholders for this project.

(b) Draw up objectives for this project.

(c) For the objectives, identify the measures of effectiveness.

(d) For each objective, write down sub-objectives or goals and the stakeholders who will be respon- sible for their achievement.

(a) **Main Stakeholders for the Training Course Project:**

1. **Client:** The organization that commissioned the customized order processing system and is interested in ensuring its effective use.
2. **Software House:** The organization responsible for developing and delivering the training.
3. **End-Users:** The individuals who will use the customized order processing system.
4. **Trainers:** The individuals responsible for conducting the training sessions.
5. **Training Coordinator:** The person responsible for organizing and managing the training project.
6. **Facility Management:** Responsible for providing training rooms and computer facilities.
7. **Human Resources:** Responsible for coordinating attendance and notifying participants.

(b) **Objectives for the Training Course Project:**

1. **Objective 1:** Design and create comprehensive training materials.
2. **Objective 2:** Develop and agree upon a training course timetable.
3. **Objective 3:** Schedule training course dates.
4. **Objective 4:** Identify and notify participants for each training course.
5. **Objective 5:** Ensure availability of appropriate rooms and computer facilities for training.

(c) **Measures of Effectiveness for the Objectives:**

1. **Objective 1 (Training Materials):**
    - Measure: Completion of training materials.

- Effectiveness: High-quality training materials that cover all aspects of the customized order processing system.

2. **Objective 2 (Timetable):**
   - Measure: Timetable agreement with key stakeholders.
   - Effectiveness: A finalized timetable that accommodates the needs of both trainers and participants.
3. **Objective 3 (Course Dates):**
   - Measure: Confirmation of course dates.
   - Effectiveness: Defined dates that align with participant availability and training resources.
4. **Objective 4 (Participant Identification):**
   - Measure: Confirmation of participant lists.
   - Effectiveness: A complete and accurate list of participants who have been notified.
5. **Objective 5 (Facilities):**
   - Measure: Availability and readiness of training facilities.
   - Effectiveness: Properly equipped rooms and computer facilities that meet training requirements.

(d) **Sub-Objectives and Responsible Stakeholders:**

1. **Objective 1 (Training Materials):**
   - Sub-Objective 1: Develop training manuals.
   - Sub-Objective 2: Create multimedia presentations.
   - Responsible Stakeholder: Trainers and Instructional Design Team.
2. **Objective 2 (Timetable):**
   - Sub-Objective 1: Collaborate with trainers to determine availability.
   - Sub-Objective 2: Incorporate feedback from end-users.
   - Responsible Stakeholder: Training Coordinator.
3. **Objective 3 (Course Dates):**
   - Sub-Objective 1: Coordinate with participants to determine preferred dates.
   - Sub-Objective 2: Align dates with the availability of training facilities.
   - Responsible Stakeholder: Training Coordinator.
4. **Objective 4 (Participant Identification):**
   - Sub-Objective 1: Gather participant information from client.
   - Sub-Objective 2: Send course invitations and confirm attendance.
   - Responsible Stakeholder: Human Resources.
5. **Objective 5 (Facilities):**
   - Sub-Objective 1: Reserve appropriate rooms and computer labs.
   - Sub-Objective 2: Ensure necessary equipment and software are set up.
   - Responsible Stakeholder: Facility Management.

Each of these sub-objectives and their respective responsible stakeholders contribute to the achievement of the main project objectives.

Case-study-6)

Consider the following:

□ Producing an edition of a newspaper.

□ Putting a robot vehicle on Mars to search for life □ getting married

□ a research project for HCI

□ A SPM assignment given by the teacher

□ writing a OS for a mobile □ installing new version of MS Office

□ Investigating reasons for problems in a computer system. Which of these are real Projects?

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All of the items you listed can be considered real projects, as they involve specific tasks or objectives that require planning, resources, and effort to complete. Here's a breakdown:

1. Producing an edition of a newspaper: This is a real project that involves tasks such as gathering news stories, layout design, editing, printing, and distribution.
2. Putting a robot vehicle on Mars to search for life: This is a real project conducted by organizations like NASA. They involve extensive planning, engineering, testing, and execution.
3. Getting married: While not traditionally considered a "project" in a professional sense, planning a wedding involves many tasks, timelines, and coordination, making it similar to a project.
4. A research project for HCI (Human-Computer Interaction): This is a real project focused on studying and improving the interaction between humans and computers. It involves research methodologies, data collection, analysis, and potentially the development of new interfaces or technologies.
5. A SPM (Specific Purpose Machine) assignment given by the teacher: This refers to a specific task or project given by a teacher, often related to a specialized machine or system. It involves completing the assignment according to the provided instructions.
6. Writing an OS (Operating System) for a mobile: This is a real project that involves designing, coding, and testing an operating system tailored for mobile devices.
7. Installing a new version of MS Office: While this is a task rather than a full-fledged project, it still involves specific steps, timelines, and resources.
8. Investigating reasons for problems in a computer system: This is a real project in IT support or troubleshooting. It involves diagnosing and resolving issues within a computer system, which requires analytical skills, technical knowledge, and problem-solving abilities.

Each of these items involves some level of planning, execution, and completion, which are characteristic elements of a project.