

Represent Human Digestive System By Using RAD Business Process Models

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ABSTRACT

Through the above topic and studies, it appears that there is a novel approach to using business process models to represent the human digestive system. The proposed approach adopted, expanding the role activity diagram notation (RAD) to bridge the gap between business process models and human digestive systems, we show how to analyze, the human digestive system can be applied and evaluated on the process model, developed using the role activity diagram to activate the required quality, more clearly in the model. This gives a useful extension of modeling methods similar to RAD, in addition to providing a basis for improving the business of various commercial enterprises, according to RAD, it is clear that any business is not far from any biological system, as the first step in the project act is approval of the project, a library for example And the same is true for the digestive system and the related things between this and the progressive system and work have evolved within the commercial enterprises (Role-Activity Diagram (RAD)), The objectives required in the research have been verified as to know the similarities between commercial and vital organs, and the possibility of representing A complete vital member by RAD, and easy understanding of the mechanism necessary for business for businessmen, and the digestive system has been more accurately identified, its mechanism of action, its apparatus and its usefulness, and this is what is required to be proven in the events of this study.

Keywords: Role-activity diagram, RAD, Business process Models, Digestive system.

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INTRODUCTION

The RAD system performs the actions and interactions that form them, along with external events and the logic that defines them. It demonstrates the activity of roles in the business process and shows how to interact and cooperate in projects and businesses. The RAD model has many advantages; It is used in rapid application development, which is a kind of incremental model, and components or functions are developed in parallel as if they were small projects, so developments are limited in time, and then they are delivered and assembled into a practical prototype, and this can quickly give the customer something that he sees, uses and provides feedback On delivery and its requirements, business modeling, and the information flow between different business functions is determined, and data modeling is the one that uses information gathered from business modeling to determine the data fields required for business, and all this for the business information flow cycle to achieve some of the business objectives set by institutions and companies. The system that can be modeled with RAD can be built by highly skilled developers and designers, relying on modeling skills not applicable to cheaper projects; Because the cost of modeling and automated code generation is very high, RAD should be used when there is a need to create a system that can be modular in 2-3 months of time, it should be used if there is a large availability of designers for modeling and the budget is high enough to bear their cost along with the cost of building tools The automated code, and the complete structural plan that describes the important data and methods for obtaining it and then processing it to form the final refined model, and this stage consists of taking user notes and building the prototype using developer tools [1].

In other words, it includes re-examination and validation of the data collected in the first stage. Data set attributes are also defined and clarified at this stage, prototype and delivery optimization. It involves the actual use of

powerful automated tools to transform process models and data into the final business product. All required modifications and improvements are also made at this stage, and all interfaces between independent units developed by separate teams must be properly tested; This is because the use of robustly automated tools and subsets to facilitate testing, and an increased focus is placed on modeling organizational processes as a starting point for developing computer-based systems to support (or control), common methods of process modeling will be applied in the role activity diagram as IT systems. In the study [2], the role activity diagram was used to investigate the processes that link strategic decision-making with the provision of information systems in the insurance company, Through dynamic and continuous negotiation and communication processes rather than implementing a static strategy we found that RAD was an effective tool for mapping these processes and had some evidence that it helped members of the organization understand and verify the processes. In this study, the representation of the human digestive system will be "using RAD business process models". The research objectives will be employed to serve the purpose of and clarify how to use business process models to represent the human digestive system, define the approach used and proposed for this, and expand the codification of the role activity diagram (RAD) to fill the gap. Among the models of business processes and human digestive systems, the components and functions of the digestive system and the specialties of each function So that similarities can be identified with different businesses, and the human digestive system can be applied and evaluated on the process model, which was developed using the role activity diagram to activate the required quality, more clearly in the model, and this gives a useful extension of modeling methods similar to RAD, in addition to providing a basis for improvement. The work of various commercial enterprises, according to the RAD, and from here we find that many of the works are very

similar to the biological system, as the components of the human digestive system and the beginning of their work that are determined from the mouth is exactly like the initial beginning of the project law and approval of this business, and the library can be taken as an example of This is in providing its various services that start from receiving those who hesitate to it and providing them with various services, which can start by inquiring about a specific topic and then searching for it and reaching information containers in the library that benefit in this topic, and then providing a good service by the officials of the library and to the fullest extent here we find The service provided by the library is successful, and therefore the same can apply to the digestive system and the related things between this system and the progressive system and the evolution of work within the pain Commercial establishments (Role and Activity Diagram (RAD)), and this is what this study aims to find out the similarities between commercial and vital organs, the possibility of representing a complete vital organ by the RAD, the ease of understanding the mechanism required for business for businessmen, determining the digestive system more accurately and determining its mechanism of action and the functions of the constituent organs, which will be explained by this study [3].

The problem of the study:-

The nature of this research called for cognitive processing of the extent of the similarities between the representation of the digestive system in the Rad - Role activity diagram, and how to determine the similarities between them, in order to determine the steps and requirements necessary for this through identifying the stages of the work of the digestive system, and how to use the Rad system and modeling the process an important step Especially when business processes are complex and many actors participate in and the techniques of modeling processes based on activities that are widely used, role-oriented process models describe business processes as actors and their interactions from the perspective of the organization, from here it is possible to highlight the process of similarity and representation

between devices Digestive system for the human body and use RAD to represent business processes [4].

The purpose of this study:-

The purpose of this study is to present a technical role for the planning activity of modeling language for engineering and requirements of the human digestive system and its representation using the RAD system to represent business processes using data-based methods such as data flow diagrams to analyze the development problem of specific business systems, and to provide a process-based approach to capturing work flows and related information flows. Relevance across and application of process approaches in developing business information systems; this is the general objective of the study, which can be achieved through the following sub-goals: -

-The ability to represent the stages of development of digestive system processes with the RAD system usually used in business, and to know the similarities between commercial and biological devices.

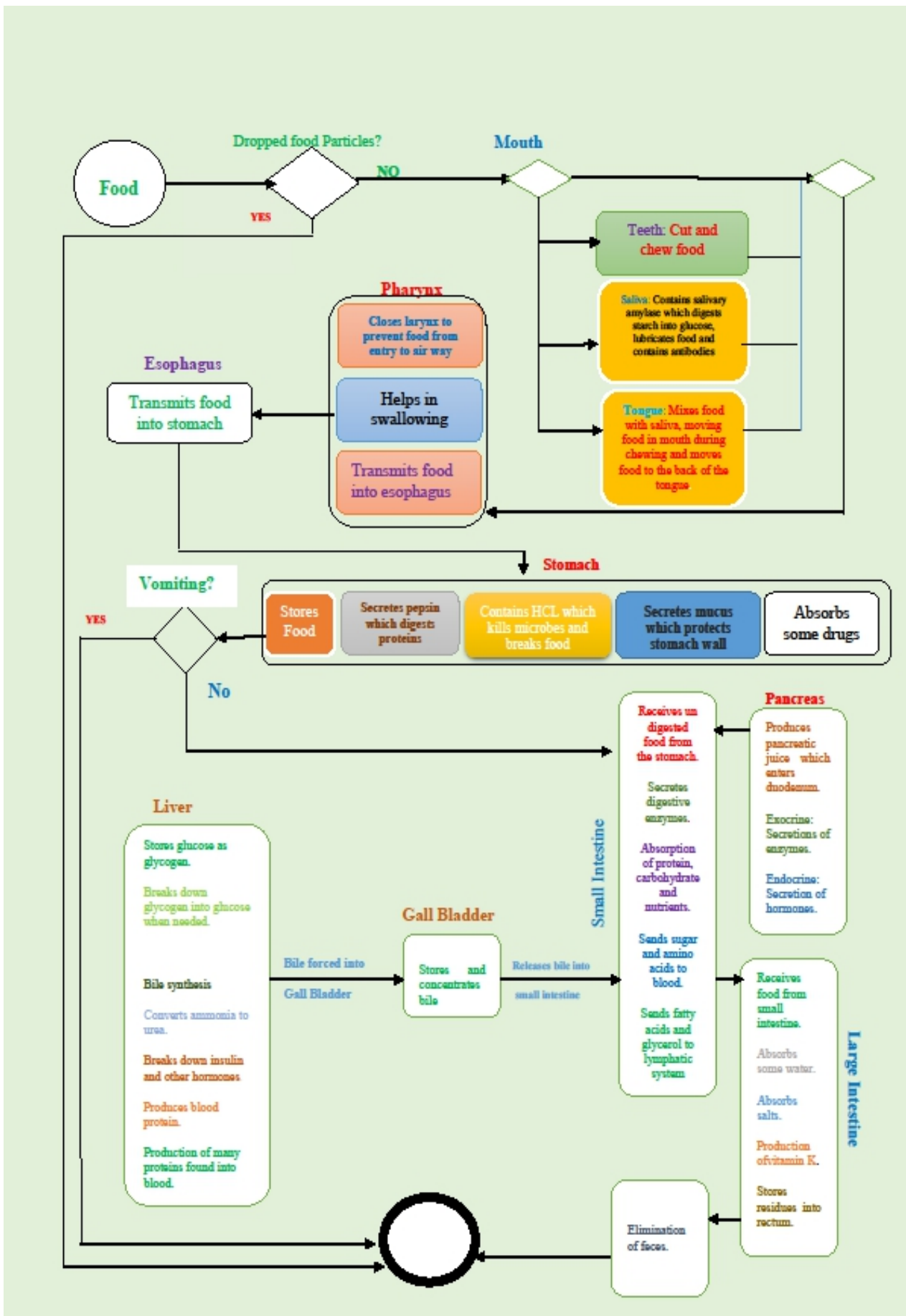
Facilitate understanding of how businessmen work.

-Knowing the digestive system with complete accuracy, its mechanism of action, its organs and its benefit.

-Using similarities in modeling business processes so that they become part of the mechanisms of successful enterprises and entrepreneurs.

Terminology of study

Role-activity diagram (RAD):- is a basic role-oriented process model, but there lacks of an objective role identification method during RAD modeling. By means of the analysis of workflow logs--workflow mining, the ratio of activities performed by actors is used to describe their work. The role is, therefore, identified by regarding actors with similar activities, who undertaking the same responsibility [5]. On the basis of role identification, network diagrams among actors are analyzed by considering activity dependence between them and their interactions are discussed, we can get role-activity diagrams Experiments show that be proposed method is viable.And the following figure illustrates- R.A.D or Role Activity Diagram



“Figure (1) shows Role-activity diagram (RAD)”

Business:- It is every activity that seeks to achieve profit and provides goods and services that satisfy the needs of consumers and achieve their satisfaction.

The startup existence:-

At the startup of any business, the basic idea of this business must be present and it is considered the cornerstone. This idea is not just something passed through some Pearson head will be achieved easy, but firstly person have to think of the chances of success and failure of this business, then how he can implement this business whether it by one person or group at the beginning, also lose calculations must be regarded, Account for a defect in this idea must be addressed or modified, And imagine how this idea will be implemented and developed, When all these ideas are completed and arranged and calculated well, the stage of actual existence begins for this business, and we begin presenting it on the ground.

Relating and comparing that to the human digestive system:-

We find that the presence of the idea corresponds to the presence of an inactive digestive system in a fetus that is still in the stages of formation, Each business mechanism corresponds to the growth or development of a specific organ within the digestive system for example, The fetus in the first month has a complete digestive system, but in an incomplete form, This corresponds to the idea of creating a business. In the second month, some of the fetus's organs begin to grow, such as the intestine, kidney and liver. Then in the third month the growth of organs such as the liver and kidneys is completed, and the fourth month in which the spleen grows is complete, and thus the presence of the inactive digestive system is completed, and these stages of development correspond to good planning for the establishment of business. Then, after a while, we begin the stage of actual existence, which is the presence of a child with an active digestive system and this corresponds to the creation of the idea of business on the ground [6].

The digestive system

It is a long, winding channel that starts with the mouth and ends with the anus, and it is the device responsible for digesting food, as it converts large complex food particles into smaller absorbable particles that can penetrate through cell membranes.

Digestive

A device of vital importance to organisms, especially the human being, as the body needs energy, energy, vitamins and minerals. In order to benefit from food, we must first break down the substances that can benefit different cells and cells in the body. This is the function of the digestive system, the digestive system works in stages until food is digested. Each stage matters and prepares food for the next, and their entire digestive system is about 20 to 30 feet long [7].

The theoretical framework of the study

Modeling complex workflows is an important problem-solving technique within healthcare settings. However, most workflow models nowadays use a simplified flow chart to flow business processes for organizations and companies as well as a group of organs in the Digestive system functionally, most of which may be within the digestive tract or as it is also known as the GI tract.

Gastrointestinal tract, which is a group of hollow organs connected with each other, which form a twisted tube that extends from the mouth to the anus, in addition to another group of organs represented by the liver, gallbladder and pancreas, and it is worth noting that the length of the digestive system varies from person to person. Its length reaches eight meters in total, as the length of the esophagus ranges between 23-25.4 cm, and the length of the small intestine reaches approximately seven meters, and the large intestine or colon is approximately one and a half meters. As for the methodology, similarity and mechanism between it the Digestive system and the Role Activity Diagram system It is a detailed representation of the process using serial interviews with people in the main roles involved in the proposed business process by modeling the roles, interactions, procedures and decisions involved in a process, a graphical representation of the final organized model of the business process, and a comparative analysis of different workflow models is performed.

Create a RAD (Role Diagram) Subject: Business Process Modeling Team Members: Margarita Lopez Lopez Claudia Hernandez Torres Juan Pablo Garcia Rivera RAD for English abbreviation or Role Activity Diagram. It consists of commercial operations of a series of distinct and concurrent activities mediated by numbers of employee "roles". It is the idea of functions and the interactions between them that form the basis for describing RAD. As a description of the world of roles to exploit the concept of simultaneous implementation of all coordination to achieve a common goal. RAD is the diagram of the interaction of activities between various roles. RADs provide information from perspectives, function, and system. Presentation competition Example of attempting to provide evidence eg. limiting re-uploads, clarifying roles and responsibilities [8].

RAD development method: defining the roles involved in the process, defining the activities performed by each role and of a type (internal, interactions or external events), defining the activity (simultaneous, conditions, episodes). Determine how to deal with each other, Example process: software update, Given beginning with the programmer who interacts with the user to find out his needs at the application level, then the programmer reviews the version in addition to new components, copying all, the data moves to re-engineering the program as an update, Based on data collection, programmer interacts with computers for development and pre-stage, software is installed if programmer is notified to re-engineering, The user programmer interacts with the user to define needs at the application level. The computer checks the current software version and starts software reengineering. Previous step: RAD is a very useful tool in explaining roles and roles in the process of obtaining specific examples of roles or roles of each department, Create a RAD

Role Activity Diagram

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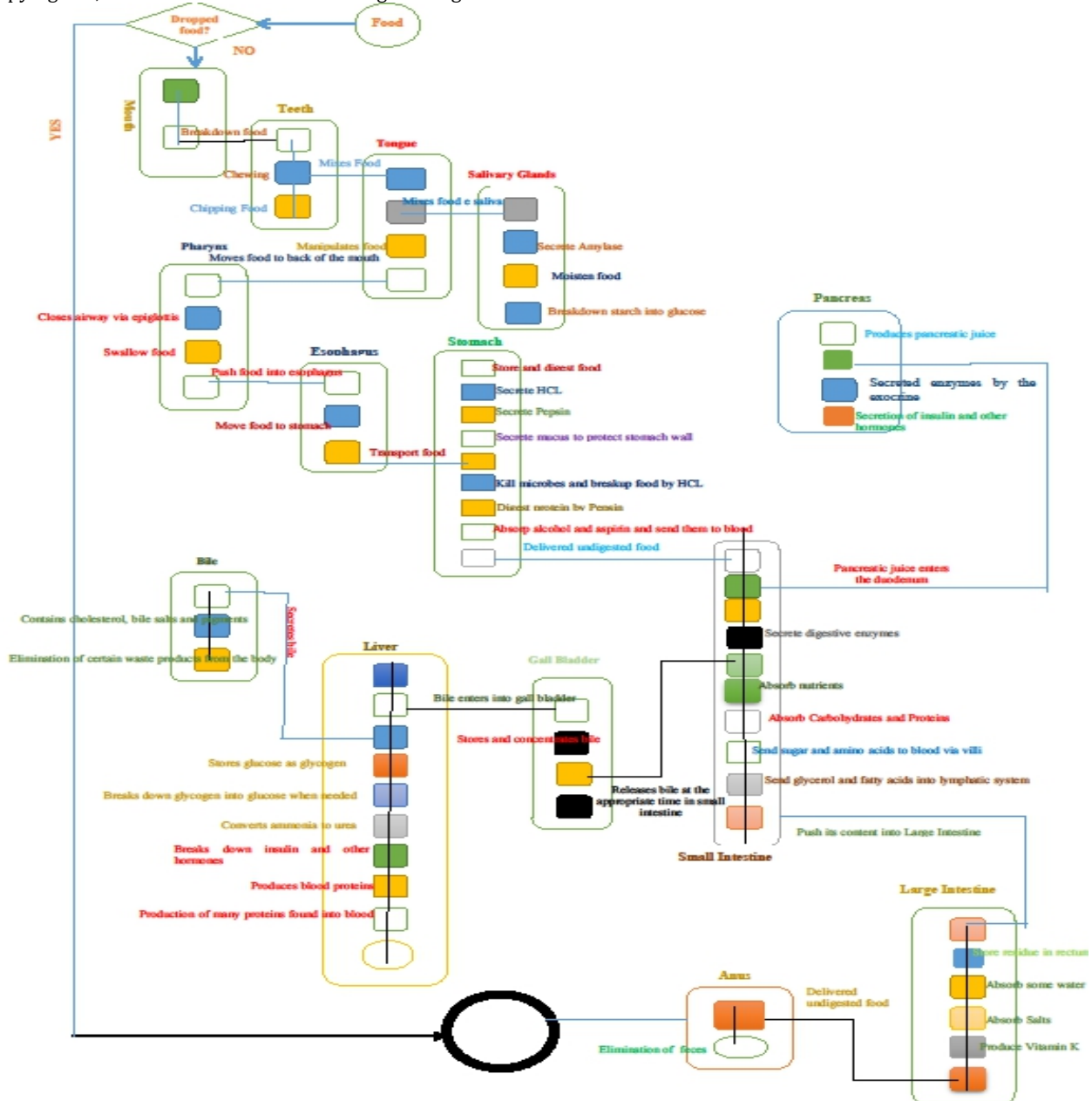


Figure (2), The R.A.D or Role Activity Diagram

From what has been extrapolated from the previous figure, it is clear to us that It is essential to know the functions and processes of the digestive system in order to be able to identify similarities between it and the "Role Activity Diagram" of a business.

Digestive organs

The primary function of the digestive system is to extract the necessary energy for the body from food, and to convert unused food residues into waste to be disposed of outside the digestive tract and the body, so the digestive system members have a unique shape and

structure that help them accomplish this task accurately, And the function of each.

The mouth: the first part of the digestive tract and the digestion process begins from the entry of food into it, as the process of chewing is carried out to cut food into small parts to facilitate its digestion, and the food moves into the esophagus through a group of muscle contractions known as peristalsis.

Pharynx: The digestive process begins automatically, as the brain sends signals to the muscles in the pharynx in order to contract and reach the stomach.

The stomach: in it the process of mechanical and chemical digestion begins by mixing food with various digestive enzymes, and a compound of hydrochloric acid or hydrochloric acid.

The small intestine: It is considered the most important organ of the digestive system, as 90% of the various parts of the food are digested, and it is a thin and long tube estimated at 6.7 meters in length, and it consists of three main parts, which are the duodenum or duodenum, and the jejunum. Jejunum and ileum (Ileum), and the movement of food in the small intestine depends on worm movement as well, and most of the processes of digesting and breaking down food in the intestine occur in the duodenum region, which is the area in which the secretion of pancreatic digestive enzymes and bile [9][10].

Large intestine: The large intestine is divided into the caecum, which is connected to the appendix, the ascending colon, the transverse colon, and the descending colon, and part of the elements is absorbed in the large intestine Remaining food and water from food to turn from a liquid state to a solid state again, with the formation of stool, which in turn contains mainly remnants of food and bacteria, and then the stool is stored in the area known as the sigmoid colon before moving to the rectum and anus to be Throwing it out of the body.

The rectum: the rectum is approximately 20 cm long and is located at the end of the colon, as it connects between the large intestine and the anus, and is responsible for sending nerve signals to the brain to alert the stool or gases to the rectum.

The anus: it is the last part of the digestive tract, and from it the stool is thrown out of the body, and the anus is made up of the pelvic floor muscles, the internal sphincter muscle, and the external sphincter, which works in coordination with each other to prevent the stool from coming out unless Voluntary control of the bowel movement, and the upper part of the lining of the anus contains sensitive receptors that reveal the nature of the feces present in the sphincter muscle, whether it is of an invasive, liquid, or solid nature [11].

Liver: The liver purifies the blood coming from the small intestine before moving to other parts of the body, and it removes toxins and harmful chemical elements, in addition to the production of many important chemical elements to the body, and the production of bile that is stored in the gallbladder before being excreted in Intestine.

The gallbladder: stores the bile that is produced in the liver and increases its concentration before excreting it to the duodenum area of the intestine, which in turn facilitates the digestion and absorption of fats.

Pancreas: Many important enzymes are produced in the pancreas that help digest fats, proteins, carbohydrates or sugars, as these enzymes are secreted in the duodenum region of the small intestine, and insulin is produced from the pancreas into the bloodstream, which is the main hormone Responsible for metabolizing sugar and utilizing it in the bod [12].

The relationship between the human digestive system and the similarity between them

After completing business idea and studying it from all aspects and applied as a realistic project, This project is limited and small and needed a great effort from persons who work, for example If someone decides to establish a restaurant or company to market food products or school tools, first he needs to provide a place to create the company , then provide a staff to work, and surly The main factor is money, also needs a lot of Marketing and advertising, and needs to Bear the complete loss and compensate for it, Will be Relating and comparing that to the human digestive system. When the digestive system begins to work, it is being small and weak and its work is limited, and its ability to bear the different food is weak in the beginning Therefore, the digestive system needs breast milk only in the first six months to overcome this weakness by a certain rate, and This corresponds to the limited dealings for new companies, And the digestive system needs care at that to enhance its strength, which corresponds to providing the requirements of the company and making an effort to achieve progress, It also needs care to avoid diseases that weaken the digestive system over a long time, and is corresponding to the loss in business [9].

The maturity and evolution step

After going through the stage of completing the idea on the ground with its details, comes the stage of evolution , in which the business develops and increases until it becomes a complete enterprise, this stage is based on increasing the effort and the number of people involved in the business, For example, companies that distribute imported products from abroad in the stage of evolution are seeking to increase the field of sales and strengthen relations between consumers, whether locally or internationally.

Relating and comparing that to the human digestive system

Develop its ability to grow and this is a food factor, and its ability to absorb and analyze and receive all kinds of different foods almost Interconnection between the members of the company and the members of the digestive system.

Members of company

First, any company is on the principle of coordination and collective action, and a company cannot be managed by one person and it is difficult to give up a certain part of the company but not in the impossible, As in the digestive system, it works interconnected and harmonious and hard to give up part of it but not impossible.

Chief executive officer (CEO)

He is responsible for managing the company and heads the Board of Directors and all the heated hosts are available to him.

Chief financial officer (CFO)

His responsibility to oversee the financial activities of the entire company and include signing checks, monitoring cash flow and financial planning.

Chief operation officer (COO)

His responsibility is to ensure that trade operations are competent, effective and proper administration of resources and the determination of the demand for goods and services and submit a daily report on the CEO [11].

Chief marketing officer (CMO)

His administration is responsible for the trademark and multiple marketing methods such as ads and promotional offers and public relations

Chief technical officer (CTO)

His responsibility technical and technological issues for the company

Vice president

He has the same hopes of the Chief Executive Officer, but the president alone can implement plans related to business. There are internal problems facing many companies and institutions. In some cases, companies face internal problems due to the failure of some employees to work, and the failure to implement the required orders, not only the employees, as well as the heads of departments and the CEO, each problem differs. The reason for this varies, so the failure of an employee in a particular department differs from the failure of the head of this department, and the failure of a particular department head is different from the failure of the CEO, so the more responsibility is on, the more his faults are a bigger problem. This corresponds to a defect in a specific organ in the digestive system, and the more important the organ, the more difficult the problem and treatment [9].

There are also external problems that may be caused by an external influence, for example when companies compete in the same field of work, the company may cheat or create problems for another company, and this corresponds to external microbes and viruses that parasit and infect the digestive system. The second step is preparing all tools leading to make success of the project easier, like preparing the library of all books it needs, and the same for the digestive system as the teeth do this role by melling the food

The third step is choosing the method of management , like choosing the way of books classification in library , for the digestive system the same occurs as the food passes through the tounge to be classified in food different kinds to identify what can be got from it . he fourth step is distributing roles , like identifying who is the manger in a library and what role and identifying other roles , the same for digestive system as the stomach represent the manager , and the other organs represent the assistants The fifth step is the production and benefits, as in a library it starts to get the client attention then starts to borrow and buy books, the same for digestive system after the food gets the stomach which does its job on it after a while, and the body starts to get benefits. The sixth step is looking to how many targets are

achieved after that, in the library perhaps the sales volume not as the owner expect, so other plans must be made or need for more advertising, the same happen in the stomach, as after the stomach role passed, some kinds of food can't be digested then the stomach passes them to the other organs [10].

The seventh step is trying the new plans, like trying new advertising styles in the library or adding more books according to the client requirements, the same in the digestive system new digest styles are tries in other organs.

CONCLUSION

Through what was presented and studied in this research, it became clear to us that there is a similarity between vital organs and business devices that can facilitate businessmen to understand the mechanism of work and how they can easily develop their business and how they can solve the problems they face, and then it was necessary to know the functions and processes of the digestive system In order to be able to identify the similarities between it and the "role activity diagram" of the company or institution, and since there are similarities and interconnections between many things around us, it is first necessary for the development of business to be linked in an abstract image of a system in the human body, the organs of the human body systems begin From the very beginning of human formation, which is the parallels of business; As the first idea of work these devices start working after the completion of the formation, which is parallel to the implementation of the idea, then these members begin to different stages of maturity, which helps them to bear a lot, and this is exactly the same with the beginning of establishing projects and small companies that start to grow and expand over time, Also from that environment surrounding the human digestive system and diseases equals the development of business to reach a strong ideal stage in different businesses. This has been a demonstration of similarity and similarity between some businesses, the human digestive system and the related things between this and the progressive system and work evolution Within commercial enterprises Role-activity diagram -) (RAD), the objectives required in the research, which are to know the similarity between commercial and vital devices, the possibility of representing a complete vital organ by the RAD, and the ease of understanding the mechanism necessary for businessmen's business, were also verified Knowing the digestive system more precisely, its mechanism of action, its apparatus, and its usefulness, and after completing the idea on the ground with its details, the stage of work development comes and it increases until it becomes a project As a whole, and this stage is based on increasing the effort and the number of people involved in the field of various businesses, companies that distribute imported products from abroad in the development stage may seek to increase sales and strengthen relationships between consumers, whether locally or internationally.

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