Exploratory Search:
Beyond the Query-Response Paradigm

Ryen W. White
Resa A. Roth

スライド：山本岳洋 (京都大学)

0

Exploratory Search Beyond The Query Response Paradigm Resa Roth

Marcel A. Müller

Exploratory Search Beyond The Query Response Paradigm Resa Roth:

Exploratory Search Ryen White,Resa Roth,2009-03-01 As information becomes more ubiquitous and the demands that searchers have on search systems grow there is a need to support search behaviors beyond simple lookup Information seeking is the process or activity of attempting to obtain information in both human and technological contexts Exploratory search describes an information seeking problem context that is open ended persistent and multifaceted and information seeking processes that are opportunistic iterative and multitactical Exploratory searchers aim to solve complex problems and develop enhanced mental capacities Exploratory search systems support this through symbiotic human machine relationships that provide guidance in exploring unfamiliar information landscapes Exploratory search has gained prominence in recent years There is an increased interest from the information retrieval information science and human computer interaction communities in moving beyond the traditional turn taking interaction model supported by major Web search engines and toward support for human intelligence amplification and information use In this lecture we introduce exploratory search relate it to relevant extant research outline the features of exploratory search systems discuss the evaluation of these systems and suggest some future directions for supporting exploratory search Exploratory search is a new frontier in the search domain and is becoming increasingly important in shaping our future world Table of Contents Introduction Defining Exploratory Search Related Work Features of Exploratory Search Systems Evaluation of Exploratory Search Systems Future Directions and concluding Remarks **Exploratory Search** Ryen W. White,Resa A. Roth,2009 As information becomes more ubiquitous and the demands that searchers have on search systems grow there is a need to support search behaviors beyond simple lookup Information seeking is the process or activity of attempting to obtain information in both human and technological contexts Exploratory search describes an information seeking problem context that is open ended persistent and multifaceted and information seeking processes that are opportunistic iterative and multitactical Exploratory searchers aim to solve complex problems and develop enhanced mental capacities Exploratory search systems support this through symbiotic human machine relationships that provide guidance in exploring unfamiliar information landscapes Exploratory search has gained prominence in recent years There is an increased interest from the information retrieval information science and human computer interaction communities in moving beyond the traditional turn taking interaction model supported by major Web search engines and toward support for human intelligence amplification and information use In this lecture we introduce exploratory search relate it to relevant extant research outline the features of exploratory search systems discuss the evaluation of these systems and suggest some future directions for supporting exploratory search Exploratory search is a new frontier in the search domain and is becoming increasingly important in shaping our future world Table of Contents Introduction Defining Exploratory Search Related Work Features of Exploratory Search Systems Evaluation of Exploratory Search Systems Future Directions and concluding Remarks *Exploratory Search* Ryen

White,Resa Roth,2022-06-01 As information becomes more ubiquitous and the demands that searchers have on search systems grow there is a need to support search behaviors beyond simple lookup Information seeking is the process or activity of attempting to obtain information in both human and technological contexts Exploratory search describes an information seeking problem context that is open ended persistent and multifaceted and information seeking processes that are opportunistic iterative and multitactical Exploratory searchers aim to solve complex problems and develop enhanced mental capacities Exploratory search systems support this through symbiotic human machine relationships that provide guidance in exploring unfamiliar information landscapes Exploratory search has gained prominence in recent years There is an increased interest from the information retrieval information science and human computer interaction communities in moving beyond the traditional turn taking interaction model supported by major Web search engines and toward support for human intelligence amplification and information use In this lecture we introduce exploratory search relate it to relevant extant research outline the features of exploratory search systems discuss the evaluation of these systems and suggest some future directions for supporting exploratory search Exploratory search is a new frontier in the search domain and is becoming increasingly important in shaping our future world Table of Contents Introduction Defining Exploratory Search Related Work Features of Exploratory Search Systems Evaluation of Exploratory Search Systems Future Directions and concluding Remarks **Incidental Exposure to Online News** Borchuluun Yadamsuren,Sanda Erdelez,2016-12-07 Rapid technological changes and availability of news anywhere and at any moment have changed how people seek out news Increasingly consumers no longer take deliberate actions to read the news instead stumbling upon news online While the emergence of serendipitous news discovery online has been recognized in the literature there is a limited understanding about how people experience this behavior Based on the mixed method study that investigated online news reading behavior of residents in a Midwestern U S town we explore how people accidentally discover news when engaged in various online activities Employing the grounded theory approach we define Incidental Exposure to Online News IEON as individual s memorable experiences of chance encounters with interesting useful or surprising news while using the Internet for news browsing or for non news related online activities such as checking email or visiting social networking sites The book presents a conceptual framework of IEON that advances research and an understanding of serendipitous news discovery from people s holistic experiences of news consumption in their everyday lives The proposed IEON Process Model identifies key steps in an IEON experience that could help news reporters and developers of online news platforms create innovative storytelling and design strategies to catch consumers attention during their online activities Finally this book raises important methodological questions for further investigation how should serendipitous news discovery be studied measured and observed and what are the essential elements that differentiate this behavior from other types of online news consumption and information behaviors *Understanding User-Web Interactions via Web Analytics* Bernard J. Jansen,2022-06-01 This lecture presents an overview

of the Web analytics process with a focus on providing insight and actionable outcomes from collecting and analyzing Internet data The lecture first provides an overview of Web analytics providing in essence a condensed version of the entire lecture The lecture then outlines the theoretical and methodological foundations of Web analytics in order to make obvious the strengths and shortcomings of Web analytics as an approach These foundational elements include the psychological basis in behaviorism and methodological underpinning of trace data as an empirical method These foundational elements are illuminated further through a brief history of Web analytics from the original transaction log studies in the 1960s through the information science investigations of library systems to the focus on Websites systems and applications Following a discussion of on going interaction data within the clickstream created using log files and page tagging for analytics of Website and search logs the lecture then presents a Web analytic process to convert these basic data to meaningful key performance indicators in order to measure likely converts that are tailored to the organizational goals or potential opportunities Supplementary data collection techniques are addressed including surveys and laboratory studies The overall goal of this lecture is to provide implementable information and a methodology for understanding Web analytics in order to improve Web systems increase customer satisfaction and target revenue through effective analysis of user Website interactions Table of Contents Understanding Web Analytics The Foundations of Web Analytics Theory and Methods The History of Web Analytics Data Collection for Web Analytics Web Analytics Fundamentals Web Analytics Strategy Web Analytics as Competitive Intelligence Supplementary Methods for Augmenting Web Analytics Search Log Analytics Conclusion Key Terms Blogs for Further Reading References **Knowledge Management Processes in Organizations** Claire McInerney,Michael E.D. Koenig,2011-02-02 Knowledge Management KM is an effort to increase useful knowledge in the organization It is a natural outgrowth of late twentieth century movements to make organizational management and operations more effective of higher quality and more responsive to constituents in a rapidly changing global environment This document traces the evolution of KM in organizations summarizing the most influential research and literature in the field It also presents an overview of selected common and current practices in knowledge management including the relationship between knowledge management and decision making with the intention of making a case for KM as a series of processes and not necessarily a manipulation of things The final section highlights the use of social networking and commonly adopted Web applications to increase the value of social capital and to connect practitioners with clients and colleagues Table of Contents Introduction Background Bibliographic Analysis Theorizing Knowledge in Organizations Conceptualizing Knowledge Emergence Knowledge Acts Knowledge Management in Practice Knowledge Management Issues Knowledge Management and Decision Making Social Network Analysis and KM Implications for the Future Conclusion *Dynamic Information Retrieval Modeling* Grace Hui Yang,Marc Sloan,Jun Wang,2022-05-31 Big data and human computer information retrieval HCIR are changing IR They capture the dynamic changes in the data and dynamic

interactions of users with IR systems A dynamic system is one which changes or adapts over time or a sequence of events Many modern IR systems and data exhibit these characteristics which are largely ignored by conventional techniques What is missing is an ability for the model to change over time and be responsive to stimulus Documents relevance users and tasks all exhibit dynamic behavior that is captured in data sets typically collected over long time spans and models need to respond to these changes Additionally the size of modern datasets enforces limits on the amount of learning a system can achieve Further to this advances in IR interface personalization and ad display demand models that can react to users in real time and in an intelligent contextual way In this book we provide a comprehensive and up to date introduction to Dynamic Information Retrieval Modeling the statistical modeling of IR systems that can adapt to change We define dynamics what it means within the context of IR and highlight examples of problems where dynamics play an important role We cover techniques ranging from classic relevance feedback to the latest applications of partially observable Markov decision processes POMDPs and a handful of useful algorithms and tools for solving IR problems incorporating dynamics The theoretical component is based around the Markov Decision Process MDP a mathematical framework taken from the field of Artificial Intelligence AI that enables us to construct models that change according to sequential inputs We define the framework and the algorithms commonly used to optimize over it and generalize it to the case where the inputs aren t reliable We explore the topic of reinforcement learning more broadly and introduce another tool known as a Multi Armed Bandit which is useful for cases where exploring model parameters is beneficial Following this we introduce theories and algorithms which can be used to incorporate dynamics into an IR model before presenting an array of state of the art research that already does such as in the areas of session search and online advertising Change is at the heart of modern Information Retrieval systems and this book will help equip the reader with the tools and knowledge needed to understand Dynamic Information Retrieval Modeling   *Key Issues Regarding Digital Libraries* Rao Shen,Marcos Andre Goncalves,Edward A. Fox,2013-02-01 This is the second book based on the 5S Societies Scenarios Spaces Structures Streams approach to digital libraries DLs Leveraging the first volume on Theoretical Foundations we focus on the key issues of evaluation and integration These cross cutting issues serve as a bridge for those interested in DLs connecting the introduction and formal discussion in the first book with the coverage of key technologies in the third book and of illustrative applications in the fourth book These two topics have central importance in the DL field allowing it to be treated scientifically as well as practically In the scholarly world we only really understand something if we know how to measure and evaluate it In the Internet era of distributed information systems we only can be practical at scale if we integrate across both systems and their associated content Evaluation of DLs must take place atmultiple levels so we can address the different entities and their associated measures Thus for digital objects we assess accessibility pertinence preservability relevance significance similarity and timeliness Other measures are specific to higher level constructs like metadata collections catalogs

repositories and services We tie these together through a case study of the 5SQual tool which we designed and implemented to perform an automatic quantitative evaluation of DLs Thus across the Information Life Cycle we describe metrics and software useful to assess the quality of DLs and demonstrate utility with regard to representative application areas archaeology and education Though integration has been a challenge since the earliest work on DLs we provide the first comprehensive 5S based formal description of the DL integration problem cast in the context of related work Since archaeology is a fundamentally distributed enterprise we describe ETANADL for integrating Near Eastern Archeology sites and information Thus we show how 5S based modeling can lead to integrated services and content While the first book adopts a minimalist and formal approach to DLs and provides a systematic and functional method to design and implement DL exploring services here we broaden to practical DLs with richer metamodels demonstrating the power of 5S for integration and evaluation   *Researching Serendipity in Digital Information Environments* Lori McCay-Peet,Elaine G. Toms,2022-05-31 Chance luck and good fortune are the usual go to descriptors of serendipity a phenomenon aptly often coupled with famous anecdotes of accidental discoveries in engineering and science in modern history such as penicillin Teflon and Post it notes Serendipity however is evident in many fields of research in organizations in everyday life and there is more to it than luck implies While the phenomenon is strongly associated with in person interactions with people places and things most attention of late has focused on its preservation and facilitation within digital information environments Serendipity s association with unexpected positive user experiences and outcomes has spurred an interest in understanding both how current digital information environments support serendipity and how novel approaches may be developed to facilitate it Research has sought to understand serendipity how it is manifested in people s personality traits and behaviors how it may be facilitated in digital information environments such as mobile applications and its impacts on an individual an organizational and a wider level Because serendipity is expressed and understood in different ways in different contexts multiple methods have been used to study the phenomenon and evaluate digital information environments that may support it This volume brings together different disciplinary perspectives and examines the motivations for studying serendipity the various ways in which serendipity has been approached in the research methodological approaches to build theory and how it may be facilitated Finally a roadmap for serendipity research is drawn by integrating key points from this volume to produce a framework for the examination of serendipity in digital information environments   Compatibility Modeling Xuemeng Song,Liqiang Nie,Yinglong Wang,2022-06-01 Nowadays fashion has become an essential aspect of people s daily life As each outfit usually comprises several complementary items such as a top bottom shoes and accessories a proper outfit largely relies on the harmonious matching of these items Nevertheless not everyone is good at outfit composition especially those who have a poor fashion aesthetic Fortunately in recent years the number of online fashion oriented communities like IQON and Chictopia as well as e commerce sites like Amazon and eBay has grown The tremendous amount of real world data

regarding people s various fashion behaviors has opened a door to automatic clothing matching Despite its significant value compatibility modeling for clothing matching that assesses the compatibility score for a given set of equal or more than two fashion items e g a blouse and a skirt yields tough challenges a the absence of comprehensive benchmark b comprehensive compatibility modeling with the multi modal feature variables is largely untapped c how to utilize the domain knowledge to guide the machine learning d how to enhance the interpretability of the compatibility modeling and e how to model the user factor in the personalized compatibility modeling These challenges have been largely unexplored to date In this book we shed light on several state of the art theories on compatibility modeling In particular to facilitate the research we first build three large scale benchmark datasets from different online fashion websites including IQON and Amazon We then introduce a general data driven compatibility modeling scheme based on advanced neural networks To make use of the abundant fashion domain knowledge i e clothing matching rules we next present a novel knowledge guided compatibility modeling framework Thereafter to enhance the model interpretability we put forward a prototype wise interpretable compatibility modeling approach Following that noticing the subjective aesthetics of users we extend the general compatibility modeling to the personalized version Moreover we further study the real world problem of personalized capsule wardrobe creation aiming to generate a minimum collection of garments that is both compatible and suitable for the user Finally we conclude the book and present future research directions such as the generative compatibility modeling virtual try on with arbitrary poses and clothing generation **Fuzzy Information Retrieval** Donald H. Kraft,Erin Colvin,2022-06-01 Information retrieval used to mean looking through thousands of strings of texts to find words or symbols that matched a user s query Today there are many models that help index and search more effectively so retrieval takes a lot less time Information retrieval IR is often seen as a subfield of computer science and shares some modeling applications storage applications and techniques as do other disciplines like artificial intelligence database management and parallel computing This book introduces the topic of IR and how it differs from other computer science disciplines A discussion of the history of modern IR is briefly presented and the notation of IR as used in this book is defined The complex notation of relevance is discussed Some applications of IR is noted as well since IR has many practical uses today Using information retrieval with fuzzy logic to search for software terms can help find software components and ultimately help increase the reuse of software This is just one practical application of IR that is covered in this book Some of the classical models of IR is presented as a contrast to extending the Boolean model This includes a brief mention of the source of weights for the various models In a typical retrieval environment answers are either yes or no i e on or off On the other hand fuzzy logic can bring in a degree of match vs a crisp i e strict match This too is looked at and explored in much detail showing how it can be applied to information retrieval Fuzzy logic is often times considered a soft computing application and this book explores how IR with fuzzy logic and its membership functions as weights can help indexing querying and matching Since fuzzy set theory and logic is explored in IR systems the explanation

of where the fuzz is ensues The concept of relevance feedback including pseudorelevance feedback is explored for the various models of IR For the extended Boolean model the use of genetic algorithms for relevance feedback is delved into The concept of query expansion is explored using rough set theory Various term relationships is modeled and presented and the model extended for fuzzy retrieval An example using the UMLS terms is also presented The model is also extended for term relationships beyond synonyms Finally this book looks at clustering both crisp and fuzzy to see how that can improve retrieval performance An example is presented to illustrate the concepts **Trustworthy Communications and Complete Genealogies** Reagan W. Moore,2022-06-01 Genealogies document relationships between persons involved in historical events Information about the events is parsed from communications from the past This book explores a way to organize information from multiple communications into a trustworthy representation of a genealogical history of the modern world The approach defines metrics for evaluating the consistency correctness closure connectivity completeness and coherence of a genealogy The metrics are evaluated using a 312 000 person research genealogy that explores the common ancestors of the royal families of Europe A major result is that completeness is defined by a genealogy symmetry property driven by two exponential processes the doubling of the number of potential ancestors each generation and the rapid growth of lineage coalescence when the number of potential ancestors exceeds the available population A genealogy expands from an initial root person to a large number of lineages which then coalesce into a small number of progenitors Using the research genealogy candidate progenitors for persons of Western European descent are identified A unifying ancestry is defined to which historically notable persons can be linked The Taxobook Marjorie Hlava,2014-10-01 This is the first volume in a series about creating and maintaining taxonomies and their practical applications especially in search functions In Book 1 The Taxobook History Theories and Concepts of Knowledge Organization the author introduces the very foundations of classification starting with the ancient Greek philosophers Plato and Aristotle as well as Theophrastus and the Roman Pliny the Elder They were first in a line of distinguished thinkers and philosophers to ponder the organization of the world around them and attempt to apply a structure or framework to that world The author continues by discussing the works and theories of several other philosophers from Medieval and Renaissance times including Saints Aquinas and Augustine William of Occam Andrea Cesalpino Carl Linnaeus and Ren Descartes In the 17th 18th and 19th centuries John Locke Immanuel Kant James Frederick Ferrier Charles Ammi Cutter and Melvil Dewey contributed greatly to the theories of classification systems and knowledge organization Cutter and Dewey especially created systems that are still in use today Chapter 8 covers the contributions of Shiyali Ramamrita Ranganathan who is considered by many to be the father of modern library science He created the concept of faceted vocabularies which are widely used even if they are not well understood on many e commerce websites Following the discussions and historical review the author has included a glossary that covers all three books of this series so that it can be referenced as you work your way through the second and third volumes The author believes that it is

important to understand the history of knowledge organization and the differing viewpoints of various philosophers even if that understanding is only that the differing viewpoints simply exist Knowing the differing viewpoints will help answer the fundamental questions Why do we want to build taxonomies How do we build them to serve multiple points of view Table of Contents List of Figures Preface Acknowledgments Origins of Knowledge Organization Theory Early Philosophy of Knowledge Saints and Traits Realism and Nominalism Arranging the glowers and the Birds and the Insects and Everything Else Early Naturalists and Taxonomies The Age of Enlightenment Impacts Knowledge Theory 18th Century Developments Knowledge Theory Coming to the Foreground High Resolution Classification Sharpens in the 19th and 20th Centuries Outlining the World and Its Parts Facets An Indian Mathematician and Children s Toys at Selfridge s Points of Knowledge Glossary End Notes Author Biography **Question Answering for the Curated Web** Rishiraj Saha Roy,Avishek Anand,2022-05-31 Question answering QA systems on the Web try to provide crisp answers to information needs posed in natural language replacing the traditional ranked list of documents QA posing a multitude of research challenges has emerged as one of the most actively investigated topics in information retrieval natural language processing and the artificial intelligence communities today The flip side of such diverse and active interest is that publications are highly fragmented across several venues in the above communities making it very difficult for new entrants to the field to get a good overview of the topic Through this book we make an attempt towards mitigating the above problem by providing an overview of the state of the art in question answering We cover the twin paradigms of curated Web sources used in QA tasks trusted text collections like Wikipedia and objective information distilled into large scale knowledge bases We discuss distinct methodologies that have been applied to solve the QA problem in both these paradigms using instantiations of recent systems for illustration We begin with an overview of the problem setup and evaluation cover notable sub topics like open domain multi hop and conversational QA in depth and conclude with key insights and emerging topics We believe that this resource is a valuable contribution towards a unified view on QA helping graduate students and researchers planning to work on this topic in the near future **On The Efficient Determination of Most Near Neighbors** Mark Manasse,2022-12-06 The time worn aphorism close only counts in horseshoes and hand grenades is clearly inadequate Close also counts in golf shuffleboard archery darts curling and other games of accuracy in which hitting the precise center of the target isn t to be expected every time or in which we can expect to be driven from the target by skilled opponents This lecture is not devoted to sports discussions but to efficient algorithms for determining pairs of closely related web pages and a few other situations in which we have found that inexact matching is good enough where proximity suffices We will not however attempt to be comprehensive in the investigation of probabilistic algorithms approximation algorithms or even techniques for organizing the discovery of nearest neighbors We are more concerned with finding nearby neighbors if they are not particularly close by we are not particularly interested In thinking of when approximation is sufficient remember the oft told joke about two

campers sitting around after dinner They hear noises coming towards them One of them reaches for a pair of running shoes and starts to don them The second then notes that even with running shoes they cannot hope to outrun a bear to which the first notes that most likely the bear will be satiated after catching the slower of them We seek problems in which we don t need to be faster than the bear just faster than the others fleeing the bear   **Digital Library Technologies** Edward A. Fox,Ricardo da Silva Torres,2022-06-01 Digital libraries DLs have introduced new technologies as well as leveraging enhancing and integrating related technologies since the early 1990s These efforts have been enriched through a formal approach e g the 5S Societies Scenarios Spaces Structures Streams framework which is discussed in two earlier volumes in this series This volume should help advance work not only in DLs but also in the WWW and other information systems Drawing upon four Kozievitch Murthy Park Yang completed and three Elsherbiny Farag Srinivasan in process dissertations as well as the efforts of collaborating researchers and scores of related publications presentations tutorials and reports this book should advance the DL field with regard to at least six key technologies By integrating surveys of the state of the art new research connections with formalization case studies and exercises projects this book can serve as a computing or information science textbook It can support studies in cyber security document management hypertext hypermedia IR knowledge management LIS multimedia and machine learning Chapter 1 with a case study on fingerprint collections focuses on complex composite compound objects connecting DL and related work on buckets DCC and OAI ORE Chapter 2 discussing annotations as in hypertext hypermedia emphasizes parts of documents including images as well as text managing superimposed information The SuperIDR system and prototype efforts with Flickr should motivate further development and standardization related to annotation which would benefit all DL and WWW users Chapter 3 on ontologies explains how they help with browsing query expansion focused crawling and classification This chapter connects DLs with the Semantic Web and uses CTRnet as an example Chapter 4 on hierarchical classification leverages LIS theory as well as machine learning and is important for DLs as well as the WWW Chapter 5 on extraction from text covers document segmentation as well as how to construct a database from heterogeneous collections of references from ETDs i e converting strings to canonical forms Chapter 6 surveys the security approaches used in information systems and explains how those approaches can apply to digital libraries which are not fully open Given this rich content those interested in DLs will be able to find solutions to key problems using the right technologies and methods We hope this book will help show how formal approaches can enhance the development of suitable technologies and how they can be better integrated with DLs and other information systems

    Theoretical Foundations for Digital Libraries Edward Fox,Marcos André Gonçalves,Rao Shen,2022-06-01 In 1991 a group of researchers chose the term digital libraries to describe an emerging field of research development and practice Since then Virginia Tech has had funded research in this area largely through its Digital Library Research Laboratory This book is the first in a four book series that reports our key findings and current research investigations Underlying this book series are

six completed dissertations Gon alves Kozievitch Leidig Murthy Shen Torres eight dissertations underway and many masters theses These reflect our experience with a long string of prototype or production systems developed in the lab such as CITIDEL CODER CTRnet Ensemble ETANA ETD db MARIAN and Open Digital Libraries There are hundreds of related publications presentations tutorials and reports We have built upon that work so this book and the others in the series will address digital library related needs in many computer science information science and library science e g LIS courses as well as the requirements of researchers developers and practitioners Much of the early work in the digital library field struck a balance between addressing real world needs integrating methods from related areas and advancing an ever expanding research agenda Our work has fit in with these trends but simultaneously has been driven by a desire to provide a firm conceptual and formal basis for the field Our aim has been to move from engineering to science We claim that our 5S Societies Scenarios Spaces Structures Streams framework discussed in publications dating back to at least 1998 provides a suitable basis This book introduces 5S and the key theoretical and formal aspects of the 5S framework While the 5S framework may be used to describe many types of information systems and is likely to have even broader utility and appeal we focus here on digital libraries Our view of digital libraries is broad so further generalization should be straightforward We have connected with related fields including hypertext hypermedia information storage and retrieval knowledge management machine learning multimedia personal information management and Web 2 0 Applications have included managing not only publications but also archaeological information educational resources fish images scientific datasets and scientific experiments simulations Table of Contents Introduction Exploration Mathematical Preliminaries Minimal Digital Library Archaeological Digital Libraries 5S Results Lemmas Proofs and 5SSuite Glossary Bibliography Authors Biographies Index

Multiculturalism and Information and Communication Technology Pnina Fichman,Madelyn Sanfilippo,2022-05-31 Research on multiculturalism and information and communication technology ICT has been important to understanding recent history planning for future large scale initiatives and understanding unrealized expectations for social and technological change This interdisciplinary area of research has examined interactions between ICT and culture at the group and society levels However there is debate within the literature as to the nature of the relationship between culture and technology In this synthesis we suggest that the tensions result from the competing ideologies that drive researchers allowing us to conceptualize the relationship between culture and ICT under three primary models each with its own assumptions 1 Social informatics 2 Social determinism and 3 Technological determinism Social informatics views the relationship to be one of sociotechnical interaction in which culture and ICTs affect each other mutually and iteratively rather than linearly the vast majority of the literature approach the relationships between ICT and culture under the assumptions of social informatics From a socially deterministic perspective ICTs are viewed as the dependent variable in the equation whereas from a technologically deterministic perspective ICTs are an independent variable The issues of multiculturalism

and ICTs attracted much scholarly attention and have been explored under a myriad of contexts with substantial literature on global development social and political issues business and public administration as well as education and scholarly collaboration We synthesize here research in the areas of global development social and political issues and business collaboration Finally we conclude by proposing under explored areas for future research directions **iRODS Primer** Arcot Rajasekar,Reagan Moore,Chien-Yi Hou,Christopher A. Lee,Richard Marciano,Michael Wan,Wayne Schroder,Sheau-Yen Chen,2022-05-31 Policy based data management enables the creation of community specific collections Every collection is created for a purpose The purpose defines the set of properties that will be associated with the collection The properties are enforced by management policies that control the execution of procedures that are applied whenever data are ingested or accessed The procedures generate state information that defines the outcome of enforcing the management policy The state information can be queried to validate assessment criteria and verify that the required collection properties have been conserved The integrated Rule Oriented Data System implements the data management framework required to support policy based data management Policies are turned into computer actionable Rules Procedures are composed from a Micro service oriented architecture The result is a highly extensible and tunable system that can enforce management policies automate administrative tasks and periodically validate assessment criteria Table of Contents Introduction Integrated Rule Oriented Data System iRODS Architecture Rule Oriented Programming The iRODS Rule System iRODS Micro services Example Rules Extending iRODS Appendix A iRODS Shell Commands Appendix B Rulegen Grammar Appendix C Exercises Author Biographies *The Practice of Crowdsourcing* Omar Alonso,2022-06-01 Many data intensive applications that use machine learning or artificial intelligence techniques depend on humans providing the initial dataset enabling algorithms to process the rest or for other humans to evaluate the performance of such algorithms Not only can labeled data for training and evaluation be collected faster cheaper and easier than ever before but we now see the emergence of hybrid human machine software that combines computations performed by humans and machines in conjunction There are however real world practical issues with the adoption of human computation and crowdsourcing Building systems and data processing pipelines that require crowd computing remains difficult In this book we present practical considerations for designing and implementing tasks that require the use of humans and machines in combination with the goal of producing high quality labels

This is likewise one of the factors by obtaining the soft documents of this **Exploratory Search Beyond The Query Response Paradigm Resa Roth** by online. You might not require more grow old to spend to go to the book establishment as skillfully as search for them. In some cases, you likewise pull off not discover the notice Exploratory Search Beyond The Query Response Paradigm Resa Roth that you are looking for. It will unquestionably squander the time.

However below, next you visit this web page, it will be in view of that very easy to acquire as without difficulty as download guide Exploratory Search Beyond The Query Response Paradigm Resa Roth

It will not admit many grow old as we run by before. You can attain it even if be in something else at home and even in your workplace. so easy! So, are you question? Just exercise just what we meet the expense of under as capably as evaluation **Exploratory Search Beyond The Query Response Paradigm Resa Roth** what you subsequently to read!

https://staging.conocer.cide.edu/results/browse/index.jsp/jeep%20comanche%20factory%20service%20manual.pdf

Table of Contents Exploratory Search Beyond The Query Response Paradigm Resa Roth

1. Understanding the eBook Exploratory Search Beyond The Query Response Paradigm Resa Roth
   - The Rise of Digital Reading Exploratory Search Beyond The Query Response Paradigm Resa Roth
   - Advantages of eBooks Over Traditional Books
2. Identifying Exploratory Search Beyond The Query Response Paradigm Resa Roth
   - Exploring Different Genres
   - Considering Fiction vs. Non-Fiction
   - Determining Your Reading Goals
3. Choosing the Right eBook Platform
   - Popular eBook Platforms
   - Features to Look for in an Exploratory Search Beyond The Query Response Paradigm Resa Roth
   - User-Friendly Interface
4. Exploring eBook Recommendations from Exploratory Search Beyond The Query Response Paradigm Resa Roth

Exploratory Search Beyond The Query Response Paradigm Resa Roth Introduction

In the digital age, access to information has become easier than ever before. The ability to download Exploratory Search Beyond The Query Response Paradigm Resa Roth has revolutionized the way we consume written content. Whether you are a student looking for course material, an avid reader searching for your next favorite book, or a professional seeking research papers, the option to download Exploratory Search Beyond The Query Response Paradigm Resa Roth has opened up a world of possibilities. Downloading Exploratory Search Beyond The Query Response Paradigm Resa Roth provides numerous advantages over physical copies of books and documents. Firstly, it is incredibly convenient. Gone are the days of carrying around heavy textbooks or bulky folders filled with papers. With the click of a button, you can gain immediate access to valuable resources on any device. This convenience allows for efficient studying, researching, and reading on the go. Moreover, the cost-effective nature of downloading Exploratory Search Beyond The Query Response Paradigm Resa Roth has democratized knowledge. Traditional books and academic journals can be expensive, making it difficult for individuals with limited financial resources to access information. By offering free PDF downloads, publishers and authors are enabling a wider audience to benefit from their work. This inclusivity promotes equal opportunities for learning and personal growth. There are numerous websites and platforms where individuals can download Exploratory Search Beyond The Query Response Paradigm Resa Roth. These websites range from academic databases offering research papers and journals to online libraries with an expansive collection of books from various genres. Many authors and publishers also upload their work to specific websites, granting readers access to their content without any charge. These platforms not only provide access to existing literature but also serve as an excellent platform for undiscovered authors to share their work with the world. However, it is essential to be cautious while downloading Exploratory Search Beyond The Query Response Paradigm Resa Roth. Some websites may offer pirated or illegally obtained copies of copyrighted material. Engaging in such activities not only violates copyright laws but also undermines the efforts of authors, publishers, and researchers. To ensure ethical

downloading, it is advisable to utilize reputable websites that prioritize the legal distribution of content. When downloading Exploratory Search Beyond The Query Response Paradigm Resa Roth, users should also consider the potential security risks associated with online platforms. Malicious actors may exploit vulnerabilities in unprotected websites to distribute malware or steal personal information. To protect themselves, individuals should ensure their devices have reliable antivirus software installed and validate the legitimacy of the websites they are downloading from. In conclusion, the ability to download Exploratory Search Beyond The Query Response Paradigm Resa Roth has transformed the way we access information. With the convenience, cost-effectiveness, and accessibility it offers, free PDF downloads have become a popular choice for students, researchers, and book lovers worldwide. However, it is crucial to engage in ethical downloading practices and prioritize personal security when utilizing online platforms. By doing so, individuals can make the most of the vast array of free PDF resources available and embark on a journey of continuous learning and intellectual growth.

FAQs About Exploratory Search Beyond The Query Response Paradigm Resa Roth Books

1. Where can I buy Exploratory Search Beyond The Query Response Paradigm Resa Roth books? Bookstores: Physical bookstores like Barnes & Noble, Waterstones, and independent local stores. Online Retailers: Amazon, Book Depository, and various online bookstores offer a wide range of books in physical and digital formats.
2. What are the different book formats available? Hardcover: Sturdy and durable, usually more expensive. Paperback: Cheaper, lighter, and more portable than hardcovers. E-books: Digital books available for e-readers like Kindle or software like Apple Books, Kindle, and Google Play Books.
3. How do I choose a Exploratory Search Beyond The Query Response Paradigm Resa Roth book to read? Genres: Consider the genre you enjoy (fiction, non-fiction, mystery, sci-fi, etc.). Recommendations: Ask friends, join book clubs, or explore online reviews and recommendations. Author: If you like a particular author, you might enjoy more of their work.
4. How do I take care of Exploratory Search Beyond The Query Response Paradigm Resa Roth books? Storage: Keep them away from direct sunlight and in a dry environment. Handling: Avoid folding pages, use bookmarks, and handle them with clean hands. Cleaning: Gently dust the covers and pages occasionally.
5. Can I borrow books without buying them? Public Libraries: Local libraries offer a wide range of books for borrowing. Book Swaps: Community book exchanges or online platforms where people exchange books.
6. How can I track my reading progress or manage my book collection? Book Tracking Apps: Goodreads, LibraryThing,

and Book Catalogue are popular apps for tracking your reading progress and managing book collections. Spreadsheets: You can create your own spreadsheet to track books read, ratings, and other details.

7. What are Exploratory Search Beyond The Query Response Paradigm Resa Roth audiobooks, and where can I find them? Audiobooks: Audio recordings of books, perfect for listening while commuting or multitasking. Platforms: Audible, LibriVox, and Google Play Books offer a wide selection of audiobooks.

8. How do I support authors or the book industry? Buy Books: Purchase books from authors or independent bookstores. Reviews: Leave reviews on platforms like Goodreads or Amazon. Promotion: Share your favorite books on social media or recommend them to friends.

9. Are there book clubs or reading communities I can join? Local Clubs: Check for local book clubs in libraries or community centers. Online Communities: Platforms like Goodreads have virtual book clubs and discussion groups.

10. Can I read Exploratory Search Beyond The Query Response Paradigm Resa Roth books for free? Public Domain Books: Many classic books are available for free as theyre in the public domain. Free E-books: Some websites offer free e-books legally, like Project Gutenberg or Open Library.

Find Exploratory Search Beyond The Query Response Paradigm Resa Roth :

jeep comanche factory service manual
jeep grand cherokee ves manual
jeep soft top installation instructions
jeep patrio user guide
jd 4440 shop manual
jd 3720 manual
jcb service 8052 8060 midi excavator manual shop service repair book
jeep patriot starting problems
jd 4430 manual
jeep grand cherokee wiring diagram
jeep cherokee yj xj 1987 repair service manual
jeep cherokee owners manual 1991 | car owners
jeep cherokee 1987 wiring diagram
je reviens te chercher

jee paper 2 code k

Exploratory Search Beyond The Query Response Paradigm Resa Roth :

recettes pains du monde marie claire - Sep 15 2023
web recette de petits pains burgers maison 220 ml de lait 40 g de sucre 10 g de levure de boulangerie déshydratée 500 g de farine de blé 1 pot de yaourt 1 œuf 1 c à c bombée de sel 40 g de beurre 1 blanc d œuf
top 10 des pains du monde à refaire à la maison 750g - Feb 08 2023
web aug 11 2014   recettes de pain recettes de cuisine du monde recettes de batbout recettes de naans ou pain indien du batbout marocain au pao de queijo brésilien en passant par le bun américain nombreux sont les pains ayant une empreinte culinaire et culturelle forte dans certaines régions du monde
comment faire du pain plat 9 recettes du monde entier fine - Aug 14 2023
web il existe des dizaines de variétés de pains plats à explorer dans le monde de la piadina en italie à la tortilla en amérique centrale et du sud alors pourquoi ne pas faire un tour du monde avec nous et découvrir quelques unes des meilleures recettes de pain plat
15 recettes de pains du monde à partager cuisine az - Oct 16 2023
web apr 8 2016   15 recettes de pains du monde à partager batbout utilisez un robot à pétrir pour aller plus vite krachels petits pains orientaux à l anis potato bread pain à la purée de pommes de terre
recettes de pains du monde entier spiral bound march 24 2016 - Feb 25 2022
web mar 24 2016   amazon com recettes de pains du monde entier 9781474914604 wheatley abigail baer sam carabelli francesca clauzel virginie collectif books
le pain dans le monde les meilleures recettes loin de notre - Apr 10 2023
web pour vous mettre en appétit voici une sélection de différents pains du monde entier et oui il n y a pas que la baguette dans la vie l arepa zone géographique colombie venezuela et bolivie
pain complet recette de pain complet marmiton - Apr 29 2022
web attention le temps de cuisson correspond à mon four c est un four classique si vous avez un four à chaleur tournante le temps de cuisson peut être différent pour savoir si votre pain est cuit tapoter le dessous du pain s il sonne creux alors votre pain est prêt
recettes de pains du monde entier couverture à spirales - Aug 02 2022
web rires juste des gourmands à la maison moi y compris sommairepreparationles bases du painfaire du paindivers pains pain blanc simplepain à l avoine et au

ngca recettes de pain du monde entier gorenje - Mar 09 2023

web ingrédients 600 g de farine 500 ml de lait fermenté ou kéfir 1 cuillerée à soupe de sucre 1 cuillerée à café de sel 1 cuillerée à café de bicarbonate de soude 1 à 2 cuillerées à café de vinaigre 1 cuillerée à soupe de graines de pavot de sésame ou

les meilleurs pains du monde entier magazine avantages - Oct 04 2022

web dans notre diaporama découvrez quelques unes des meilleures recettes de pain préparées dans le monde entier et si on n y trouve pas son bonheur on peut encore faire son propre pain maison lire aussi peut on faire du pain sans gluten et ou sans farine gâteaux sans farine les meilleures recettes 1 13

types de pain variétés de pain du monde entier bake it with - Jun 12 2023

web cette liste des différents types de pains du monde entier est exactement ce dont vous avez besoin pour trouver le complément parfait à n importe quel plat bakeitwithlove pain flatbread quickbread levure blé

42 recettes de pains du monde journal des femmes cuisiner - May 31 2022

web jul 12 2022   42 recettes de pains du monde sélections de recettes rédaction cuisine exit le pétrissage et le repos avec le kesra ou aghroum un pain d origine kabyle qui a tout pour plaire n attendez plus et filez en cuisine voir la recette kesra kabyle aghroum mon livre ajouter la recette kesra kabyle aghroum miche fermière anglaise

recette de pain du bon pain fait maison - Sep 03 2022

web retrouvez en un seul endroit toutes nos recettes de pains et de brioches pain de mie pain de campagne pain de seigle pain sans gluten baguette express vous n aurez que l embarras du choix mie filante moelleux incomparable et bon goût de beurre seront au rendez vous avec nos recettes de brioches

les pains du monde entier recette de pain - Nov 05 2022

web le pain est un aliment de base dans de nombreuses cultures à travers le monde et chaque région a sa propre variété de pain avec ses caractéristiques uniques voici un aperçu de quelques uns des pains les plus populaires du monde

25 types de pain différents types du monde entier - Dec 06 2022

web aug 30 2022   1 baguette si vous aimez votre pain avec une croûte croustillante et croustillante la baguette est l option parfaite ce pain français est exactement cela avec un intérieur doux et moelleux pour démarrer une baguette est faite avec seulement quatre ingrédients simples farine levure sel et eau

8 recettes de pains maison faciles et rapides avec ou sans gluten - Jul 01 2022

web mar 6 2023   vous pouvez varier les saveurs avec différentes garnitures sel de mer herbes fraiches chili séché olives etc 4 focaccia du printemps sans gluten marie Ève laforte tout le monde peut déguster ce délicieux pain plat italien dans une version non seulement sans gluten mais aussi sans produits céréaliers

recettes de pains du monde entier album decitre - Mar 29 2022

web mar 24 2016 recettes de pains du monde entier de abigail wheatley Éditeur usborne livraison gratuite à 0 01 dès 35 d achat librairie decitre votre prochain livre est là

recettes de pains 2163 recettes sur ptitchef - May 11 2023

web mélange d eau de sel de farine et de levure le pain existe dans le monde entier il se présente davantage sous forme de galette plate lorsqu il utilise d autres céréales que le blé l épeautre ou le seigle seules capables d emprisonner grâce au gluten qu elles renferment le dioxyde de carbone nécessaire à la montée de la pâte

recettes de pains du monde entier amazon sg books - Jan 07 2023

web delivering to singapore 049145 sign in to update your location all

recettes de pains du monde entier pains orientaux - Jul 13 2023

web recettes de pains du monde entier pains orientaux dans le bol du robot muni de la lame pour pétrir concasser mettez la farine la levure l eau le sucre et le sel

audiobook understanding normal and clinical nutrition by - Dec 29 2022

web 40 rows mar 1 2023 understanding normal and clinical nutrition book author rolfes sharon rady contributors pinna kathryn whitney eleanor noss published

chapter 19 solutions understanding normal and clinical - Jan 18 2022

web understanding normal and clinical nutrition by whitney eleanor noss cataldo corinne balog

understanding normal and clinical nutrition mindtap course - Feb 16 2022

web understanding normal and clinical nutrition 9th edition chapter 19 we have solutions for your book this problem has been solved problem 1cp chapter ch19 problem

chapter 22 solutions understanding normal and clinical - Apr 20 2022

web understanding normal and clinical nutrition 9th edition chapter 18 we have solutions for your book this problem has been solved problem 1cp chapter ch18 problem

understanding normal and clinical nutrition whitney eleanor - Dec 17 2021

understanding normal and clinical nutrition mindtap course list - May 22 2022

web understanding normal and clinical nutrition 9th edition chapter 22 we have solutions for your book this problem has been solved problem 1cp chapter ch22 problem

understanding normal and clinical nutrition google books - Aug 05 2023

web cengage learning jan 1 2020 health fitness 1120 pages this updated 12th edition of understanding normal and clinical

nutrition presents the

chapter 18 solutions understanding normal and clinical - Mar 20 2022

web hardcover isbn 10 035736810x isbn 13 9780357368107 publisher cengage learning 2020 view all copies of this isbn edition synopsis about this title about this edition

understanding normal and clinical nutrition google books - Sep 06 2023

web dec 20 2012   understanding normal and clinical nutrition ninth edition provides the most current and comprehensive coverage of the fundamentals of nutrition

understanding normal and clinical nutrition 9th edition - Oct 07 2023

web jun 20 2011   understanding normal and clinical nutrition ninth edition provides the most current and comprehensive coverage of the fundamentals of nutrition

understanding normal and clinical nutrition 9th edition - Jul 04 2023

web understanding normal and clinical nutrition 9th edition author sharon rady rolfes and kathryn pinna publisher brooks cole genres medical publish date june 20

understanding normal and clinical nutrition 9th edition - Jul 24 2022

web understanding normal and clinical nutrition 9th edition isbn 13 9781133714835 isbn 1133714838 authors sharon rady rolfes rent buy this is an alternate isbn

understanding normal and clinical nutrition google books - Jan 30 2023

web understanding normal and clinical nutrition ninth edition provides the most current and comprehensive coverage of the fundamentals of nutrition and

understanding normal and clinical nutrition 9th edition chegg - Aug 25 2022

web understanding normal and clinical nutrition 9th edition by ellie whitney 2011 english pdf read online 66 mb download

understanding normal and clinical nutrition rolfes sharon rady - Jun 03 2023

web ch 1 an overview of nutrition ch 2 planning a healthy diet ch 3 digestion absorption and transport ch 4 the carbohydrates sugars starches and fibers ch

understanding normal and clinical nutrition colorado - Nov 27 2022

web cengage learning jan 1 2020 health fitness 1120 pages this updated 12th edition of understanding normal and clinical nutrition presents the

understanding normal and clinical nutrition journal of nutrition - Apr 01 2023

web jun 20 2011   understanding normal and clinical nutrition ninth edition provides the most current and comprehensive coverage of the fundamentals of nutrition

understanding normal and clinical nutrition hardcover amazon ca - Feb 28 2023
web aug 25 2008   understanding normal and clinical nutrition eighth edition provides the most current and comprehensive coverage of both normal nutrition such

understanding normal and clinical nutrition google books - Oct 27 2022
web jul 15 2005   understanding normal and clinical nutrition seventh edition provides the most current and comprehensive coverage of both normal nutrition such

understanding normal and clinical nutrition google books - Sep 25 2022
web understanding normal and clinical nutrition 9th edition we have solutions for your book this problem has been solved problem 1cp chapter ch17 problem 1cp

chapter 26 solutions understanding normal and clinical - Jun 22 2022
web jan 1 2020   nourish your mind with understanding normal and clinical nutrition 12th edition start by learning about normal nutrition including the

understanding normal and clinical nutrition 9th - May 02 2023
web understanding normal and clinical nutrition is a comprehensive textbook that can be used in most introductory nutrition courses but it could also be used in intermediate

stuvia hoe maak je een tentamen met open vragen - Mar 10 2023
web open vragen zijn vragen waarbij de student zelf een antwoord formuleert het te geven antwoord bestaat uit één woord enkele zinnen of een uitgebreide uitwerking in de toets

open vragen 70 punten pdf full pdf black ortax - Apr 30 2022
web open vragen 70 punten 2 7 downloaded from uniport edu ng on may 18 2023 by guest introductie wordt meteen geconcretiseerd door uitvoerige voorbeelden van loep

open vragen 70 punten pdf gcca - Oct 25 2021

toets met open vragen radboud universiteit - Dec 07 2022
web open vraag vraag die altijd begint met een vragend voornaamwoord wie wat waar waarom waarmee waarvoor welke hoe hoe vaak hoeveel op een open vraag kan

proef oefen tentamen vragen en antwoorden studeersnel - Jan 08 2023
web antwoordmodel open vragen 70 punten aan dit antwoordenoverzicht kunnen geen rechten worden ontleend 1 a de snelle groei

open vragen 70 punten uniport edu ng - Jan 28 2022

web mar 22 2023 open vragen 70 punten pdf this is likewise one of the factors by obtaining the soft documents of this open vragen 70 punten pdf by online you might not require

schriftelijk examen met open vragen ku leuven learning lab - Nov 06 2022

web open vragen 70 punten 1 a de snelle groei nibe svv 2011 zakeli author jan guido devos 28 downloads 286 views 57kb size report download pdf

open vragen vertaling naar engels voorbeelden nederlands - Jun 01 2022

web open vragen 70 punten open een wekelijks vragen we jouw mening over uitéénlopende shopping topics vanaf 70 punten heb je zelfs al een eerste kortingbon te pakken

open vragen 70 punten bespoke cityam - Feb 26 2022

web wanneer de ander uitgepraat is kun je hem of haar een open vraag stellen over iets wat hij of zij net gezegd heeft of wat daar in ieder geval op de een of andere manier mee te

open vraag 2 definities encyclo - Sep 04 2022

web vertaling van open vragen in engels in dit specifieke geval liet de openbaarmaking enkele open vragen in this particular case the disclosure left a few open questions als

quiz maken met punten hoe werkt de puntentelling - Feb 09 2023

web feb 15 2023 open vragen zijn met name geschikt voor het evalueren van leerdoelen gericht op toepassing analyse synthese evaluatie of het formuleren van een opinie

hoe stel je open vragen top 80 voorbeelden in 2023 ahaslides - Aug 15 2023

web jun 7 2023 gesloten vragen open vragen krijgen we vanavond lavacake als toetje wat eten we vanavond als toetje koopt u vandaag wat fruit uit de supermarkt wat ga

open vragen stellen 15 stappen met afbeeldingen wikihow - Nov 25 2021

antwoordmodel open vragen 70 punten pdf free download - May 12 2023

web jul 6 2023 elke seconde gaat er in dit voorbeeld 5 punten van de maximale score af punten bij vragen zonder timer als je geen timer instelt bij de vraag dan verdienen bij

open vragen 70 punten help environment harvard edu - Sep 23 2021

antwoordmodel open vragen 70 punten aan dit - Aug 03 2022

web open vragen 70 punten pdf pages 3 23 open vragen 70 punten pdf upload jason v hayda 3 23 downloaded from black ortax org on september 3 2023 by jason v hayda

antwoordmodel open vragen 70 punten pdf free download - Oct 05 2022
web open vragen 70 punten 5 5 theoretische introductie wordt meteen geconcretiseerd door uitvoerige voorbeelden van loep onderzoek die te maken hebben met het begeleiden

open vragen 70 punten banking finance gov ie - Jul 02 2022
web you have remained in right site to begin getting this info acquire the open vragen 70 punten associate that we have enough money here and check out the link you could

lijst met de beste open vragen psycat games - Jun 13 2023
web open vragen 70 punten 1 antwoordmodel aan dit antwoordmodel kunnen geen rechten worden ontleend over de antwoordindicaties kan niet worden gecorrespondeerd voordat

open vragen 70 punten pdf free voto uneal edu - Dec 27 2021
web open vragen met antwoordmodel om de leerstof te oefenen de leerstof en de oefenvragen sluiten volledig aan op de eindtermen voor ipma c zoals ipma certificering nederland

open vragen 70 punten pdf help environment harvard edu - Mar 30 2022
web open vragen 70 punten pdf in a digitally driven world where displays reign supreme and immediate conversation drowns out the subtleties of language the profound strategies

verschillen open en gesloten vragen surveymonkey - Jul 14 2023
web ontdek wanneer u open vragen of juist gesloten vragen gebruikt zodat u de juiste inzichten verzamelt om actie te ondernemen een belangrijk onderdeel van het maken

quiz maken met open vragen en antwoorden start hier - Apr 11 2023
web noot het tentamen bestaat uit 40 mc vragen 16 micro 24 macro totaal 70 punten 1 open vraag micro 15 punten en een open vraag macro 15 punten in dit document