ATLANTIS PRESS

Advances in Social Science, Education and Humanities Research, volume 440

International Conference on Online and Blended Learning 2019 (ICOBL 2019)

Development of Web-Based Information Media for Career Choice Recommendations According to Personality Type of MBTI

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***Abstract*— This study aims to develop a web for information media on career choice recommendations based on MBTI personality types (Myers-Briggs Type indicator). The method used for web development was the SDLC (Software Development Life Cycle) method with the Prototyping model. The author uses the PHP programming language and MySQL as a database in web development, with a decision-making model using the forward chaining method so that the search for inference is more natural and follows the existing rules. This media was used by students to search for career choice information that suits their personality. From the personality types obtained through a series of tests by answering the questions given, users can develop themselves from the conclusions and suggestions received in the form of career choice recommendations that were appropriate to the personality type of the MBTI. The white box tested results were obtained by recapitulating parameter calculations, considered to have succeeded from logic errors, and the results of the trial user response in the category 60% very good, 30% good, and the rest were quite good.**

Keywords: web development, career choice, MBTI type personality, SDLC method

various information services for very diverse users [1]. The ease of accessing the web can be applied in the field of psychology by providing information to students about career choices based on personality types.

Every student has the right to determine the career he will choose in the future to achieve success, so early on, it needs planning and development to choose the right career. One of the success factors in choosing a career that suits personality, so enjoy and like that career. Personality has a positive relationship in career development for the future [2]. Most start thinking about career choices at the final stage of school level or in some cases, when already in college [3].

The students have difficulty in determining future career plans due to lack of information or their ignorance about the type of personality they have, consequently choosing the kind of career that was not per their passions, so leave the work they have been living. Sometimes students choose majors or careers only to follow the trends or choices of parents, without knowing in terms of personality, ultimately can not enjoy the career they have chosen and the lack of knowledge and understanding of a person about personality types and interests to consult with a psychologist.

Personality tests were usually carried out by psychologists and career counseling to determine the type of personality in the traditional form using paper and require expensive costs. They were utilizing current technological developments by providing information to students to find out their personality types so they can prepare themselves in choosing a career that suits them.

Web development for career choices according to personality using the prototype model SDLC (Software Development Life Cycle), a phased approach to analyzing and building system designs using cycles that are specific to user activities. PHP and MySQL programming languages as a database used in web development, with a decision-making model using the forward chaining method, which is a method of forwarding search inference made with a straightforward design and per existing rules.

The primary purpose of this research was how to develop the web as media information to be implemented to students to prepare themselves in choosing the right career according to their personality. Students can access the web without incurring costs as a solution for users in making decisions to find career choices that fit their personalities so that they can develop career planning going forward.

I. LITERATURE REVIEW

A. Web-based Information Media

Web Service Technology is base on the concept of service-oriented computing. Providing services with standards that integrate web-based media through connections and sharing business processes on various media networks with vendors, languages, and platforms that communicate with each other and with clients [4]. Access various information through web-based media with various challenges in meeting user needs [1].

There are various types of web development that provide service functionality, some designed for interactive tools, communication dialogs, information presentations, and graphic design. Web-based information media evolve their use to all sectors of society and become a platform that cannot separate from computers [1]. The information media as a means of gathering material to be used as material knowledge by users by accessing the web provided.

Various learning paradigms that students can adopt from the use of web-based media [5]. There are several stages of testing for web development so that the products produced are functional [6]. There is a gap to provide information to students about various fields of study in higher education institutions, because generally only through courses or tutoring. The website can be an excellent platform for career choice information available for secondary schools, considered crucial because so many students can get access to information simultaneously and from anywhere and anywhere [7].

Web development for career choice information media uses the PHP programming language for database admins, users, personality types, and career choices. In its application, several factors need to be considered, such as supporting facilities and infrastructure, user and material readiness, and online costs [8]. The web as a platform is a source of information for users to find out various types of personality types by providing recommendations for suitable career choices. What's more, the use of technology is very massive in the 21st century.

B.Career and Personality Relationships

Web development research for career choice focuses explicitly on how individual and contextual factors influence one's career change over time [9]. Everyone chooses a career with many factors, such as interests, talents, personality, place of residence, and level of education. Personality becomes essential in future career planning [10]. Many considerations in choosing a career, and therefore it needs planning and development to choose a preferred career, is an essential process in one's life from an early age [5].

It is essential to consider the personality types and intrinsic factors of students and provide career choice preferences because future performance and success are directly affected by these factors. The mismatch of career choices with personality can be disastrous [11]. Personality types are defined as patterns that can be identified in a way that someone prefers to understand and make judgments [12].

Personality has a relationship with career goals [13], career success depends on conformity with personality types. Personality mismatches and lack of interest in careers and can end with the results of destroying student dissatisfaction, decreased motivation, lack of productivity leading to increased dropouts and career failure [11]. From the beginning, to need knowledge about personality types to suit a future career.

C. MBTI Theory of Indicators

One theory used in tests to study the types of careers that match personality is the theory of the design of Katherine Briggs and her daughter Isabel Briggs Myers, an application of Carl Gustav Jung's psychological theory. Carl Jung focused personality theory as a complex network that leads to a harmony with oneself and one's environment [14].

According to The Myers-Briggs Company, this application includes those used in team development and leadership, conflict and stress management, and career transition/planning [15]. MBTI can serve as a way to introduce and develop concepts of individual differences in personality and relationships between someone's behavior with the community [16].

MBTI relies on four main dimensions, which are opposite (dichotomous). Although they are the contrary, they have everything and are more inclined or comfortable in one particular direction, namely Extroversion (E) versus Introversion (I), Sensing (S) versus iNtuition (N), Thinking (T) versus Feeling (F) and Judging (J) versus Perceiving (P) [17].

II. RESEARCH METHODOLOGY

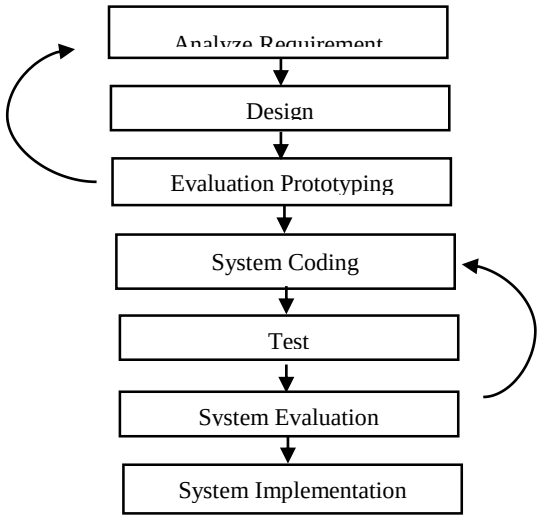
A.Method of collecting data

- Literature Study, this method was carried out to obtain additional literature data from the web development and forward chaining methods, sources used in the form of books, journals, scientific papers, and supporting sites that can assist in the completion of the research.
- Field Study, the method was done by observation and interviews to gather information related to research

B.Web Development Method

The web development method used is the SLDC (Software Development Life Cycle) method with the Prototyping model. A prototype model that makes it easy for researchers to improve and evaluate if there are errors in the development process, users are also involved in providing input to the web that has developed to suit their needs and desires.

Fig. 1. Prototyping Model



C. Analysis of Results

Development of web-based information media for career choices based on personality, there are several needs to be done to obtain, collect, store and obtain information from the literature, then matched with the facts identified by the existing literature.

- Input Requirements
  - Input by the admin who knows all aspects of the web application.
  - Input by the user is in the form of data from the user and self-information to fill in the consultation dialog answers that are displayed by the web.

- Process requirements

  The process of information media web-based was done in several ways, namely collecting data from books, literature, experts in their fields, and reports. The data obtained is represented in the knowledge base using the production rules written in the form IF - Then (If-Then). This statement connects the premise part (if) and the conclusion part (then) which written in the way of :

  IF [premise] THEN [conclusion]

TABLE 1. THE BASIC CATEGORIES OF PERSONALITIES

Kode	Basic Of Personality
T1	*Ekstrovert* (E)
T2	*Introvert* (I)
T3	*Sensing* (S)
T4	*Intuition* (N)
T5	*Thinking* (T)
T6	*Feeling* (F)
T7	*Judging* (J)
T8	*Perceiving* (P)

- Output needs

  The output of personality test results is a form of conclusion of career choice recommendations based on MBTI personality types and suggestions for users. These results were base on personality traits that have been selected by the user at the time of consultation.

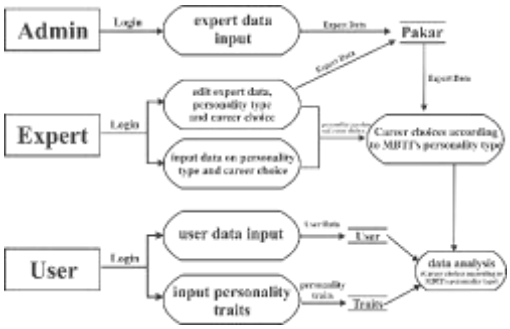
D.System Design

- Designing a Context Diagram

Fig. 2. Context Diagram

- Data Flow Diagram

Fig. 3. Data Flow Diagram



III. RESULTS AND DISCUSSION

The testing technique for using web-based information media for career choice recommendations based on personality that has developed was white-box testing with direct testing methods. This testing technique was testing how the software works itself, namely the primary path (program procedures) or the looping process. The parameters used to calculate the trials of the main menu, the admin menu, and the user menu are Cyclomatic Complexity, Region, and Independent, with the following results:

TABLE 2. RECAPITULATION OF CALCULATION RESULTS

No	Modul	CC	R	IP
1	Main Menu	5	5	5
2	Admin Menu	6	6	6
5	User Menu	7	7	7
Total		18	18	18

The conclusion from the recapitulation of the calculation results above gets the number of Cyclomatic Complexity = 18, Region = 18 and Independent = 18, because the number of these three parameters are the same, it can be concluded that the web-based development has succeeded from logic errors.

The trial of developing career choice applications based on web-based personality was also randomly implemented to 30 students to find out their responses in using the application, and the following results were obtained:

TABLE 4. USER RESPONSE RESULTS

Kategori	User
Very Good	18
Good	10
Enough	2
Very Less	0

The results of the Table show that 18 users or 60% were in the very good category, 10 users or 30% in the good category, 2 users or 10% in the good enough category, and 0 users for the very poor category. From these data, it can be concluded that the user's response to the development of web-based information media for career choice personalities is very good. The following is a web-based information media interface:

Fig. 4. Main Menu

Fig. 5. User Menu

Fig. 6. Admin Menu

IV. ACKNOWLEDGMENT

Development of web-based information media for career choice based on personalities applies the forward chaining method for searching their knowledge base and prototyping development models to build the web. The development process was by adding several forms, such as user databases, consultation data, career choice data, and suggested data.

Testing with the white box method resulted in no logic errors in the web, and user testing gets a good response. Information was given to users about personality types, personality traits, career choice recommendations, and develop recommendations based on tracked data. The development of web-based information media can help prospective workers in determining the appropriate work area for them in the future.

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