College of Computer Studies
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STRACK: Strand and Track Identifier Mobile Application System for the Columban College, Olongapo City

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ACKNOWLEDGEMENT

The proponents would like to make this opportunity to properly give thanks to all the people whom have been concerned with this project. The journey of this project would not have been conquered the support of our family, advisors, love ones, and friends.

The proponents would like to thank Ms. Gemma Tapado, our System Analysis and Design advisor, for providing more than enough knowledge, guidance, comments, and suggestions through the course of the project regardless of persistently having work in her hands.

The proponents would also like to thank the Panelists during our defense for pointing some mistakes, their recommendations and for suggesting missing points in our project that would help us pull it off.

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Chapter 1

Background Information

Introduction

Our country is known all over the world not only with our talented countrymen and hospitality, but also to our modern heroes, the Overseas Filipino Workers (OFW). We, Filipino's are very competitive especially when it comes to working and job searching around the globe.

On May 15, 2013, President Benigno Aquino Jr. signed the Republic Act No. 10533 or also known as the "Enhance Basic Education Act of 2013". They called it as K-12. It was first implemented on 2015 which marks the beginning of adjustment and changes in the curriculum system of Department of Education.

The Philippines is now implementing the K-12 program because of this two-primary reason. "First, the Philippines is the last country in Asia and one of only three countries worldwide with a 10-year pre-university cycle (Angola and Djibouti are the other two). Second, a 12-year program is found to be the best period for learning under basic education. It is also the recognized standard for students and professionals globally" (Gripal, 2016). By looking at this information, the kind of system that we currently have, we really have the disadvantage in Columban College, especially on the side of the students. Due to our previous educational system, it hinders us from getting jobs and decreasing our competitiveness in the globe.

With the introduction of K-12 system, there are lot of changes, not only for the schools that will cater these changes, but also to the mind of the students who will be the most affected about this. In the current system, after 4th year in high school students will go directly to College or University to pursue professional degree and all of this had

been change. There are 4 choices that the student can choose or what they call as "Tracks". First one is, Academics, this is composed of four strands, first is Accountancy, Business & Management (ABM); next one is Humanities and Social Sciences (HUMSS); third one is Science, Technology, Engineering, Mathematics (STEM); lastly, General Academic Strand (GAS).

The second track that is available is Technical-Vocational-Livelihood, this specialization helps the student in technical and vocational learning, obtaining National Certificate Level II (NC II) provided the student passes the assessment provided by Technical Education and Skills Development Authority. With this certificate, the student has a chance to get a job in fields like, Home Economics, Industrial Arts, Agricultural and Fishery Arts and Information and Communications Technology. Next track is Arts and Design, which help the students fields like Journalism, media and entertainment, etc. Last track is Sports, specialization of student who really wants to be an athlete and focus on that field.

With this new trend and changes in our Education system, the proponents thought of a way on how we can provide guide to the students who will first experience it to choose which tracks/strands best suit them with their personality, grades, and in a simple examination.

Current System

Columban College Inc. is a Filipino Catholic Institution devoted to serve the necessities of the city and the surrounding provinces of Zambales and Bataan, whose main campus is in Olongapo City. The institution was first known as Naval Reservation Junior College. It was passed by Msgr. Crisostomo A. Cacho in 2005 to the Columban Fathers. Fr. Paul O'Malley SSC as his assistant. The present President is Rev. Msgr. Crisostomo A. Cacho. The school offers education for basic education that follows the K-12 curriculum. As for College, it offers a various selection of courses for Associates Bachelors, and Master's Degree.

At this time, the school has a Career Assessments for the Junior High School student which includes 9th and 10th graders and uses three types of tactics or procedures for career assessing: Evaluation, Interview, and Seminars.

There are three types of examination or evaluation that are being used: The National Career Assessment Examination (NCAE) which is taken by the 9th graders to determine and help students to decide on the programs they will take in higher education matching their skills and interests; Second is the Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC) which it determines the personality type of the students that they're suitable in; Lastly, Otis-Lennon School Ability Test (OLSAT) which determines the IQ of students in Mathematics, English, and Critical Thinking Skills.

Interviews are basically having a personal assessment with the Guidance Counselor that is done for upcoming Senior High Students (SHS) that will test individual's skills, intelligence, attitude, etc.

Seminars are performed by all the 10th grade students inside the Columban College Convery Hall along with the guest speakers that provides and share their own mastery and fields to convey a detailed information about their career and to equip students with the right knowledge, attitude, and skills that they can apply in the future.

Disadvantage of the Current System

- They do not have any existing examinations or processes to help students choose which strand they want to be in.
- Most of the students are undecided of what they wanted to be in.
- Evaluations takes time for the result to be given. Such as the NCAE examinations takes a year to see the results.
- Interviews can be very time-consuming by setting up venues and analyzing problems.

Proposed System

The purpose of the STRACK project is to develop and implement an effective Mobile Application System that accommodates the 9th, 10th and the upcoming Senior High School (SHS) students of the Columban College, Olongapo City. The STRACK is capable to identify the student's strength and weaknesses based on his/her abilities, traits, and behavior using formulated evaluations while being amused formally and effectively.

The proposed system will be a Mobile Application that is developed in mobile phones. It will be formal and effective graphic design that can take useful and beneficial for all participants within the school — student, faculty, and administrators. The specific objectives for developing this project are as follows:

- To help generate a more rapid and precise exam results in lesser time needed than the evaluation system.
- To provide a system that will check the examinations automatically rather than checking it manually.
- The system will provide suggestions regarding on the student's interests and passion.
- To create a mobile application system that will help the school to assess the students to which strand or track is he/she best suited.
- The system will provide guidance for the incoming senior high school students, guidance on which strand they belong using their knowledge.

Significance of the Study

As of today, the role of educational technology in teaching is of great importance because of the use of information and communication technologies. Technology, such us mobile devices could improve relationships between teachers and students. Therefore, the following beneficiaries will be benefited:

- Students (9^{th} & 10^{th} Grade) – The main beneficiaries of the proposed system since it guides and test them in search for a suitable career path.
- Parents – The parents will also have a part of the beneficiaries because it will help lessen the expenses from their child's shifting of courses and to eliminate wasting of any forthcoming tuition money.
- Guidance Counselor/s – They will also benefit from the proposed system because it is another system to use if some of the other current system did not work for some students.
- Researcher/s - The researchers too will also be benefited by gaining knowledge about Career Path, the experience of building the proposed system, or the mistakes that can be learn as a team.
- Future Researchers – The future researchers can also be benefited. They can either build a better proposed system or even solve the restrictions and disadvantages of the proposed system.

Scope and Limitation

Scope:

One of the Columban College's goals is to be digitize or computerized to upgrade all the current systems that is being used. As the matter of fact, the proposed system is not just a regular computerized system, but it is a mobile application which it can be handier than the desktop itself. The use of mobile applications continues to increase as mobile devices continue to become more and more abundant. Since it is targeted for 9th and 10th Graders, it is most likely appeal to them because it is handy. Why? For instance, many teenagers go out of town, going back to their family's province, etc. It will be handier to just download the app and Sign in to the Application and take the examination on the spot rather than on the desktop that we have wait to take their turns inside the computer laboratory room.

- The proposed system is intended for the 9th & 10th graders and the upcoming Senior High School (SHS) students of the Columban College.
- The proposed system will be developed using Ionic, angular with a firebase database because of its capability to create application with a better system output.
- The proposed system will guide the students on how they can choose between the strands that are currently available in the new education system that we have.
- The Intelligence Test are to be done through sets of questions which is in random order and composed of different subjects such as Mathematics, English, Science, etc.
- The Survey is to be done to know what the student's abilities and skills are.
- The results will be given once the examination is fully finished.

Limitations:

In regard to the proposed system, it is not intended to be a replacement of the career guiding methodologies that the school have, but rather be a part of the approaches that the Columban College will use in illuminating 9th and 10th Graders in enhancing them with the right Strand Path for it is the best to always have an eventuality strategy.

- The proposed system is online based. Updates are done by the developer.
- The database that we are using is Firebase which means that all data and actions must be done while connected to the internet.
- The proposed system is most good to students who have not yet decided on what to pursue or choose among the strands that currently available.

DEFINITION OF TERMS

Mobile Application – type of application software designed to run on a mobile device.

System - a proposed Mobile Application System that was created for a use.

Strand Identifier – a proposed system that will identify student's strand by taking the specified examinations.

Track – it is a set of possible course selections accessible to a specific group of students.

Intelligence Test – a test that is being used for Career Assessing that involves the student's intelligence from a given area of learning which measures their desired Strand Path before entering Senior High School (SHS).

Student – the upcoming Senior High School Students (Grade 9 & 10).

K to 12 – term used in education and educational technology and a short form for the publicly supported school grades prior to college.

NCAE – aptitude test geared toward providing information through test results for self-assessment, career awareness and career guidance

RIASEC – refers to a theory of careers and vocational choice based upon personality types or interests.

OLSAT – multiple choice test often used as a tool for admission into schools/programs for students to measure scholastic achievement across all ages.