

Bachelors of Science in Information Technology

Gyalpozhing College of Information Technology



Proposal

For

Second Year Project

Bachelor of Science in Information Technology

FITNESS

Submitted by

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Gyalpozhing College of Information Technology

Read carefully before filling the form.

1. Please do not alter the layout of the application form. Information must be filled in the spaces provided, under set format.
2. Guidance notes in various fields should not be deleted.
3. Required information should be duly filled in the specified fields.
4. Required heads/fields which are not relevant to the project should be marked **N/A** (Not Applicable) or left blank and should not be deleted.

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Application for Final Year Project**1. Project Identification**

A. Reference Number:	
(for office use only)	
B. Project Title: FITNESS	
C. Project Internal Guide:	
Name:	
Designation:	
Organization:	
Mobile # :	Tel. # :
Email:	
C1. Project External Guide:	
Name:	NA
Designation:	
Organization:	
Mobile # :	Tel. # :
Email:	
C2. Student Group Lead:	
Name:	Damcho Lhendup
Roll No:	12190045
Department:	
Mobile # :	17727644 Tel. # :
Email:	<u>12190045.gcit@rub.edu.bt</u>

D. Organizations Involved in the Project:

(Please identify all affiliated organizations collaborating in the project, and describe their role/contribution to the project.)

D1. Industrial Organizations:

#	Organization Name	Role / Contribution
	NA	

D2. Academic Organizations:

#	Organization Name	Role / Contribution

D3. Funding Organizations:

#	Organization Name	Role / Contribution
	NA	

E. Key Words:

(Please provide a maximum of 5 key words that describe the project. The key words will be incorporated in our database.)

- Height
- weight
- Gym
- Fitness-News
- Nutrition

F. Research and Development Theme:

Fitness is defined as being in good physical shape or being suitable for a specific task or purpose. In order to be fit, we have to know the current state of the body and change accordingly. Knowing your BMI, managing your diet and working out contribute a great amount in keeping your body fit.

Body mass index (BMI) is a measure of body fat based on height and weight that applies to adult men and women. BMI provides a reliable indicator of body fatness for most people and is used to screen for weight categories that may lead to health problems.

BMI is a measurement of a person's leanness or corpulence based on their height and weight, and is intended to quantify tissue mass. It is widely used as a general indicator of whether a person has a healthy body weight for their height. Specifically, the value obtained from the calculation of BMI is used to categorize whether a person is underweight, normal weight, overweight, or obese depending on what range the value falls between. Being overweight or underweight can have significant health effects, so it is a useful indicator of whether any additional testing or action is required.

Maintaining your diet according to your Body can handle, will lead you to live a life of fitness. Having a fit and healthy body always pays off because health is the actual wealth.

G. Project Status:

(Please mark ☒)

☐ New ☒ Modification to previous Project

☒ Extension of existing project

H. Project Duration:

Expected Starting Date: 10/03/2021

Planned Duration in months: 6 months

2. Scope, Introduction and Background of the Project

A. Scope of the Project:

System scope(Features):

- **Calculating BMI:** it will allow you to calculate your Body Mass Index using your weight and height and tell you whether your weight is in healthy proportion to your height.
- **Nutrition data:** it will provide nutrition and calorie content of commons foods so can you can plan your diet according the nutrition and calorie content.
- **Health-line:** it will display the news/quotes related to fitness of one's body so you can be motivated to exercise and keep your body fit.
- **Gym tracker:** it will show the location of the nearby fitness centers so you can go and work out there if interested. It will reduce your time finding gyms.

User Scope(Target and area coverage)

There is no specific target for this app, anyone can use it to simply calculate their BMI or get news on being fit.

The area coverage of my project will be limited to our country, since the gym locations and the foods in the nutrition data will only be of my country.

B. Introduction (Project Background and Literature Review, Current State of the Art):

(Detailed summary of what all has been done internationally in the proposed area quoting references and bibliography. Please note that this section demonstrates the depth of knowledge of the project team and builds the confidence of the evaluators about capability of the team in achieving the stated objectives.)

(Please describe the current state of the art specific to this research topic.)

Project Background:

Your health is at the center of your life. Every part of your life relies on you having a good health and being fit. He who has health has hope, and he who has hope has everything. Staying healthy has always been important as the need to remain in good health can have a positive effect on almost every aspect of our lives. Staying fit can be done in a variety of ways, including eating lean and healthy meats along with plenty of fruits and vegetables. Knowing your Body Mass Index (BMI) is one of the ways to know your health status. BMI is a way to figure out your approximate level of body fat in an easy, inexpensive way. It's a number based on your weight and height that can help you tell if you are at a healthy weight for your height. In general, the higher the number, the more body fat a person has.

So I aim to create a platform where any individual can check their BMI and work on their diet. To calculate the BMI they have to input their height (meters/centimeters/feet) and weight (Kilogram/lbs.) and know their health status. It will help them control their diet accordingly and to that they can go to the nutrition data side, where the information about the foods will be provided. There will also be a fitness news side where news related being fit will be posted to keep the users informed about the benefits of being healthy.

Literature Review:

21st century is the century of mobile apps, new trends, technologies, and digitization that will make a drastic change humans health.

By maintaining a healthy weight and normal BMI you're likely to have fewer joint and muscle pains, more energy, better regulation of bodily fluids and blood pressure, reduced burden to your heart and circulatory system, better sleep, reductions in blood triglycerides, blood sugar, and the risk of developing diabetes, and reduced risk for heart disease and certain cancers (Biswas & Pradhan, 2002).

Although not an exact measurement of body fat percentage, in most cases, BMI is a reliable tool for establishing risk levels for illnesses, especially ailments related to excess body fat. Many healthcare professionals use BMI to determine effective doses for medicines. Often people with a higher BMI need higher doses. Hence, it is crucial to be aware of your BMI to ensure your overall wellness (ICICI prudential).

This simple app will help you calculate body mass index. Enter your height and body weight data. The app works fast. This is a great BMI calculator. You can choose a metric unit of measurement. App uses different measurement systems. You will find out your personal body mass index. After that, you can choose a training program. The app will show the result of the body mass index. It uses a special scale. You will find out if you are overweight. (BMI Calculator – Body Mass Index Calculation).

C. Challenges:

(Please describe the challenges, specific to this research topic, currently being faced internationally.)

Listing all the diets in the nutrition data: Since there is uncountable variety of foods/diets. It will be difficult to write and list all the diets and their nutrition content in the nutrition data expect for the most common diets we eat.

Locating all the Gyms: since there could be countless gyms in our country, locating each and every one of them could be a challenge. There are chances I could miss some of them.

Completing the task as per the schedule: Times needs to be spent learning android development, on research, content part of the app (what needs to be included) and for developing the app so completing the project as per the schedule will be a challenge.

D. Motivation and Need:

(Please describe the motivation and need for this work.)

Physical health is an issue in this rapidly evolving technology era. We cannot take it for granted so finding ways to keep ourselves healthy and fit is a must do step.

Body mass index is a good gauge of body fat. The most basic definition of overweight and obesity is having too much body fat so much so that it could have a risk to our life. So BMI is needed to determine whether a person has right amount of weight by calculating the ratio of their weight to height squared.

By maintaining a healthy weight and normal BMI you're likely to live a life with fewer medical/physical/mental problems. And knowing the perfect diet for your body will help you live an even healthier life. Since health care is free in our country, most of the people don't care much of their health but it should be the first priority of one's life. Having a healthy body not only keeps our physical state good but our mental states too. So I was motivated to make an application where one can calculate their BMI through which they will know their health status and through that maintain their diets. In addition to that, it will also keep them updated with health related news and will help them locate the fitness centers nearby to workout. Keeping yourself fit and updated with the diets is a healthy way of living your life.

3. Aim and Objectives of the Project

(Please write the actual aim of your project. Also, describe the measurable objectives of the project and define the expected results. Use results-oriented wording with verbs such as 'to develop..', 'to implement..', 'to research..', 'to determine..', 'to identify..' The objectives should not be statements and should not include explanations and benefits. The objective should actually specify in simple words what the project team intends to achieve (something concrete and measurable/ deliverable). Fill only those objectives that are applicable to the proposed project.)

AIM :

To develop an android application for calculating Body Mass Index (BMI), displaying a nutrition data alongside to maintain your diet accordingly, updating with the fitness news and locating the nearby fitness centers.

OBJECTIVES :

The objectives of my project:

- My project proposes to develop a platform for calculating your BMI and a display of nutrition to maintain your diet accordingly.
- Fitness related news/codes will also be uploaded so you could get reminded of your fitness.
- It will also give the location of your nearest fitness center, so you can go and work out there if desired.

5. Methodology

A. Development / Research / Test Methodology:

(Please describe the technical details and justification of your development and research plan and test plan and testing strategies. Identify specialized equipment, facilities and infrastructure which are required for the project and their utilization plan. The block diagrams, system flow charts, high level algorithm details etc. have to be provided in this section. Also, describe the overall methodology to be used for the particular research topic)

General Methodology

>Literature review

The comprehensive summary of previous research paper on related topic is thoroughly discussed in this phase. It includes articles, books and other sources relevant to particular topic.

>Requirement gathering and analysis

When collection of all relevant information from research papers and existing system related to stated problems are completed, the team then works on understanding the detailed problem. It involves conducting several for brain storming and survey related to the topic. The SRS document is prepared simultaneously which will serve the purpose of input for design phase. This also helps to provide additional creative ideas and information while designing.

>Design

In this phase the design is prepared from the requirement specification which is studied in the first phase. It helps specify hardware and requirements of the system.

>Implementation

After successful system design the project is divided into modules and actual coding is started. This is the longest phase software development life cycle.

>Testing

After coding, it is tested to make sure that the product is actually serving the needs addressed and gathered during the requirement phase. It makes sure that the system functions as specified and eliminates any issues and errors in this phase.

>Documentation

Finally, after completing all the coding and fulfilling all the features of the application, project document is created.



Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product. An Agile model development begins by specifying and implementing just part of the software, which is then reviewed to identify further requirements. This process is then repeated, producing a new version of the software at the end of each iteration of the model.

Reason for choosing the Agile model for our project are:

- Functionality can be developed rapidly and demonstrated.
- It is inexpensive while meeting the changing requirements as the working software is frequently delivered to the user.
- This model draws the inference that the needs of the end user do not remain the same so it requires limited planning to begin the process of the project.
- Availability of risk identification factor.
- Gives flexibility to developers and high customer satisfaction.
- Good models for environments that change steadily.

C. Project Activities:

(Please list and describe the main project activities, including those associated with the transfer of the research results to customers/beneficiaries. The timing and duration of research activities are to be shown in the Gantt chart in Section 8.)

Installation of software and tools: Installing android studio version (2 and above), Java Development Kit (v8 or more) and database server.

Resource gathering: Referring books, video tutorials, online reference related to android app development, Java programming language, MySQL and XML.

Design Phase: it includes designing user interface, database design and includes Understanding the functionalities, flow of information, keeping the design concepts in mind.

Development of the product: The development of app begins here with coding, using Android.

Testing the product: The product will undergo unit test to ensure that each unit functions properly and will also carry out integration testing to ensure that it produce a desired function after combining all the units.

Final Documentation: After all the phases are done we will prepare the documentation of the project, project report and at the last we will end with final project presentation.

D. Key Milestones and Deliverables:

(Please list and describe the principal milestones and associated deliverables of the project. A key milestone is reached when a significant phase in the project is concluded, e.g. selection and simulation of algorithms, completion of architectural design and design documents, commissioning of equipment, completion of test, etc.) The timing of milestones is also to be shown in the Gantt chart in Section 8.

No.	Elapsed time from start (in months) of the project	Milestone	Deliverables
1.	08/02/2021-13/02/2021	Topic Selection	Topic Selected
2.	04/03/2021-14/03/2021	Literature review, brainstorming, prototype and background review.	Project proposal report.
3.	15/03/2021-25/03/2021	Requirement gathering	User interface.
4.	26/03/2021-08/04/2021	System design	User interface
5.	09/04/2021-10/05/2021	Coding and Implementation	Full Application features.
6.	11/05/2021-16/05/2021	Testing	Bug free Application
6.	17/05/2021-22/05/2021	Report writing and final review	Final free Application

7. Benefits of the Project (Expected output/outcomes):

- It will help as an indicator of total body fat in individuals.
- It will help the users assess a person's health risks associated with obesity and overweight.
- The users will be able to manage their diet according to its calorie and nutrition content.
- They will be updated with the news/quotes related fitness and health.
- Nearby gym centers can be easily located without much time consumption.

6. Risk Analysis/Feasibility**A. Risks of the Project:**

(Please describe the factors that may cause delays in, or prevent implementation of, the project as proposed above; estimate the degree of risk.)

(Please mark <input checked="" type="checkbox"/> where applicable)	Low	Medium	High
Technical risk		<input checked="" type="checkbox"/>	
Timing risk		<input checked="" type="checkbox"/>	
Budget risk	<input checked="" type="checkbox"/>		

A1. Comments(Describe the risk):

Technical risk: Since technologies are uncertain and there are chances that our laptops/system might crash so there is technical risk.

Timing risk: Time needs to be spent on learning android development, on research, content part of the app (what needs to be included) and for developing the app. We can't assure the probability of completing the project as per the schedule.

Budget risk: we don't have budget risk because we don't have to buy any software or technology. Our project can be done using free software available on internet.

(Approval of Project Proposal by the Competent Authority (Department Chairman) and Project Review Team is mandatory before the start of project execution.)

Sl #	Name	Signature
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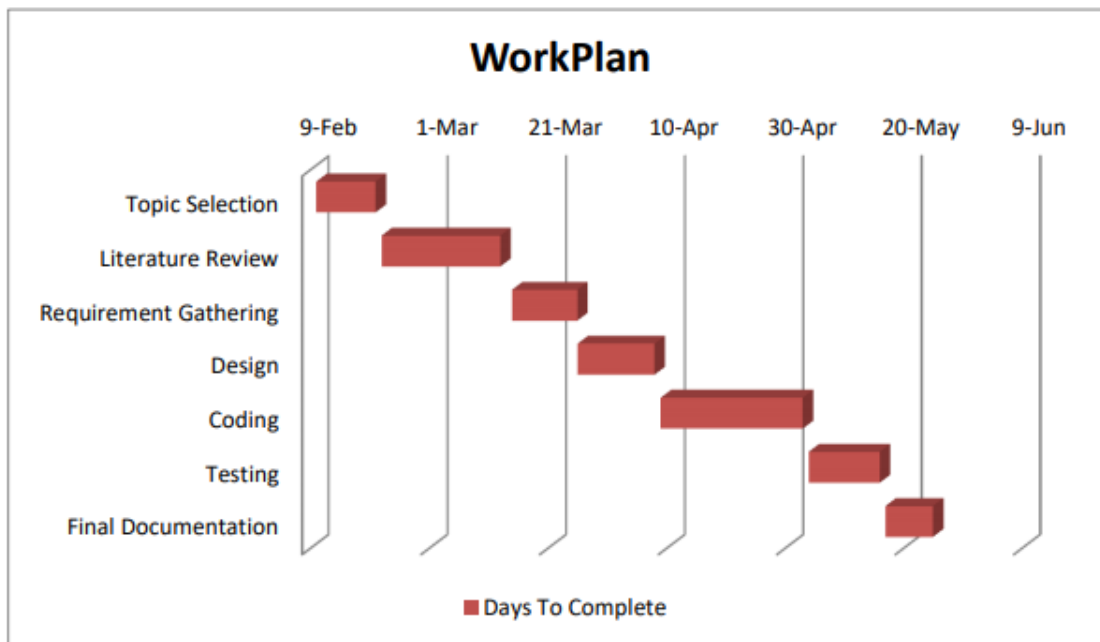
& stamp:

8. Reviewers Panel Comments

10. Project Schedule / Milestone Chart /Work plan

(Project schedule using MS-Project (or similar tools) with all tasks, deliverables, milestones, clearly indicated are preferred. Task should be measured in terms of hours)

Activities	Start Date	Days To Complete	End Start
Topic Selection	10-Feb	10	20-Feb
Literature Review	21-Feb	20	13-Mar
Requirement Gathering	15-Mar	11	25-Mar
Design	26-Mar	13	7-Apr
Coding	9-Apr	24	2-May
Testing	4-May	12	15-May
Final Documentation	17-May	8	24-May



13. Report Writing Guidelines

(Project report will be written under the specified guidelines.)

Bibliography

- BMI calculator - body mass INDEX Calculator: Ici prulife. (n.d.). Retrieved March 14, 2021, from <https://www.icicprulife.com/tools-and-calculators/bmi-calculator.html>
- 11 best BMI calculator apps for Android & Ios: Free apps for Android and iOS. (2020, September 05). Retrieved March 14, 2021, from <https://freeappsforme.com/bmi-calculator-apps/>
- B. (n.d.). [Web log post]. Retrieved March 14, 2021, from https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/english_bmi_calculator/bmi_calculator.html