**ASSIGNMENT 1 FRONT SHEET**

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| **Student declaration**  I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice. | | | |
|  |  | **Student’s signature** |  |

**Grading grid**

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| **❒ Summative Feedback: ❒ Resubmission Feedback:** | | |
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# Introduction

I'll introduce wearable medical devices in this report. The focus of the research will be made clear. As a result, both the primary study and the secondary research will be discussed in this work. There will be research-related questions and issues on the subject of wearable medical devices. Data from interviews and surveys will be gathered and documented. They will also be evaluated, and conclusions will be made.

# I. Introduction the purpose of the research

## I.1. Purpose of the research

A new technological era is emerging, and with the advent of technology 4.0, we have witnessed a significant digital transformation across numerous industries. The health industry is comparable to other sectors of the economy. The digital transition has advanced greatly thanks to wearable medical technology. These tools make it simple for hospitals and users to maintain and conduct research that enhances public health. Through this study, we will discover more about how these technologies can change people's lives.

## I.2. Research’s aims and objectives

We want to make things simpler and more convenient in practically every aspect of our lives. If there is something we need to do, we want it to fit into our schedules as easily as possible. This is the major justification for the widespread use of wearable technology in healthcare, especially for preserving and monitoring our health. Medical wearables monitor a patient's health, detect anomalies, and even treat medical diseases using sensors, actuators, software, and electronic patches applied to the skin. Wearable vital signs monitor, a smart watch glucose monitor, or wearable pain management devices are a few examples. This study will demonstrate the types and the impacts of those devices on human life.

Students in Hanoi serve as our research subjects as we study wearable medical gadgets that have a positive impact on life. We shall examine study data on these gadgets here. For the most comprehensive understanding of people's experiences and viewpoints, we will conduct interviews, surveys, and explore secondary data sources.

We conduct research on the many wearable medical device categories, user demographics, and activities. Discovering its advantages for users and its impact on public health is our aim. We are interested in the outcomes of wearable medical technology and why. There will be inquiries like:

* What are wearable medical devices?
* What are wearable medical devices used for?
* What advantages do wearable medical devices offer?
* What advantages do wearable medical devices have for general health?
* Should people use wearable medical devices?

# II. Literature review

## II.1. Research methodologies

### A. Primary research

Primary research is a methodology that researchers use to gather data directly as opposed to relying on data from earlier research. Primary research is only done to address a specific issue that needs in-depth investigation (QuestionPro, 2022).

Primary research entails collecting previously uncollected data. It can be gathered through various means, such as interviews, surveys, observations, or self-conducted fieldwork. A primary source, such as an original study, document, artifact, or eyewitness account, will in turn be used as a result of the primary research (University of Southampton, 2022).

Primary research methods according to Purdue University, 2022:

* Interviews: Individual or small-group question-and-answer sessions are known as interviews. Interviews are helpful when you want to get an expert or knowledgeable opinion on a topic because they provide a lot of information from a limited number of people.
* Surveys: Surveys are a more formalised form of questioning than interviews, involving bigger groups of respondents. When you want to find out what a larger population thinks, surveys can be useful because they give you a limited amount of data from a large number of people.
* Observations: Making organised notes about events in the world is a component of observation. When you want to learn more about a specific event without the slanted perspective of an interview, observations can give you insight about specific people, occasions, or locations.
* Analysis: analysis entails gathering data and putting it together in some way according to standards you create. When looking for a trend or pattern, they are helpful. Analyzing gender roles through the analysis of commercials from three major television networks would be one type of analysis.

### B. Secondary research

Secondary research, also known as desk research, is a research method that makes use of previously collected data. To improve the overall effectiveness of research, existing data is compiled and summarised. Research that has already been published in research reports and other similar documents is considered secondary research. These documents may be made available through online resources, public libraries, surveys that have already been completed, etc. Secondary research is much more affordable than primary research because it uses data that is already available, as opposed to primary research, which collects data from organisations or businesses directly or through the use of a third party (QuestionPro, 2022).

Instead of creating a new data set using primary research techniques, secondary research assimilates data from various sources using the research materials already in existence. The gathering of data for secondary research frequently involves using the internet, libraries, archives, schools, and organisational reports (Formplus Blog, 2022).

Data obtained online is referred to as online data. This method has become more popular recently due to the wide array of both free and paid research resources that are readily accessible online and can be quickly accessed with the click of a button (Formplus Blog, 2022).

Government and non-government archives are another place to find helpful research materials, and these archives typically have information that can be verified and offers helpful insights on various research contexts. In many cases, access to these data would require payment (Formplus Blog, 2022).

Public and private libraries offer access to research materials as well. Consider a library as a repository of knowledge that holds a collection of pertinent data that can be used as reliable information in a variety of research contexts (Formplus Blog, 2022).

Schools, faculties, and colleges are excellent sources of secondary data, particularly for academic research. This is due to the fact that more research is conducted in academic institutions than in other industries (Formplus Blog, 2022).

### C. Qualiative

To better understand ideas, opinions, or experiences, qualitative research involves gathering and analysing non-numerical data (such as text, video, or audio). It can be used to uncover intricate details about a situation or to spark fresh research concepts (Bhandari, 2022).

Traditionally, qualitative research techniques have been carried out in-person or over the phone. However, compared to conventional methods, the online research approach has many important advantages in terms of time and resource savings. Qualitative research is used to comprehend how individuals perceive their surroundings. To comprehend or explain the actions, motives, and traits of members of a target group, researchers turn to qualitative research (QuestionPro, 2022).

The following are the most popular qualitative research techniques:

* Case study
* Focus Groups
* Record-Keeping
* Qualitative observation
* Ethnographic research
* One-to-one interview

For example, one of the most popular techniques for conducting qualitative research is conducting in-depth interviews as known as one-to-one interview. One respondent is interviewed one-on-one in a personal setting. This approach is entirely conversational and provides chances to probe the respondent for specific information. The ability to collect precise information about people's beliefs and motivations is one of the benefits of this method. If the researcher is skilled and knowledgeable, asking the right questions can aid in the collection of relevant data. The researchers should ask follow-up questions to help them gather additional data if they need more information (QuestionPro, 2022).

### D. Quantiative

The procedure of gathering and analysing numerical data is known as quantitative research. It can be applied to identify trends and averages, formulate hypotheses, examine causality, and extrapolate findings to larger populations (Bhandari, 2022).

Quantitative research is the systematic investigation of phenomena through the collection of quantifiable data and the application of statistical, mathematical, or computational methods. Through the use of sampling techniques and the distribution of online questionnaires, polls, and surveys, for instance, quantitative research gathers data from current and potential customers. Which can be represented numerically as the results. A product or service's future can be predicted using these numbers, and changes can then be made as necessary (QuestionPro, 2022).

The most essential tool for all quantitative outcome research methodologies and studies is survey research. A sample of respondents was surveyed using a variety of methods, including online polls, online surveys, paper questionnaires, web-intercept surveys, etc. A survey is described as a research technique used to gather information from a pre-selected group of respondents in order to learn more and gain new perspectives on a variety of interesting topics. One of the most crucial components of conducting quantitative outcome research is survey distribution because of how simple it is and the vast number of people it can reach depending on the research time and research objective.

## II.2. Research methods that will be used in this research

In this research, primary, secondary, qualitative, and quantitative researches will be used.

I will use journals, web content, books, and other sources for secondary research to examine every facet of the wearable medical device. I'll be able to respond to many of my prepared questions using this technique. I will benefit greatly from using the internet to conduct my research on these devices in the most effective and accurate ways possible.

 I will use interviews and surveys to gather primary research, including qualitative and quantitative research. These two methods, in my opinion, will offer the most reliable source of data I can find.

### II.2.1. Interview

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