Senior project Week 2, 3, 4, 5 slides and their explanation by Dr. Ramzan.

In **blue** the slides text, and in **black** the explanation of Dr. Ramzan from the video.

**WEEK 2**

**SLIDE 2**

**What is research?**

Research is a systematic inquiry that investigates hypotheses, suggests new interpretations of data or texts, and poses new questions for future research to explore

(systematic) is any activity that follows a particular procedure. Systematic ARE NOT the things we do just when the situation rise up and we decide at that time.

Example of a systematic activity is the midterm examination. Midterm examination become after a certain number of weeks, a certain number of attendance days on a particular time.

Another example of systematic activity is applying for a job, or promotion.

(Inquiry) means to *ask* something, to have a question need to be answered.

From that we can say the definition is “research is following a procedure to have an answer of a question”.

(hypothesis) is a query, and it can be true of false. And research is about proving whether this query is true or false. Research asks a question and then study.

**Second**, research is about developing a new interpretation, a new thing from existing knowledge.

(interpretation of data) We know that air is exists, but how we can use this data is what we do in the research. Like when we use this knowledge to know how do we breath. We can also, from our knowledge that air exists, find out how we fly. These two things (how we breath & how we fly) are called researches.

**Third** part of the research is to give new questions for future research. Because one researcher does a particular part of the research and can not do all the aspects. Research gives the questions for the next researches to continue based on this research.

Research can one of these three things or one of them.

**SLIDE 3**

very important slide..

why do we encourage students and researchers to do research?

Research is very beneficial activity. If we don't do research, the world does not go further.

What is human thinking? It is an instigation process to ask why does particular thing being like this. Like when we ask “why fruit are sweet. Why the sun is hot?”, “why do we love ? For example”. Research is about using these abilities of asking questions and find the reasons of that. This is the general perspective of why do we do research, now we look at the perspective of our slides:

**Why do research?**

Research allows us to:

Pursue new interests. (it is looking interesting to us, and our minds accept it)

Confirm or Disconfirm our position on certain issues (like when we prove that the hypotheses is true or false by our research).

Enhance or Create new products, processes, services and even literature (literature is like user manual, new research paper or other documents).

Create and learn something new (create new things that add knowledge to people and also the researchers themselves learn from).

Contribute to knowledge

**Slide 4**

**"how do we conduct research” is called the research method.**

**How do we conduct research?**

The way we conduct research essentially defines the “methods” or methodology that we follow. (The method is the way we do research).

(examples of the research methodology is by doing an Experiment. Doing interviews is a research method, too. Also by servery, or many other methods)

(the purpose of the research method is to give you the data you need to conduct your research. You get the data then you can analys for your research). (In our senior project, one of the most important research methods is the literature review and experiment. The literature review helps you in knowing what type of product you should have. The second method in your senior project is experiment, and this is done after you build your product or app and you test whether it has been built correctly or not.

When you do a literature review, you are gathering data, and when you do the experiment you also gather data. These data tell you whether you are going in the right direction or not)

Research methodology is the process used to collect information and data for the purpose of making business decisions. (like when you make a decision based on the literature review).

Research methodology may be quantitative or qualitative. The methods of data collection will also vary based on the methodology.

(quantitative) is when we be associated with numbers. Like what is the temperature today. How many marks have you got.

(qualitative) give the description, the quality without telling the Numbers. Like when we say: today is so hot without saying the number of temperature.

**SLIDE 5**

**Research methods**

**1.** Qualitative

* Interviews (because it is random and in the run time)
* Observations (because you get the information while observing)

based on these two or one of them, you can't precisely tell whats going on because you don't have quantities

2. Quantitative

* Surveys
* Experiments
* Simulations

In the quantitative methods, you execute the data. Like when you experiment your product, you get the exact number of errors, critical errors, medium errors and so on. You can also know the position of these errors.

**SLIDE 6**

**Research Ethics**

**(Some call that “guidelines”, because you can follow those guidelines and you can ignore them)**

**(Some others call that rules, which you are forced to follow)**

**سمّاها مرة رولز ومرة جايدلاينز لسبب جهلته في الحقيقة**

Rules for distinguishing between right and wrong.

These tell you how to be a responsible researcher or a good researcher, how to not cheat, how to not lie, how to be honest, how to be careful, how to be considerate. These all tell you what is a good research. And it is your own decision to have, it is not legal. It is like when you avoid to hide some of the information and avoid the harm of any people working with you in the research.

Moral obligation to act ethically at all times and situations.

Be mindful of:

* Scientific misconduct
* Research fraud
* Plagiarism
* Avoid harm to research participants

**WEEK 3**

**SLIDE 2**

The main purpose of the literature review is to understand what has been done, what is most common or less common, and to understand the structure of your work. The second reason you do a literature review is to show that the work you are doing is potentially good and many people have done work on it.

**What is a Literature Review?**

A literature review discusses published information in a particular subject area, and sometimes information in a particular subject area within a certain time period.

Any thing you use in the literature review should have been poplished.

**SLIDE 3**

**Why write Literature Reviews**

Literature Reviews:

* Serve as a lamp post—as a guide, illuminating your path
* Helpful to know what has been done, how it was done, and the research outcomes
* Determine how different your research is going to be
* Provide alternative direction or paths

**SLIDE 4:**

**Creating your Reference list**

Depending on your Professor’s preference, citations may be done in one of the following ways:

* APA
* MLA
* Chicago
* Turabian

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**IN WEEK 4 SLIDES, THERE IS NOTHING IMPORTANT TO STUDY.**

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**WEEK 5**

**What is your role in the development of a new system?**

* Your role starts with careful planning
* Planning requires an understanding of people, process, technology and governance issues (understand of people and processes is needed to know who should be assigned to which process).

System planning:

* Study problems and needs of an organization
* Determine best approach to improving organization through use of:

People

Methods

Information technology

* Help system users and managers define their requirements for new or enhanced information systems
* Helps to justify the need for this new or enhanced system

**Two Main Activities of planning**

* Identification of need (Remember the EHR project).
* Investigation and determination of scope

(The components of an EHR means that there is a lot to cover in terms of design)

(scope) of the project is about clarifying what will be conducted and what will not being included.