**Interview**

Interviewee: Marian Phillippe

Occupation: Student

Age: 26

Gender: Female

**1.** What is your current program of study/profession?

**I am currently a master student, studying chemistry at Concordia university. My thesis is on computational and analytical chemistry.**

**2.** How much experience do you have in this field of study/work?

**I have a bachelor’s degree in medicinal chemistry, a 4-year program. I also studied chemical engineering for 2 years before going into medicinal chemistry.**

**3.** Do you enjoy your studies/work? If yes, which part interests you the most? If no, what do you not like about it?

**Yes, I enjoy my studies and I’d say that the research is what interests me most. I get to learn through experimentation.**

**4.** What tasks or jobs would you say you mostly do in your field of study/work?

**As a graduate student, I spend a lot of time researching, reading literature, designing experiments, analyzing the result and documenting the findings.**

**5.** Can you tell me some of your likes and dislikes and what you enjoy doing?

**I like reading books, mostly philosophical, psychological and sometimes novels. I like painting/drawing. I love the nature. I enjoy spending time with family, learning and playing games (video games, board games, …). I don’t like politics and I hate war.**

**6.** What are your values when it comes to your field of study?

**Loyal, Intelligent, Independent, Hard-Working, Caring, Neat, Creative.**

**7.** What occupation are you aiming towards, if you are not already employed?

**I chose this field because I wanted to get into pharmaceuticals to develop and design new and improved medication that could benefit everyone.**

**8.**  What skills have you been developing which you feel will be the most important for this future career?

**Researching, writing, presenting, communication, programming.**

**9.** What are your current goals for yourself? If you have none, do you think you will have some in the future?

**One of my goals is to come up with treatment for Alzheimer’s disease. I also want to study data science and travel the world.**

**10.** Do you prefer to use to use the hand-held calculator or computer calculator? why?

**I prefer the hand-held calculator. No particular reason except that I’ve been using that ever since I can remember so I’m more comfortable using that and its easier for me.**

**11.** Do you have experience using the command line of your computer? And using a calculator on your computer?

**Yes, I have some experience with the command line and I’m familiar with basic commands.**

**Yes, I have used the calculator on my computer from time to time.**

**12.** Are you comfortable enough to use a calculator without a Graphical Interface and just with the command line?

**No, I’m not comfortable and experienced enough with the command line.**

**13.** Currently, my team and I are designing a scientific calculator and we are hoping to get your input to improve our design. How much experience do you have with a Scientific Calculators, and how often do you use one?

**On a scale of 1 to 10 I’d say 7. Currently not much but during my bachelor’s program I used one at least 3 to 4 times a week.**

**14.** Are there any functions you feel should be included in a Scientific Calculator but are not?

**Not really.**

**15.** Does your operating system provide any calculator? if yes, Do you think its functions are enough for you?

**Windows does provide a calculator but I’ve never used the scientific module from that calculator as I’m more comfortable with the hand-held device.**

**16.** What function/functions do you usually need from a Scientific Calculator most?

**I mostly use regression, derivative, and integral from the scientific calculator.**

**17.** Do you think you will use a scientific calculator in your field of study and in your future career? If yes, what will some of your uses for it, if no, do you think you would use for personal use?

**No.**

**No, I don’t think I’d use it for personal purposes either.**

**18.** Do you use Scientific Calculator during your work or your exams or your course projects or anything else?

**I don’t use one at the moment but during my bachelor’s studies, I used it for assignments, projects, and exams.**

**19.** Our calculator will include the functions for exponential functions, arccos, log, Gamma, Mean Absolute Deviation, Standard Deviation, sinh and a special exponential function which allows variables and expressions for the base instead of natural numbers. Can you tell us which function you would find most usable for yourself? Why?

**From what I remember during my bachelor’s I mostly used exponential, log, and standard deviation functions as they have more applications in computations involving chemical experiments.**

**20.** If no, is it because you don’t see yourself using any of the functions mentioned, or some other reason?

**NA**

**21.** How familiar are you with these functions and how they work?

**I'm familiar with all of the mentioned functions and I know how all of them work except for Gamma.**

**22.** Do you think it is necessary that a Scientific Calculator should take a function as input?

**Yes, of course that would be very beneficial.**

**23.** Are there any features you would like to see included in this calculator that you think would make the design better?

**I don’t have anything in particular in mind.**

**24.** What should the precision for a Scientific Calculator be?

**5 decimal is sufficient for most cases.**

**25.** When using a calculator do you prefer to receive a step by step solution or simply a final answer?

**Depends on what I’m using the calculator for. Sometimes I would benefit from seeing the step by step solutions to better understand how the calculator arrived at the final answer and sometimes I know the steps and just want to speed up the calculation so I only the final answer.**

**26.** Do you think a history is essential for a calculator? If yes, how big should the history be?

**Yes. I think if it could have a filtering system that would only include more complicated calculations so the simpler calculations would not be saved. Up to 50 calculations should be good enough.**

**27.** Do you have any positive experiences with a Scientific Calculator, if yes please elaborate?

**Yes, I used it, I was happy to have sped up my calculations and saved time and that's all.**

**28.** Do you have any negative experiences with a Scientific Calculator, if yes please elaborate?

**Yes, it was a bit difficult and time consuming to access certain features of the calculator.**

**29.** In your opinion, what would improve your experience when using a Scientific Calculator on a computer? What features would improve its usage for you?

**I’m not sure about the scientific calculator on a computer as I don’t have any experience using one.**

**30.** If you were to use a scientific calculator in the future in your studies or work what would it be for?

**In my field most computations are done using specialized programs like Gausian and there is almost no place for a scientific calculator.**

**Analysis**

Based on the responses, the interviewee had little experience with scientific calculators on computer. Even though they had experience with the terminal they didn’t feel comfortable using a calculator with no graphical user interface. They were satisfied with the functionalities provided by the hand-held devices as it was sufficient for the work they did at their time of using. They deemed a history to be essential for a calculator and believed that history should only keep track of non-trivial and more important calculations. They also expressed interest in having a calculator that has the option of displaying a step-by-step solution rather than only displaying the final answer. The interviewee mentioned that they find it difficult and time consuming to access certain features of the calculators at times. They stated that they wouldn’t be using a scientific calculator in their master’s and their career as much as they did during their bachelor’s as most of the computations in their field are done using specialized software.

**Persona**

Marian Philippe is a 26-year-old master student, studying Chemistry with a thesis on computational and analytical chemistry. She is aiming towards a profession in the pharmaceuticals industry that would allow her to develop and design new and improved medication that will benefit everyone. Marian spends most of her time researching, reading literature, designing experiments and documenting the findings. She thoroughly enjoys her studies as she learns through experimentation.

**Name:** Marian Phillippe

**Gender:** Female

**Age:** 26

**Disabilities and restrictions:** None

**Education:** Bachelor’s in Medicinal Chemistry and Master’s in Chemistry (in progress)

**Profession:** Student

**Values:** Loyal, Intelligent, Independent, Hard-Working, Caring, Neat, Creative

**Goals:** Come up with a treatment for Alzheimer’s disease, study data science, travel the world

**Frustrations:** Does not like politics and hates war. Has had difficulty accessing certain features on the hand-held scientific calculator

**Hobbies:** Reading books, spending time with family, enjoying nature, painting/drawing

**Needs:** History for calculator for more complicated calculations, option to choose between step-by-step solutions and final answer depending on the problem

**Location of use:** School, lab, and home

**Computer Literacy:** Familiar with Windows operating system, has used command line before and is familiar with some of the basic commands but is not comfortable using a calculator with command line

**Special needs when using a computer:** None

**Mathematical proficiency:** Master’s level of mathematical understanding and is familiar with all the functions of eternity except for Gamma.