IITP102 Group Project 2021

Marks: 100
Submission type: Presentation of high-fidelity prototype and documentation
Group size: 5 members per group (11 groups)
Due date: 15 November 2021

Task:

Working in groups of 5 members, you are to design a high-fidelity prototype. As the semester progresses and we cover more topics, you will be required to make updates to your prototype to reflect what you have learned.

Using Microsoft PowerPoint, you will have to install the Storyboarding plug-in and create an application with a minimum of 5 screens. The application can open other applications, spreadsheets, Word documents, etc. Your application may also contain Macros as simulated services of an application.

Upon completion, groups will be required to submit a video presentation of their high-fidelity prototype in use. Additionally, documentation of the application's functioning will be required- more or less an instruction manual for users and another being a technical manual for system administrators.

Marking Guide:

The following will be considered when marking your submission:

Item	Description	Max Marks
Prototyping	Application of the prototyping methodology. Reading beyond the classroom information supplied.	20
Version Control	The use of version control tools to manage the application development and documentation.	20
ICT Systems Evaluation	Security considerations and how those were represented in the high-fidelity prototype.	20
Software Quality Assurance	Internal tests performed to assess the software quality. Test scores from external software assessments.	20
IT Visual Modelling	Considerations made regarding interface design theories, etc.	20 (From ITPP100 assignment)
IT Professional Tools	The use of various tools for project planning, system document, testing, ideation, etc.	20

Prototyping [20 marks]

The prototyping methodology consists of 6 phases (Requirements to Implementation). Five of these will be assessed in this section of the project. Although this section is about prototyping, the various aspects of the project are intertwined, presenting a nested structure of tasks and marks. For example, marks in the build section will be allocated for actual prototype building, as well as for the use of tools for version control.

Tasks in this section:

Task1: Requirements [5 marks]

In your groups, you are required to think of an idea for an app or IT system. Provide high-level requirements that a non-IT person would think of. For example, a typical client would tell you that they need a system for customers to see products and maybe be able to purchase products online. Provide as much detail as possible, but keep it high-level. You are welcome to include images of products and services that you want to sell/advertise, etc. on this system that is to be developed.

Submit a PDF with the details of the system/app on the learn site by Wednesday 8th September at 18h00.

Task2: Requirements and Quick Design [10 marks]

You have discussed functional and non-functional requirements in IITP102 and ITPP100. Your ITPP100 assignment requires you to design a medium-fidelity prototype. In order to develop this prototype, you will need to establish what the requirements are. As a group, specify the functional and the non-functional requirements of the app or system that you were assigned. For every screen that will be necessary, specify the functionality, etc.

Submit a Word or PDF form of these requirements and screens. Only 1 submission per group.

Due date: 4th October 2021 at 18h00

Task3: User Evaluation [5 marks] (Only 1 iteration)

This will be evaluated by how closely your requirements resemble the problem that was specified. The user will evaluate your high-fidelity prototype and offer feedback regarding the prototype's alignment to the app or system description given.

Submit a Word or PDF form of the user evaluation. Only 1 submission per group (evaluation is done as a group).

Due date: 22 October 2021 at 18h00

Version Control [20 marks]

In this module you will also learn about version control, which allows teams industry to collaborate on tasks while working remotely. There are quite a few version control tools available out there, with two major distinctions, which you will learn about in this module. Part of your project will assess your use of version control tools to maintain the correct version while collaborating.

Task1: Create a GitHub Repository [5 marks]

Go to www.github.com and sign up for a free account. Create a repository for the project that your group is working on (only one member needs to do this). Add the files for the project to the repository.

All group members should be added as users/contributors to the repository. Each group member is to submit a screenshot of their account viewing the files in the repository.

Due date: 22 October at 18h00

Task2: Commit a change [5 marks]

Each group member should attempt to commit at least one change to the repository. Make a screenshot of your successful commit and submit it as an image.

Due date: 29 October at 18h00

Task3: Clone a repository [10 marks]

Each group member should attempt to clone the repository to have a local copy. Submit a screenshot of the cloned repository.

Due date: 29 October at 18h00

ICT Systems Evaluation [20 marks]

IT systems and related communication network infrastructure are inherent to various vulnerabilities. These vulnerabilities can be exploited by threat actors. It is therefore important to be mindful of these vulnerabilities when designing, building and maintaining systems. The OWASP provides a list of 10 prevalent application vulnerabilities.

For this topic, you only have one task. You are required to write a report of at least 2 application vulnerabilities, 2 network vulnerabilities and 1 human error vulnerability that could be exploited to manipulate the system that you built. In addition, provide some mitigation controls that can be used to either prevent this from happening or minimize the impact. Refer to documents such as the NIST, ISO, COBIT, OWASP, etc.

Due date: 15 November at 18h00

Software Quality Assurance [20 marks]

The software quality assurance process involves debugging and testing software among other steps to ensure that proper processes are implemented. Due to the limitations we will only cover software testing in this module.

Task1: Planning the test [10 marks]

As a group, decide on a testing methodology (both whitebox and blackbox testing should be done). Plan how the test will be conducted and with what information. This should include what aspects will be tested, what information will be used, what the expected outcomes will be, etc. Submit your test plan in PDF format (one per group).

Due date: 15 November at 18h00

Task2: Write and conduct a test [10 marks]

Write a test case and conduct the test on your developed prototype. You might not be able to conduct some of the tests depending on the system functionality, but that is fine. Submit your test case and the results of your test (one per group).

Due date: 19 November 2021 at 18h00

IT Professional Tools [20 marks]

As you work on your project keep a list of the tools that you use for the development of your prototype. Submit a list of all of the tools that you use and the purpose for you have used them. Additionally, take screenshots of the system that you have developed and explain how it works. Submit this as a presentation with a voice over demonstrating how the system works.

Due date: 30 November at 18h00