



# COIT20272 Mobile App Development Project

## Term 1 - 2023

Profile information current as at 29/04/2024 07:53 am

All details in this unit profile for COIT20272 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

In this integrative capstone project, you will develop a significant and authentic mobile application. Specifically, you will employ the technical and professional skills that you have developed in your course of study to contribute to the development of an authentic web, hybrid, or native app. You will apply a relevant software engineering methodology, taking into account best practices in testing, quality assurance, and cyber security. You are required to use and document typical project management processes to ensure that the project is delivered on time and within budget.

### Details

Career Level: *Postgraduate*

Unit Level: *Level 9*

Credit Points: *12*

Student Contribution Band: *8*

Fraction of Full-Time Student Load: *0.25*

### Pre-requisites or Co-requisites

Pre-Requisites: COIT20268 Responsive Web Design, COIT20269 Mobile Web Apps, COIT20270 App Development for Mobile Platforms, PPMP20007 Project Management Concepts, COIT20246 Networking and Cyber Security.

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

### Offerings For Term 1 - 2023

- Brisbane
- Melbourne
- Online
- Rockhampton
- Sydney

### Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

### Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

## Class and Assessment Overview

### Recommended Student Time Commitment

Each 12-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 25 hours of study per week, making a total of 300 hours for the unit.

### Class Timetable

#### [Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### [Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

### Assessment Overview

#### 1. **Written Assessment**

Weighting: 10%

#### 2. **Written Assessment**

Weighting: 15%

#### 3. **Written Assessment**

Weighting: 10%

#### 4. **Practical and Written Assessment**

Weighting: 40%

#### 5. **Presentation and Written Assessment**

Weighting: 25%

### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Student Feedback

##### **Feedback**

More flexible deadlines for assessment, reflecting the project nature of the unit.

##### **Recommendation**

Work with individual students to set a custom timetable for each student that at times may not reflect term dates.

## Unit Learning Outcomes

### **On successful completion of this unit, you will be able to:**

1. Apply a systems engineering process in the context of mobile application development, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice
2. Demonstrate professional standards of software development, including technical skills, documentation, software quality assurance, cyber security best practices, risk mitigation strategies, and ethics
3. Plan and manage the software development project, particularly the scheduling of time and resources and the generation of supporting documentation
4. Work collaboratively as part of a productive team
5. Communicate effectively by using written and oral presentation and understanding the needs of various stakeholders
6. Critically review individual and team performance, along with identifying areas for improvement.

The Australian Computer Society (ACS), the professional association for Australia's ICT sector, recognises the Skills Framework for the Information Age (SFIA). SFIA is adopted by organisations, governments, and individuals in many countries and provides a widely used and consistent definition of ICT skills. SFIA is increasingly being used when developing job descriptions and role profiles. ACS members can use the tool [MySFIA](#) to build a skills profile.

This unit contributes to the following workplace skills as defined by [SFIA 8](#) (the SFIA code is included):

- Requirements definition and management (REQM)
- Programming/software development (PROG)
- Software design (SWDN)
- Database design (DBDS)
- Data modelling and design (DTAN)
- Systems integration and build (SINT)
- Configuration management (CFMG)
- Testing (TEST)
- Research (RSCH)
- User experience evaluation (USEV)
- Application support (ASUP)
- System installation and removal (HSIN)
- Systems and software life cycle engineering (SLEN)
- Information security (SCTY)

## Alignment of Learning Outcomes, Assessment and Graduate Attributes

 N/A Level	 Introductory Level	 Intermediate Level	 Graduate Level	 Professional Level	 Advanced Level
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### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Written Assessment - 15%	•		•			
2 - Written Assessment - 10%			•	•		
3 - Presentation and Written Assessment - 25%		•			•	
4 - Practical and Written Assessment - 40%		•			•	
5 - Written Assessment - 10%				•		•

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
1 - Knowledge	◦	◦			◦	
2 - Communication	◦		◦	◦	◦	◦
3 - Cognitive, technical and creative skills	◦	◦			◦	
4 - Research	◦					◦
5 - Self-management	◦	◦	◦	◦		
6 - Ethical and Professional Responsibility				◦		◦
7 - Leadership				◦		◦
8 - Aboriginal and Torres Strait Islander Cultures						

## Textbooks and Resources

### Textbooks

**There are no required textbooks.**

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Android studio (latest version)
- Zoom (both microphone and webcam capability)
- Visual Studio Code (latest version)
- Gradle (latest version)
- MySQL Database Server or SQLite database

## Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)  
For further information, see the Assessment Tasks.

## Teaching Contacts

**Salahuddin Azad** Unit Coordinator  
[s.azad@cqu.edu.au](mailto:s.azad@cqu.edu.au)

## Schedule

### Week 1 - 06 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Software Engineering	Chapter 1 <ul style="list-style-type: none"><li>• Section 1.1 What is Software Engineering?</li><li>• Section 1.2 Software Engineering Life-cycle</li><li>• Section 1.4 The Object Model</li></ul>	<ul style="list-style-type: none"><li>• Form project group, identify and discuss project topic</li></ul>

### Week 2 - 13 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Object Oriented Software Engineering	Chapter 2 <ul style="list-style-type: none"><li>• Section 2.1 Software Development Methods</li><li>• Section 2.2 Requirement Engineering</li><li>• Section 2.3 Software Architecture</li></ul>	<ul style="list-style-type: none"><li>• Finalize project topic and scope</li><li>• Work on project proposal</li></ul>

### Week 3 - 20 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Use Case Analysis and Modeling	Chapter 2 Section 2.4 Use Case Modeling	<ul style="list-style-type: none"><li>• Finalize project proposal</li><li>• Submit project proposal</li></ul> <p><b>Project Proposal</b> Due: Week 3 Friday (24 Mar 2023) 11:45 pm AEST</p>

**Week 4 - 27 Mar 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Use Case Analysis and Modeling	Continue Chapter 2 Section 2.4 Use Case Modeling	Work on: <ul style="list-style-type: none"><li>• detailed user stories,</li><li>• user interfaces,</li><li>• data structures,</li><li>• database schema,</li><li>• software architecture,</li><li>• platforms/tools/frameworks,</li><li>• test plan, and</li><li>• project tracking tool</li></ul>

**Week 5 - 03 Apr 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Use Case Analysis and Modeling	Chapter 2 <ul style="list-style-type: none"><li>• Focus on design and class diagrams</li><li>• Focus on software testing (2.6 Test-driven implementation)</li></ul>	<ul style="list-style-type: none"><li>• Submit Progress Report 1</li></ul>

**Vacation Week - 10 Apr 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Enjoy the break.		<b>Progress Report 1</b> Due: Vacation Week Tuesday (11 Apr 2023) 11:45 pm AEST

**Week 6 - 17 Apr 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Modeling and System Specification	Chapter 3 Section 3.1 What is a system? Section 3.2 Notation for System Specification	<ul style="list-style-type: none"><li>• Setup and configure platforms/frameworks/runtime environments</li><li>• Design and create database</li><li>• Commence prototype development</li><li>• Create user interface mockups</li><li>• Create API stubs</li><li>• Track project progress</li></ul>

**Week 7 - 24 Apr 2023**

Module/Topic	Chapter	Events and Submissions/Topic
		<ul style="list-style-type: none"><li>• Submit Progress Report 2</li></ul> <b>Progress Report 2</b> Due: Week 7 Friday (28 Apr 2023) 11:45 pm AEST

**Week 8 - 01 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
Future Trends	Chapter 9 Section 9.4 Software-as-a-Service (SaaS) Section 9.5 End user software development	<ul style="list-style-type: none"><li>• Work on prototype improvement</li><li>• Test the prototype after each cycle</li><li>• Receive customer feedback</li><li>• Add, drop or modify user stories/features, if needed</li><li>• Track project progress</li></ul>

**Week 9 - 08 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
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- Demonstrate the current prototype in the class
- Submit Prototype Demonstration Stage 1 update report

### **Prototype Demonstration Stage 1**

Due: Week 9 Friday (12 May 2023)  
11:45 pm AEST

#### **Week 10 - 15 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
		<ul style="list-style-type: none"> <li>• Work on prototype improvement</li> <li>• Test the prototype after each cycle</li> <li>• Receive customer feedback</li> <li>• Add, drop or modify user stories/features, if needed</li> <li>• Track project progress</li> </ul>

#### **Week 11 - 22 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
		<ul style="list-style-type: none"> <li>• Demonstrate the current prototype in the class</li> <li>• Submit Prototype Demonstration Stage 2 update report</li> <li>• Start developing the presentation</li> </ul>
		<b>Prototype Demonstration Stage 2</b> Due: Week 11 Friday (26 May 2023) 11:45 pm AEST

#### **Week 12 - 29 May 2023**

Module/Topic	Chapter	Events and Submissions/Topic
		<ul style="list-style-type: none"> <li>• Complete mobile app development</li> <li>• Test the mobile app</li> <li>• Perform user acceptance test</li> <li>• Complete presentation development and practice</li> </ul>

#### **Review/Exam Week - 05 Jun 2023**

Module/Topic	Chapter	Events and Submissions/Topic
		<ul style="list-style-type: none"> <li>• Deliver public presentation to demonstrate the final project outcomes</li> </ul>
		<b>Public Presentation and Demonstration of Final Project Outcomes</b> Due: Review/Exam Week Monday (5 June 2023) 9:00 am AEST

#### **Exam Week - 12 Jun 2023**

Module/Topic	Chapter	Events and Submissions/Topic
This unit does not have any examination.		

## Term Specific Information

Contact information for Dr Salahuddin Azad: Email: s.azad@cqu.edu.au; Office: Level 6, 120 Spencer Street, Melbourne Vic 3000; P +61 3 9616 0680 | X 50680.

If you have any queries, please email me and I will get back to you within one business day or so. For an individual discussion, please ring me during business hours (or leave a message if I am not in) and I will return your call as soon as possible.

## Assessment Tasks

### 1 Project Proposal

#### Assessment Type

Written Assessment

#### Task Description

This is a **group** assessment. In this assessment, you are required to develop a project proposal for the development of a mobile application. The mobile application can be a native, or hybrid app. You should come up with a original or semi-original idea for a mobile application, which should have some business value.

The project proposal should be written into a document including the following 5 components or sections:

1. Project background
2. Project objective
3. High-level user requirements
4. Hardware and software requirements
5. Risk management and quality assurance plan

The detail specification of this assessment will be provided on the Moodle unit website.

#### Assessment Due Date

Week 3 Friday (24 Mar 2023) 11:45 pm AEST

The assessment must be submitted to Moodle by the due date and time.

#### Return Date to Students

Week 5 Thursday (6 Apr 2023)

The feedback will be returned within two weeks of the submission due date.

#### Weighting

10%

#### Assessment Criteria

The assessment criteria will be provided on the Moodle unit website.

#### Referencing Style

- [Harvard \(author-date\)](#)

#### Submission

Online Group

#### Submission Instructions

You must upload your project proposal as a Microsoft Word document which should include all components or sections outlined in the assessment specification. All group members must submit the same copy of the assignment. The report must clearly indicate the details of each member of the group (Student ID and Full name).

#### Learning Outcomes Assessed

- Plan and manage the software development project, particularly the scheduling of time and resources and the generation of supporting documentation
- Work collaboratively as part of a productive team

### 2 Progress Report 1

#### Assessment Type

Written Assessment

#### Task Description

This is a **group** assessment, however, individuals may receive different scores based on their contributions.

In this assessment, you are required to report progress on the following 8 items:

1. Detailed user stories
2. Wireframes of all user interfaces
3. Major data structures
4. Database schema
5. Software architecture illustrating all components



6. Platforms/languages/tools/frameworks
7. Test plan (should include user acceptance test)
8. Project tracking tool

The detail specification of this assessment will be provided on the Moodle unit website.

**Assessment Due Date**

Vacation Week Tuesday (11 Apr 2023) 11:45 pm AEST

The assessment must be submitted to Moodle by the due date and time.

**Return Date to Students**

Week 7 Friday (28 Apr 2023)

The feedback will be returned within two weeks of the submission due date.

**Weighting**

15%

**Assessment Criteria**

The assessment criteria will be provided on the Moodle unit website.

**Referencing Style**

- [Harvard \(author-date\)](#)

**Submission**

Online Group

**Submission Instructions**

You must upload your progress report as a Microsoft Word document which should include all components or sections outlined in the assessment specification. All group members must submit the same copy of the assignment. The report must clearly indicate the details of each member of the group (Student ID and Full name).

**Learning Outcomes Assessed**

- Apply a systems engineering process in the context of mobile application development, including requirement analysis, application software design, algorithm design, coding and debugging, software testing, and software project management, informed by research into best practice
- Plan and manage the software development project, particularly the scheduling of time and resources and the generation of supporting documentation

## 3 Progress Report 2

**Assessment Type**

Written Assessment

**Task Description**

This is a **group** assessment, however, individuals may receive different scores based on their contributions.

In this assessment, you are required to report your progress on the following 4 items:

1. Setup and configuration of platforms/frameworks/runtime environments
2. Database design and creation
3. Creation of user interface mockups on the client-side
4. Creation of API stubs on the server-side

A copy of the prototype source code must be maintained in a GitHub repository and the link to the repository must be included in the report. You are also required to show the evidence of tracking the progress of your project using a project tracking tool (e.g., Jira).

The detail specification of this assessment will be provided on the Moodle unit website.

**Assessment Due Date**

Week 7 Friday (28 Apr 2023) 11:45 pm AEST

The assessment must be submitted to Moodle by the due date and time.

**Return Date to Students**

Week 9 Friday (12 May 2023)

The feedback will be returned within two weeks of the submission due date.

**Weighting**

10%

## Assessment Criteria

The assessment criteria will be provided on the Moodle unit website.

## Referencing Style

- [Harvard \(author-date\)](#)

## Submission

Online Group

## Submission Instructions

You must upload your progress report as a Microsoft Word document which should include all components or sections outlined in the assessment specification. All group members must submit the same copy of the assignment. The report must clearly indicate the details of each member of the group (Student ID and Full name).

## Learning Outcomes Assessed

- Work collaboratively as part of a productive team
- Critically review individual and team performance, along with identifying areas for improvement.

# 4 Demonstrations of Prototype

## Assessment Type

Practical and Written Assessment

## Task Description

This is a **group** assessment, however, individuals may receive different scores based on their contributions.

For this assessment, you will demonstrate the current prototype of your mobile app in the class as well as submit a brief update report on the progress. Demonstration of the prototype and submission of the update report will be done in two stages. The **Stage 1** demonstration and submission will be accomplished in **Week 9** and the **Stage 2** demonstration and submission will be accomplished in **Week 11**. Each stage carries **20 marks**.

In each stage of demonstration, you will run the current prototype of your mobile app in a lab computer/your personal computer/your mobile device to demonstrate the user stories/interfaces/features/business logic that have been fully or partially implemented during the current progress period.

In each update report, you will provide a brief update on the following items for the current progress period:

1. User stories/interfaces/features/business logic implemented (provide screenshots)
2. Test results for the user stories/interfaces/features/business logic (provide screenshots and annotations)
3. Errors/problems with the implemented user stories/interfaces/features/business logic (provide screenshots, if possible).
4. User stories or other features introduced (if any)
5. User stories or other features dropped or modified (if any)

A copy of the prototype source code must be maintained in a GitHub repository and the link to the repository must be included in the report. You are also required to show the evidence of tracking the progress of your project using a project tracking tool (e.g., Jira).

The detail specification of this assessment will be provided on the Moodle unit website.

**Please note:** This assessment task is selected to be included in your course-wide portfolio. The outcomes/artifacts of this assessment must be uploaded to Portfolium (<https://portfolium.com/activity>) by the submission due date in addition to your submission to Moodle for marking.

## Assessment Due Date

Stage 1 update report must be submitted by Week 9 Friday (12 May 2023) 11:45 pm AEST. Stage 2 update report must be submitted by Week 11 Friday (26 May 2023) 11:45 pm AEST.

## Return Date to Students

The feedback will be returned within two weeks of the corresponding submission due dates.

## Weighting

40%

## Assessment Criteria

The assessment criteria will be provided on the Moodle unit website.

## Referencing Style

- [Harvard \(author-date\)](#)

## Submission

Online Group

## Submission Instructions

You must upload your update report as a Microsoft Word document. All group members must submit the same copy of the assignment.

## Learning Outcomes Assessed

- Demonstrate professional standards of software development, including technical skills, documentation, software quality assurance, cyber security best practices, risk mitigation strategies, and ethics
- Communicate effectively by using written and oral presentation and understanding the needs of various stakeholders

# 5 Public Presentation and Demonstration of Final Project Outcomes

## Assessment Type

Presentation and Written Assessment

## Task Description

This is a **group** assessment. In this assessment, each group is required to present their final project outcomes in a public presentation. Each member of a group **MUST** take part in the presentation. In general, all team members will receive the same mark in this assessment. However, if performance varies significantly across team members, individual marks can be awarded.

The presentation will cover:

1. Demonstration of a fully running Mobile App
2. Presentation of the final project outcomes

Each group will have **15-20 minutes** to present the above items to the plenary.

With (1) above, it is advised that each group must install their mobile app on their mobile devices prior to the delivery of the presentation. The mobile app must be demonstrated during the presentation.

With (2) above, each group must also present all aspects of their mobile application development project covering the project background, objective, user stories, software architecture, database design, platforms/tools/frameworks, test results (including user acceptance test), and lessons learnt. *You also need to present a brief security assessment of your app.*

The presentation session will be held on Monday Review/Exam Week. The Head of Course or Unit Coordinator will schedule the time of presentation. You will have to make yourself available for the whole day on the day of presentation.

The detail specification of this assessment will be provided on the Moodle unit website.

**Please note:** This assessment task is selected to be included in your course-wide portfolio. The outcomes/artifacts of this assessment must be uploaded to Portfolium (<https://portfolium.com/activity>) by the submission due date in addition to your submission to Moodle for marking.

## Assessment Due Date

Review/Exam Week Monday (5 June 2023) 9:00 am AEST

The assignment must be submitted to Moodle by the above time and date.

## Return Date to Students

The feedback will be returned on the day of certification of grades.

## Weighting

25%

## Assessment Criteria

The assessment criteria will be provided on the Moodle unit website.

## Referencing Style

- [Harvard \(author-date\)](#)

## Submission

Online Group

### Submission Instructions

The submission should contain your presentation file, fully running mobile app, and a link to the GitHub repository of your source code. All group members must submit the same copy of the assignment.

### Learning Outcomes Assessed

- Demonstrate professional standards of software development, including technical skills, documentation, software quality assurance, cyber security best practices, risk mitigation strategies, and ethics
- Communicate effectively by using written and oral presentation and understanding the needs of various stakeholders

## Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

### Where can I get assistance?

For academic advice and guidance, the [Academic Learning Centre \(ALC\)](#) can support you in becoming confident in completing assessments with integrity and of high standard.

### What can you do to act with integrity?

**Be Honest**

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

**Seek Help**

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

**Produce Original Work**

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem