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| Section | 2A |
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| Subject | Opp lab |
| Task | 6 |
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**Question 1**

Create a Python program to model a university course registration system: 1. Implement a parent class called Course with attributes course\_code and course\_name. Include a method display\_info to display the course code and name. 2. Create two child classes UndergraduateCourse and GraduateCourse inheriting from Course. Each should have an additional attribute (year\_level for UndergraduateCourse and research\_area for GraduateCourse) and a method additional\_info to display the additional attributes. 3. Implement a function register\_course that takes user input to register a course. The user should input the course code, course name, year level (for undergraduate courses), or research area (for graduate courses).

**solution**

class Course:

    def \_\_init\_\_(self, code, name):

*self*.code = code

*self*.name = name

    def show\_info(self):

        return f"Course Code: {*self*.code}, Course Name: {*self*.name}"

class UndergraduateCourse(Course):

    def \_\_init\_\_(self, code, name, year):

        super().\_\_init\_\_(code, name)

*self*.year = year

    def show\_info(self):

        return super().show\_info() + f", Year Level: {*self*.year}"

class GraduateCourse(Course):

    def \_\_init\_\_(self, code, name, research):

        super().\_\_init\_\_(code, name)

*self*.research = research

    def show\_info(self):

        return super().show\_info() + f", Research Area: {*self*.research}"

def register\_course():

    course\_type = input("Choose course type - (1) Undergraduate (2) Graduate: ")

    code = input("Enter course code: ")

    name = input("Enter course name: ")

    if course\_type == '1':

        year = input("Enter year level: ")

        course = UndergraduateCourse(code, name, year)

    elif course\_type == '2':

        research = input("Enter research area: ")

        course = GraduateCourse(code, name, research)

    else:

        print("Invalid course type selected.")

        return

    print("\nRegistered Course Details:")

    print(course.show\_info())

register\_course()