



## Introduction to Programming

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**Assignment 9** You are required to answer both questions.

### Question 1: Get Values from a List Based on Index(5 Marks)

#### Objective

To develop a Python function that retrieves values from a predefined list using an index provided by the user, ensuring robust exception handling for invalid inputs or operations.

#### Requirements:

A user must fetch a value from a list by providing its index. However, the program must account for the following scenarios:

1. **IndexError**: If the index is out of range, an **IndexError** should be caught, and an appropriate message should be displayed.
  2. **ValueError**: If the user provides a non-integer input for the index, a **ValueError** should be raised and handled.
  3. The function should only accept valid indices and provide meaningful feedback for incorrect inputs.
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### Question 2: Online Course Enrollment System (15 Marks)

#### Objective

To develop an online course enrollment system. The system will allow students to enroll in courses, but the program must ensure that the user input (email, course code chosen and number of courses) is valid.

#### Requirements:

1. The user is asked to input their name, email, and the number of courses they wish to enroll in.
2. Then the user is asked to choose the course from the list of courses offered.
3. The program should handle the below exceptions:
  - **TypeError**: If the number of courses is not a valid integer, raise a **TypeError** with the message: "Please enter a valid number for courses."
  - **ValueError**: If the number of courses is less than or equal to zero, raise a **ValueError** with the message: "You must enroll in at least one course."



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4. **Custom Exception for validating email:** Used to ensure that the email validation specifically checks for the domain @stclaircollege.ca and to check if the email contains only alphanumeric characters before the @. Program should raise an error if the email is not valid.
5. **Custom Exception for invalid course code:** Validate the course code chosen for enrollment, if the course code selected by the student is not offered raise an error message.
6. After successful enrollment, display a message showing the student's name, email, and the number of courses they are enrolled in.
7. Handle any **unexpected exceptions** that may occur and display a generic error message.

### Steps to be implemented in the program:

1. Write a function enroll\_student that takes user inputs and processes the enrollment.
2. Create a dictionary of courses offered by the organization (course code as key and course name as value), for example:

```
offered_courses = {  
    "MAD102": "Introduction to Computer Science",  
    "MAD103": "Data Fundamentals ",  
    "MAD100": "Java Programming 1",  
    "MIT211": "System configuration",  
    "MAD155": "Introduction to Linux"  
}
```

3. The program should handle **TypeError** and **ValueError** for invalid numbers of courses they like to choose
4. The program needs to confirm if the student's selected course code is from one of the organization's courses. The application should notify the user to choose an appropriate course code from the available course list if the user inputs an invalid course code.
5. Validate the email ID to ensure that the email validation specifically checks for the domain @stclaircollege.ca and allows only alphanumeric characters before the @.
6. The maximum number of Courses a student can enroll is 4.
7. Ensure all exception handling is robust and print the student's enrollment information after successful input.



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### Sample Input & Output (For valid Input):

Welcome to the Online Course Enrollment System!

Enter your name: Praveen

Enter your email: [panirudh@stclaircollege.ca](mailto:panirudh@stclaircollege.ca)

Enter the number of courses you wish to enroll in (max 4): 2

Available Courses:

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MAD102: Introduction to Computer Science

MAD103: Data Fundamentals

MAD100: Java Programming 1

MIT211: System configuration

MAD155: Introduction to Linux

Enter the course code for course 1: MAD111

Invalid course code. Please choose a valid course code.

Enter the course code for course 1: MAD102

Enter the course code for course 2: MAD103

Enrollment Successful!

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Student Name: Praveen

Student Email: [panirudh@stclaircollege.ca](mailto:panirudh@stclaircollege.ca)

Number of Courses: 2

Courses Enrolled:

- Introduction to Computer Science

- Data Fundamentals

Enrollment process is completed. Thank You!

### Submission:

- **You must submit a .py file.**
- **Mention the question number in the comments.**
- **Do your own work!** A mark of 0 will be assigned to the entire assignment for work that is not your own and will be handled as per the **Code of Student Rights and Responsibilities**
- **All work must be run and validated to ensure that it is free of errors.** Any assignment that is submitted showing errors that prevent it from running will receive a mark of 0.
- **Only apply the knowledge that we have learned in class to this point.** Answers using any syntax or knowledge that we have not covered yet will receive a mark of 0 for that question.
- **Any assignment submitted past the posted due date and time will receive a mark of 0.** Do not wait until the last minute to complete and submit your work.