

# JAVA PROGRAMMING COURSE (SWE2023)

## FALL SEMESTER 2022

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### Assignment 4

This assignment consists of 1 task. Guidelines for submission format are given at the end of the assignment file.

#### Task Description

At SKKU, we need your help to build an application form program for getting new students. There are already existing programs for this one but they are not reliable. There are many people who randomly fill out the application form with bad inputs. Therefore, we need your help to build a new application form program that is robust against improper inputs.

Here is the simple default UI for the new application form program (we build it based on old programs, it would be great if you redesign it by keeping the components):



The screenshot shows a web application window titled "SKKU New Students Enrollment". On the left is a vertical image of a university campus with cherry blossoms and a building. The main content area is titled "SKKU Application Form" and includes the Sungkyunkwan University logo. The form contains the following fields and sections:

- Applicant Name:
- Birth Date:
- Email:
- Degree:
- Attended university (for Graduates):
- GPA (for Graduates):
- Personal Statement: A text area with a placeholder "At least 100 words..."
- Home Address:
- A blue "Submit Application" button at the bottom right.

1. Perfectly filled application form for undergraduates:



The screenshot shows the SKKU Application Form for undergraduates. The form is titled "SKKU Application Form" and includes the SKKU logo. The applicant's name is "Firuz Juraev", birth date is "06/05/1995", email is "f.i.juraev@gmail.com", and degree is "Bachelor". The "Attended university (for Graduates)" and "GPA (for Graduates)" fields are empty. The "Personal Statement" section contains a pre-filled text about the applicant's studies. The "Home Address" is "10, Eoulmadang-ro 2-gil, Mapo-gu, Seoul". A "Submit Application" button is at the bottom.

SKKU New Students Enrollment

## SKKU Application Form

Applicant Name: Firuz Juraev

Birth Date: 06/05/1995

Email: f.i.juraev@gmail.com

Degree: Bachelor

Attended university (for Graduates):

GPA (for Graduates):

Personal Statement

*During my studies at university, I have obtained strong theoretical and practical knowledge from courses like Artificial Intelligence, Data Structure, Database Application & Design, Probability and Statistics, Computer Algorithms and other vital courses that university*

Home Address: 10, Eoulmadang-ro 2-gil, Mapo-gu, Seoul

Submit Application

\* For bachelor applicants, the attended university and GPA should be empty.

2. Perfectly filled application form for graduates:



The screenshot shows the SKKU Application Form for graduates. The form is titled "SKKU Application Form" and includes the SKKU logo. The applicant's name is "Firuz Juraev", birth date is "06/05/1995", email is "f.i.juraev@gmail.com", and degree is "PhD". The "Attended university (for Graduates)" is "Inha University" and the "GPA (for Graduates)" is "4.20". The "Personal Statement" section contains a pre-filled text about the applicant's studies. The "Home Address" is "10, Eoulmadang-ro 2-gil, Mapo-gu, Seoul". A "Submit Application" button is at the bottom.

SKKU New Students Enrollment

## SKKU Application Form

Applicant Name: Firuz Juraev

Birth Date: 06/05/1995

Email: f.i.juraev@gmail.com

Degree: PhD

Attended university (for Graduates): Inha University

GPA (for Graduates): 4.20

Personal Statement

*During my studies at university, I have obtained strong theoretical and practical knowledge from courses like Artificial Intelligence, Data Structure, Database Application & Design, Probability and Statistics, Computer Algorithms and other vital courses that university*

Home Address: 10, Eoulmadang-ro 2-gil, Mapo-gu, Seoul

Submit Application

For graduate applicants, the attended university and GPA should not be empty.

### 3. Wrongly filled forms:

If the user inserts wrong inputs and presses submit button, show **one** popup message with all problems list:

The screenshot shows the 'SKKU Application Form' window. The form fields are: Applicant Name (Firuz), Birth Date (1995), Email (fjuraev.com), Degree (PhD), Attended university (for Graduates), GPA (for Graduates), Personal Statement (I will be good student.), and Home Address (Seoul). A 'Submit Application' button is at the bottom right. A validation error popup is displayed in the foreground, listing six problems:

- 1. You forgot to write your name or surname.
- 2. Birth date must be in '06/06/1995' format
- 3. Email must be in example@some.some
- 4. For graduate, you have to enter previous university and GPA
- 5. Your Personal Statement must be at least 100 words
- 6. Your address must be in 'number, street, district, city' format

The popup has an 'OK' button at the bottom.

After fixing some of the problems, the user can submit again. If there are still remaining problems, after pressing submit button show the popup message again with the list of problems:

The screenshot shows the 'SKKU Application Form' window after some fixes. The form fields are: Applicant Name (Firuz Juraev), Birth Date (1995), Email (fjuraev.com), Degree (PhD), Attended university (for Graduates), GPA (for Graduates), Personal Statement (I will be good student.), and Home Address (10, Eoulmadang-ro 2-gil, Mapo-gu, Seoul). A 'Submit Application' button is at the bottom right. A validation error popup is displayed in the foreground, listing four remaining problems:

- 1. Birth date must be in '06/06/1995' format
- 2. Email must be in example@some.some
- 3. For graduate, you have to enter previous university and GPA
- 4. Your Personal Statement must be at least 100 words

The popup has an 'OK' button at the bottom.

After fixing all problems and the user presses the submit button, the application form should be cleared from inserted inputs and your program must show a success popup:

The image shows a screenshot of a web application titled "SKKU New Students Enrollment". The main form is titled "SKKU Application Form" and features the Sungkyunkwan University logo. The form includes the following fields: Applicant Name, Birth Date, Email, Degree, Attended university (for Graduates), GPA (for Graduates), a Personal Statement section with a note "At least 100 words...", and Home Address. A blue "Submit Application" button is at the bottom right. A "Success Message" dialog box is overlaid on the bottom left, displaying an information icon, the text "Successfully Submitted", and an "OK" button. The background of the form features a photograph of a cherry blossom tree in front of a university building.

### Hints for checking errors:

- Case 0: The user might enter only first name or last name, in that case, show this message on the dialog box: "You forgot to write your name or surname".
- Case 1: There might be empty fields, for example, a message in the dialog box: "You forgot to fill the name text field, Please fill it".
- Case 2: Improper birth date format, for example, message in the dialog box: "Birthdate must be in '06/06/1995' format".
- Case 3: Improper email. If the email does not contain an email format show the following message in the dialog box: "Email must be in example@some.some". Hint: you can check proper email input by checking the existence of '@' and dot in the email.
- Case 4: Improper phone number, if the phone number contains any character or symbol (e.g. @, -, \$, %, etc), show the user error in the dialog box: "Proper format for a phone number is '10 2158-0222' ". (phone number is not added in the example, but you must add it to your program).
- Case 5, if a user is a graduate applicant and he does not insert previous attended university and GPA, show this message on the dialog box: "For graduate, you have to enter previous university and GPA".

- Case 6: improper GPA, GPA should be between 0 and 4.5 and if users enter the wrong GPA, show this message on the dialog box: "GPA must be between 0 and 4.5".
- Case 7: Improper input for Personal Statement. If the user enters less than 100 words, show the message in the dialog box: "Your Personal Statement must be at least 100 words".

There might be other cases as well. Please be creative and try to add more fields and cover more error cases.

**Requirements:**

1. Beautiful GUI (try to make it more beautiful than the default UI)
2. Add at least 2 extra questions (phone number, experience, etc)
3. Strong exception handling (handle all possible exceptions)
4. Good coding style (like naming variables with meaningful names, dividing code into one-task functions)
5. Comments (meaningful comments) - "// this is variable" is not good comment

**Note:** Used icons and images are provided.

**Submission format:** Submit **your project folder as one zip folder**

**Name of zip file:** {student ID}\_{Student name}\_assignment4.zip

**Example:** 2020712837\_Frank\_Thomas\_assignment4.zip

**Important: Plagiarism is strictly prohibited. If there is any plagiarism found in the code, you will be given an "F" for the assignment evaluation.**

**If you have any questions about assignment 4, you can ask in the discussion section of the week or contact the TAs directly.**

**Good luck!**