

LAB211 Assignment

Type:
Code:
LOC:

Short Assignment
J1.S.P105
50

Title

Input and display student and teacher information

Background

Understanding inheritance in object-oriented programming.

Program Specifications

- Write a program that allows users to enter n teachers and n students with the following information
- Class Person
 - Attributes: ID, full name, phone number, year of birth, major
 - Methods:
 - A constructor method without parameter: set all integer attributes is 0, and all string attributes are "".
 - InputAll() method allow user input value of all attributes in format. If data input is invalid, the program show error message.
 - ID is a 6 digits
 - Fullname is alphabet and blanks
 - Phone number is 12 digits
 - Year of birth must be before current year
 - Major is a string no more than 30 characters
- Class Teacher: it's parent class is Person
 - Attributes: Year in the profession, contract type, salary coefficient
 - Methods:
 - A constructor method without parameter: set all integer attributes is 0, and all string attributes are "".
 - InputAll() method allow user input value of all attributes in format. If data input is invalid, the program show error message "Data input is invalid" immediately.
 - ID is a 6 digits
 - Fullname is alphabet and blanks
 - Phone number is 12 digits
 - Year of birth must be before current year
 - Major is a string no more than 30 characters
 - Year in the profession is number from 0 to lower than age
 - Contract type is 'Long' or 'Short' value
 - Salary coefficient is number from 0
- Class Student: it's parent class is Person
 - Attributes: Year of admission, entrance English score
 - Methods:
 - A constructor method without parameter: set all integer attributes is 0, and all string attributes are "".

- InputAll() method allow user input value of all attributes in format. If data input is invalid, the program show error message “Data input is invalid” immediately.
 - ID is a 6 digits
 - Fullname is alphabet and blanks
 - Phone number is 12 digits
 - Year of birth must be before current year
 - Major is a string no more than 30 characters
 - Year of admission is between birth year and current year
 - Entrance English score is from 0 to 100.

Function details:

1. Enter n teachers
2. Print n teachers entered by year in the profession descending
3. Enter n students
4. Print n students entered by increasing year of admission
5. Enter the name of the person you want to search for and print information about that person including ID, full name, phone number, year of birth, major by increasing year of birth descending

Examples: (the blue text is data input)

```

*** Information Management ***
1. Teacher
2. Student
3. Person
4. Exit
You choose: 1
*** Teacher Management ***
1. Input
2. Print
3. Exit
You choose: 1
ID: abc
Data input is invalid
ID: 100265
Fullname: Nguyen Van An
Phone number: 098312345098
Year of birth: 1980
Major: Software Engineer
Year in the profession: 5
Contract type: Long
Salary coefficient: 4.0
*** Teacher Management ***
1. Input
2. Print
3. Exit
You choose: 2
# - ID - Fullname - Phone number - Year of birth - Major - Year in the
profession - Contract type - Salary coefficient
1 - 100265 - Nguyen Van An - 098312345098 - 1980 - Software Engineer - 5 - Long
- 4.0
*** Teacher Management ***
1. Input
2. Print
3. Exit

```

```
You choose: 3
*** Information Management ***
1. Teacher
2. Student
3. Person
4. Exit
You choose: 2
*** Student Management ***
1. Input
2. Print
3. Exit
You choose: 1
ID: 200265
Fullname: Tran Thanh Truc 1
Data input is invalid
Fullname: Tran Thanh Truc
Phone number: 098215438098
Year of birth: 2000
Major: Software Engineer
Year of admission: 2022
Entrance English score: 70
*** Student Management ***
1. Input
2. Print
3. Exit
You choose: 2
# - ID - Fullname - Phone number - Year of birth - Major - Year of admission -
Entrance English score
1 - 200265 - Tran Thanh Truc - 098215438098 - 2000 - Software Engineer - 2022 -
70
*** Student Management ***
1. Input
2. Print
3. Exit
You choose: 3
*** Information Management ***
1. Teacher
2. Student
3. Person
4. Exit
You choose: 3
*** Person Management ***
1. Search
2. Print all
3. Exit
You choose: 1
Name: Thanh An
Result: not found
*** Person Management ***
1. Search
2. Print all
3. Exit
You choose: 1
Name: Thanh Truc
Result:
# - ID - Fullname - Phone number - Year of birth - Major
```

```
1 - 200265 - Tran Thanh Truc - 098215438098 - 2000 - Software Engineer
*** Person Management ***
1. Search
2. Print all
3. Exit
You choose: 2
# - ID - Fullname - Phone number - Year of birth - Major
1 - 100265 - Nguyen Van An - 098312345098 - 1980 - Software Engineer
2 - 200265 - Tran Thanh Truc - 098215438098 - 2000 - Software Engineer
*** Person Management ***
1. Search
2. Print all
3. Exit
You choose: 3
*** Information Management ***
1. Teacher
2. Student
3. Person
4. Exit
You choose: 4
BYE AND SEE YOU NEXT TIME
```

Expectation of User interface:

No specific UI required. The program should run in the console.

Guidelines

None

Suggestion:

Use simple and clear code.