

# The\_Real\_Project03.py File Structure

The The\_Real\_Project03.py file consists of the following 3 parts:

Default classes and  
functions

User Stories

main()

## Part 1: Default classes and functions

- **class Individual:** information about each individual: name, sex, birt, deat, famc, fams.

```
class Individual:
    def __init__(self, name, sex, birt, deat, famc, fams):
        self.name = name
        self.sex = sex
        self.birt = birt
        self.deat = deat
        self.famc = famc
        self.fams = fams
```

- **class Family:** information about each family: marr, husb, wife, chil, div.

```
class Family:
    def __init__(self, marr, husb, wife, chil, div):
        self.marr = marr
        self.husb = husb
        self.wife = wife
        self.chil = chil
        self.div = div
```

- **class DateObject:** parses GED date format "1 Feb 1990" and store as date object, contains 2 functions:
  - **def snake\_year\_month\_day():** will return date in snake case like 1990-2-1, will return string 'NA' is the date is invalid.
  - **def setNA():** will set the date object to 'NA', so when you do a snake\_year\_month\_day() it will return 'NA'.
- **def age\_calculator(later\_date, earlier\_date):** takes 2 date objects, returns difference in years, so if age\_calculator(later\_date, earlier\_date) returns a negative number like -25, u know it's incorrect.
- **class ErrorCollector:** append the error string for each US here, `ErrorCollector.error_list.append(f"ERROR: ERROR: US01:.....was set to NA.")`

## Part 2: User Stories

I have already marked out everyone's territory here, please add your user story here and follow the format to make it beautiful and easy to read, such as:

```
'''Sprint 2'''
'''User Story 03: Birth Before Death'''
def birth_before_death(individual_dict):
    for id, value in individual_dict.items():
        if value.birt.snake_year_month_day() != 'NA' and value.deat.snake_year_month_day() != 'NA':
            if age_calculator(value.deat, value.birt) <= 0:
                ErrorCollector.error_list.append(f"ERROR: US03: {id} has a birthday {value.birt.snake_year_month_day()}")
                value.birt.setNA()
```

### Part 3: main()

There are 2 main dictionary here:

- **individual\_dict**
- **family\_dict**

Each of them contains a key value pair, key is the id like "@I1@", "@F1@", and the value is the Individual or Family objects mentioned above.

The User Story area: Please add your user stories that need to run here, and append the # US behind for easy debugging(so you will know where the bug is).

```
""""User Stories Goes Here""""
'''Hanqing Sprint 1: US01, US02'''
# dates_before_current_date(individual_dict, family_dict) # US01
# birth_before_marriage(individual_dict, family_dict) # US02
'''Hanqing Sprint 2: US03, US08'''
birth_before_death(individual_dict) # US03
birth_before_marriage_of_parents(individual_dict, family_dict) # US08

'''Jigar Sprint 1: US04, US06'''
# marriage_before_divorce(family_dict) # US04
# divorce_before_death(family_dict, individual_dict) # US06

'''Haoran Sprint 1: US11, US12'''
# no_bigamy(family_dict, individual_dict) # US11
# parents_not_too_old(family_dict, individual_dict) # US12
```

A correct output should look like this:

ID	Name	Gender	Birthday	Age	Alive	Death	Child	Spouse
@I1@	Normal /Sprint2/	M	1994-1-1	26	True	NA	@F2@	@F1@
@I2@	NormalDad /Sprint2/	M	1969-1-1	51	True	NA	NA	@F2@
@I3@	NormalMom /Sprint2/	F	1970-1-1	50	True	NA	NA	@F2@
@I4@	BirthBefMarrPar /Sprint2/	F	NA	NA	NA	NA	@F3@	@F1@
@I5@	ErrDad /Sprint2/	M	1969-1-1	51	True	NA	NA	@F3@
@I6@	ErrMom /Sprint2/	F	1970-1-1	50	True	NA	NA	@F3@
@I7@	BirthBefDeath /Sprint2/	M	NA	NA	False	1995-1-1	@F2@	NA

ID	Married	Divorced	Husband ID	Husband Name	Wife ID	Wife Name	Children
@F1@	NA	NA	@I1@	Normal /Sprint2/	@I4@	BirthBefMarrPar /Sprint2/	NA
@F2@	NA	NA	@I2@	NormalDad /Sprint2/	@I3@	NormalMom /Sprint2/	{ '@I7@', '@I1@' }
@F3@	1999-1-1	NA	@I5@	ErrDad /Sprint2/	@I6@	ErrMom /Sprint2/	{ '@I4@' }

ERRORR: US03: @I7@ has a birthday 1999-1-1 that occurred after death date 1995-1-1. Birthday was set to NA.

ERRORR: US08: @I4@ has a birth date 1995-1-1 that's earlier than parents' wedding date 1999-1-1. Birthday was set to NA.