Teastu – narzędzie ułatwiające komunikację między studentami a wykładowcami.
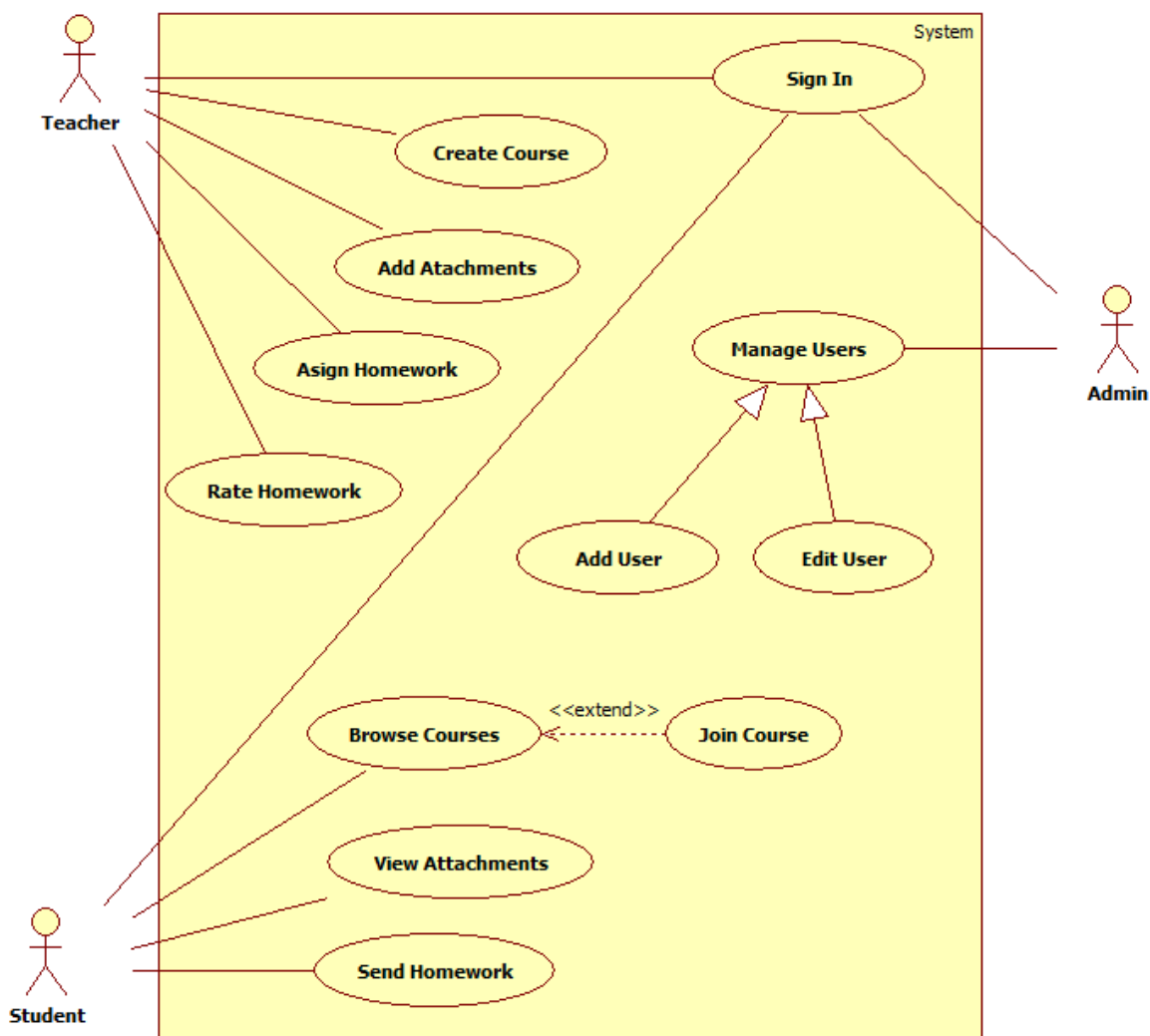
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Dziedzina problemu: Ułatwienie komunikacji między studentami a wykładowcami za pomocą narzędzia umożliwiającego udostępnianie materiałów z zajęć oraz obsługę prac domowych.
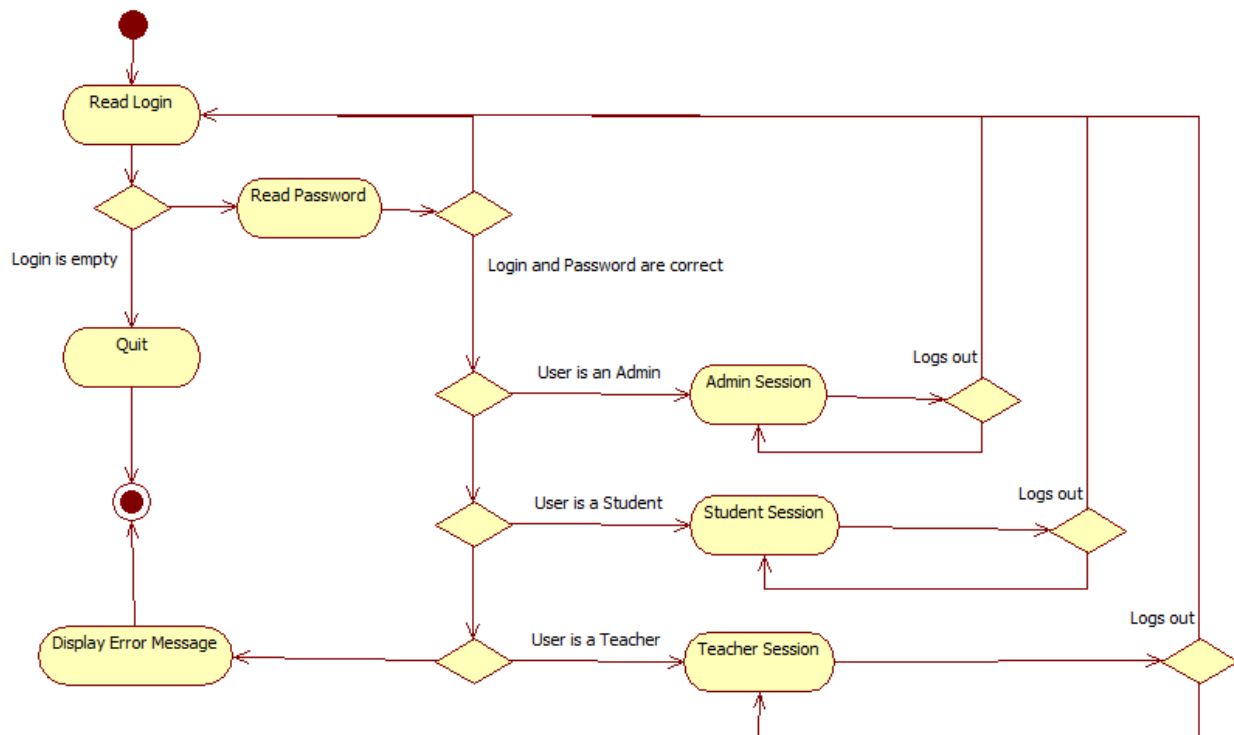
Koncepcja początkowa: Postanowiliśmy stworzyć aplikację konsolową podobną do „Wirtualnego Kampusa".

Analiza:

Na powyższym diagramie umieściliśmy funkcjonalności, które naszym zdaniem system powinien udostępniać, aby spełnić wymagania użytkowników.

Projektowanie:

Read Login

Read Password

Login is empty

Quit

Login and Password are correct

User is an Admin → Admin Session → Logs out

Display Error Message

User is a Student → Student Session → Logs out

User is a Teacher → Teacher Session → Logs out

Powyższy diagram przedstawia ogólną pętlę wykonywaną przez program, z wyszczególnionym systemem logowania.

Implementacja:

Course
-creator: Teacher
-name: String
-department: Department
-homeworks: ArrayList<String>
-homeworkSubmissions: Map<String, Map<Student, String>>
-homeworkGrades: Map<String, Map<Student, String>>
-attachments: ArrayList<Map<String, String>>
<<create>>+Course(name: String, department: Department, creator: Teacher)
+getName(): String
+getDepartment(): Department
+getCreator(): Teacher
+addHomework(homework: String): boolean
+getHomeworks(): ArrayList<String>
+submitHomework(homework: String, student: Student, answer: String): void
+getSubmissions(homework: String, student: Student): String
+gradeHomework(homework: String, student: Student, grade: String): void
+getGrade(homework: String, student: Student): String
+getAttachments(): ArrayList<Map<String, String>>
+addAttachment(attachment: String, content: String): void
+getHomeworkSubmissions(): Map<String, Map<Student, String>>

Campus
-instance: Campus
-users: ArrayList<User>
-courses: ArrayList<Course>
<<create>>-Campus()
+getInstance(): Campus
+userLogin(login: String, password: String): User
+createStudent(login: String, password: String): void
+createAdmin(login: String, password: String): void
+createTeacher(login: String, password: String, dept: Department): void
+createCourse(creator: Teacher, name: String, dept: Department): void
+getDepartmentCourses(dept: Department): ArrayList<Course>
+userExists(name: String): boolean
+addStudentDepartment(name: String, dept: Department): boolean

User
#login: String
#password: String
#courses: ArrayList<Course>
#userType: UserType
<<create>>+User(login: String, password: String, userType: UserType)
+tryLogin(login: String, password: String): boolean
+joinCourse(course: Course): void
+getCourses(): ArrayList<Course>
+getName(): String
+courseExists(name: String): boolean
+getUserType(): UserType

<<enumeration>> UserType
+admin
+student
+teacher

Teacher
-department: Department
<<create>>+Teacher(login: String, password: String, userType: UserType, department: Department)
+getDepartment(): Department
+joinCourse(course: Course): void

Student
-departments: HashSet<Department>
<<create>>+Student(login: String, password: String, userType: UserType)
+addDepartment(dept: Department): boolean
+getDepartments(): HashSet<Department>

Admin
<<create>>+Admin(login: String, password: String, userType: UserType)

<<enumeration>> Department
+none
+buisness
+health
+history
+biology
+psychology
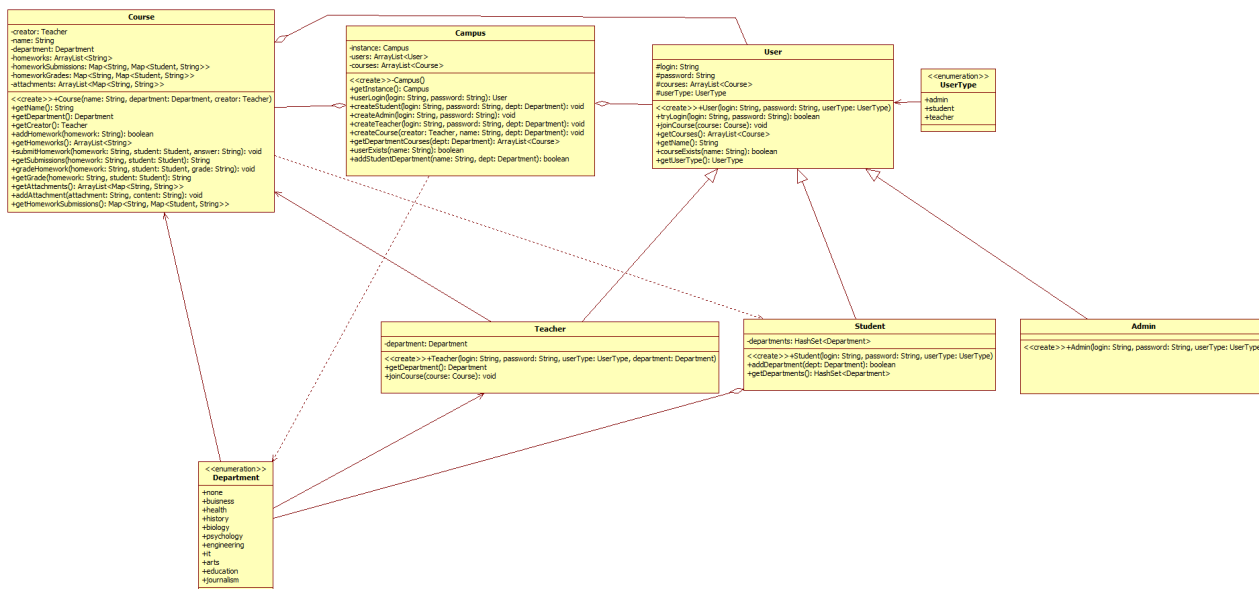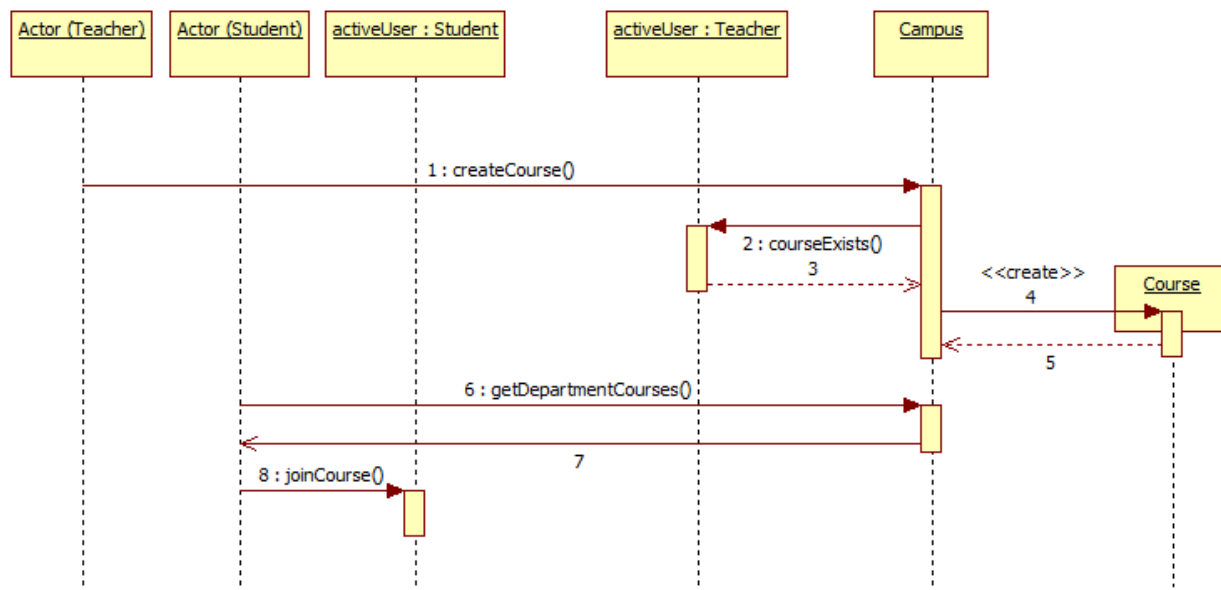+engineering
+it
+arts
+education
+journalism

Diagram klas.

Przykładowy diagram sekwencji, przedstawiający jeden z możliwych przebiegów utworzenia kursu przez nauczyciela i dołączenia do niego przez studenta.

Testowanie:

Logowanie jako administrator, tworzenie nowego nauczyciela oraz przypisywanie istniejącego studenta do nowego wydziału.

```
Welcome to Teastu! Please log in to begin your learning journey :D :D
Type your login (empty to exit): Admin

Type password: Admin

=== Admin Menu ===
1: Add users
2: Modify Users
Empty: Logout
1
=== Adding new User ===

Enter new user's login.
Punctuation symbols disallowed, press ENTER to go back: teachbio

Enter new user's password.
Spaces disallowed, symbols allowed are ! # $ % & * + - , . ? @ | ,
press ENTER to go back: teachbio

Choose new user's type - A for admin, S for student, T for teacher: T

Choose new user's department - none for no department.
Select department by number:
1: business
2: health
3: history
4: biology
5: psychology
6: engineering
7: it
8: arts
9: education
10: journalism
4
User created successfully.
```

```
User created successfully.


=== Admin Menu ===
1: Add users
2: Modify Users
Empty: Logout
2
=== Adding new Student Department ===


Enter modified student's login: stud1
Select department by number:
1: business
2: health
3: history
4: biology
5: psychology
6: engineering
7: it
8: arts
9: education
10: journalism
4
Student added to department successfully.
```

Testowanie tworzenia kursów przez nauczycieli, oraz dołączanie studentów do nich, przede wszystkim dla studentów należących do wielu wydziałów.

```
Type your login (empty to exit): teachbio


Type password: teachbio


=== Teacher Menu ===
1: View my courses
2: Create new course
Empty: Logout
2
Enter course name: Biology Intro
Do you want to make the course with no assigned department, available to all students? y/N



=== Teacher Menu ===
1: View my courses
2: Create new course
Empty: Logout

Are you sure you want to quit? y/N
y
Type your login (empty to exit): teach1


Type password: teach1

=== Teacher Menu ===
1: View my courses
2: Create new course
Empty: Logout
2
Enter course name: IT Intro
Do you want to make the course with no assigned department, available to all students? y/N



=== Teacher Menu ===
```

```
Type your login (empty to exit): stud1


Type password: stud1


=== Student Menu ===
1:  View already joined courses
2:  View courses available for joining
Empty: Logout
2


=== Courses You Can Join ===
INDEX   Name    Creator Department
0   Biology Intro   teachbio    biology
1   IT Intro    teach1  it
Type the index of the course which you want to join (Empty to go back)
0
You've successfully joined the course!


=== Courses You Can Join ===
INDEX   Name    Creator Department
0   IT Intro    teach1  it
Type the index of the course which you want to join (Empty to go back)
0
You've successfully joined the course!


=== Courses You Can Join ===
INDEX   Name    Creator Department
Type the index of the course which you want to join (Empty to go back)
```

```
=== Student Menu ===
1:  View already joined courses
2:  View courses available for joining
Empty: Logout
1


=== Your Joined Courses ===
INDEX   Name    Creator Department
0   Biology Intro   teachbio    biology
1   IT Intro    teach1  it
Type the index of the course whose menu you want to open (Empty to go back)
```

Dodawanie prac domowych oraz ich ocenianie

```
=== Your Created Courses ===
INDEX    Name     Department
0    IT Intro    it
Type the index of the course whose menu you want to open (Empty to go back)
0


=== Course Menu: IT Intro ===
1: Homework session
2: Attachments session
Empty: Go back
1


=== Homework Session ===
1: View homeworks
2: Add homework
3: Grade homeworks
Empty: Go back
2
Enter homework description: Build a spaceship from scratch
Homework added successfully.
```

```
=== Course Menu: IT Intro ===
1: Homework session
2: Attachments session
Empty: Go back
1


=== Homework Session ===
Homework List:
1. Build a spaceship from scratch [Not submitted]
Type homework number to submit or ENTER to go back:
1
Enter your answer:
<Schematics and photos of the built spaceship>
Submission received!
```

```
=== Your Created Courses ===
INDEX    Name     Department
0    IT Intro     it
Type the index of the course whose menu you want to open (Empty to go back)
0


=== Course Menu: IT Intro ===
1: Homework session
2: Attachments session
Empty: Go back
1


=== Homework Session ===
1: View homeworks
2: Add homework
3: Grade homeworks
Empty: Go back
3
Choose the homework you want to grade:
1. Build a spaceship from scratch
1
List of submitted homeworks:
1. stud1 - Answer: <Schematics and photos of the built spaceship> - Grade: No grade.
Pick the student number to grade the homework:
1
Grade:
Excellent
Grade saved!
```