TrakPal

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Abstract

TrakPal is a web application made to help college students stay on path and clear out the fluff allowing them to focus solely on the most optimal path to their career goals. Users are able to input their grades, compare their GPA to industry standards, and get career recommendations based on their academic performance. The goal is to bridge the gap between academics and career planning by providing grade tracking, career guidance, and insights based on academic performance.

Tools

Programming Languages: Java,Python, SQL, HTML

Frameworks: Flask, SQLAlchemy, Bootstrap

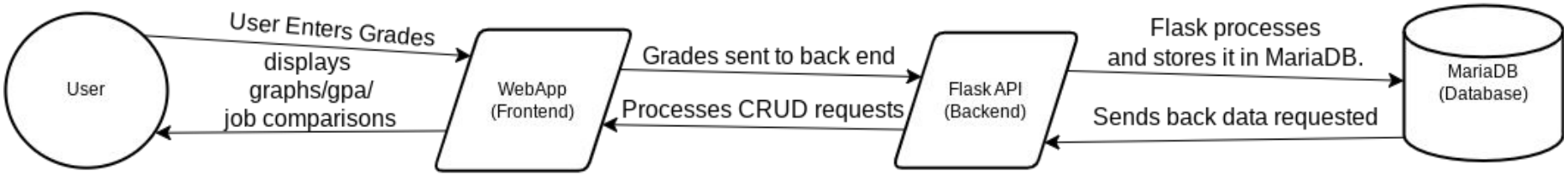
Database: MariaDB

Version Control: GitHub

Project Management: GitHub

API Tools: Postman

Application Logic



Database Schema: Users

Field	Type	NULL	Key	Default	Extra
user_id	int(11)	NO	PRI	NULL	auto_increment
name	varchar(100)	NO		NULL	
email	varchar(255)	NO	UNI	NULL	
password_hash	varchar(255)	NO		NULL	
major	varchar(100)	YES		NULL	

Database Schema: Courses

Field	Type	NULL	Key	Default	Extra
course_id	int(11)	NO	PRI	NULL	auto_increment
course_name	varchar(255)	NO		NULL	
course_code	varchar(50)	NO	UNI	NULL	
credits	int(11)	NO		NULL	
difficulty_level	enum(‘Easy’,’Medium’,Hard’)	YES		Medium	

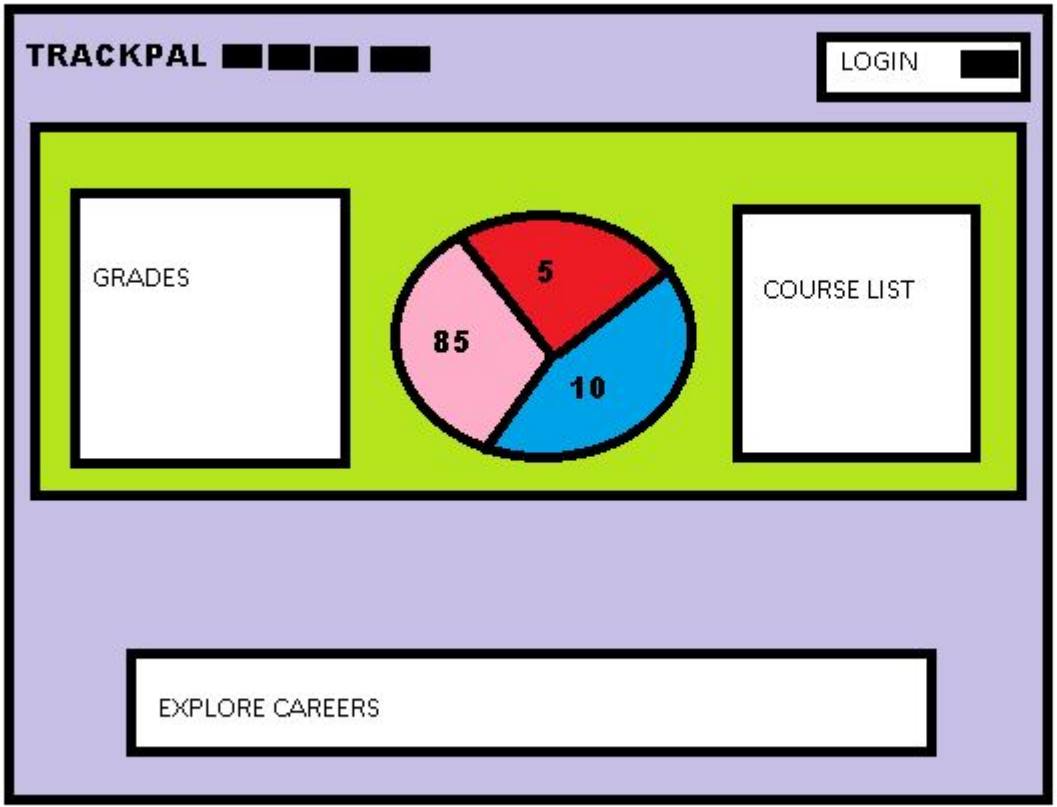
Database Schema: Grades

Field	Type	NULL	Key	Default	Extra
grade_id	int(11)	NO	PRI	NULL	auto_increment
user_id	int(11)	YES	MUL	NULL	
course_id	int(11)	YES	MUL	NULL	
grade	char(2)	NO		NULL	
semester	varchar(20)	YES		NULL	
year	int(11)	YES		NULL	

Database Schema: Career Recommendations

Field	Type	NULL	Key	Default	Extra
career_id	int(11)	NO	PRI	NULL	auto_increment
major	varchar(100)	NO		NULL	
min_gpa	decimal(3.2)	NO		NULL	
career_name	varchar(255)	NO		NULL	

Projected UI (subject to change)



Tentative Schedule

Week 1-2: Set up Flask & MariaDB, create database schema

Week 3-6: Implement user authentication & CRUD for grades

Week 7-9: Build career-matching logic

Week 10-11: Develop front-end UI

Week 12-13: Testing & bug fixes

Week 13-15: Final integration & documentation

Datasets

User-inputted grades

Predefined career data & job GPA requirements

Brooklyn College Courses Database

Use Cases 1: Tracking Grades

Input: User enters grades.

Process: TrakPal stores grades and updates GPA.

Output: GPA is displayed with career insights.

Use Case 2: Career Recommendation

Input: User selects career interest.

Process: TrakPal compares GPA to industry standards.

Output: TrakPal suggests career options and required courses.

Use Case 3: GPA Visualization & Job Comparison

Input: User views career recommendations.

Process: TrakPal generates a graph comparing their GPA to job requirements.

Output: Visual representation of career readiness.