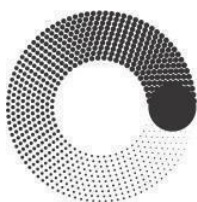


**ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ АВТОНОМНОЕ
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ**



**МОСКОВСКИЙ ПОЛИТЕХНИЧЕСКИЙ
УНИВЕРСИТЕТ**

**Факультет информационных технологий
Кафедра Информатики и информационных технологий**

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**профиль «Программное обеспечение игровой компьютерной
индустрии»**

ЛАБАРАТОРНАЯ РАБОТА № 8

Дисциплина: BackEnd-разработка

Выполнил: студент группы 221-3710

Бахвалов А.А

Дата, подпись _____
20.09.2024_ _____

(Дата)

(Подпись)

Проверила: _____

(Оценка)

Замечания:

Дата, подпись _____

(Дата)

(Подпись)

Листинг

Чтобы запустить сервер в консоли напишите `uvicorn main:app --reload`
Чтобы выйти `ctrl+c`

Main.py

```
from fastapi import FastAPI
```

```
from routes import router
```

```
app = FastAPI()
```

```
app.include_router(router)
```

```
@app.get("/")
```

```
def read_root():
```

```
    return {"message": "Hello, World!"}
```

Routes.py

```
from fastapi import APIRouter, Query, Form, Header, Cookie
```

```
from fastapi.responses import JSONResponse, FileResponse, RedirectResponse
```

```
from models import User, RegisterRequest
```

```
from typing import Optional, List
```

```
router = APIRouter()
```

```
@router.get("/greet/{name}")
```

```
def greet_user(name: str):
```

```
    return {"message": f"Hello, {name}!"}
```

```
@router.get("/search")
```

```
def search(query: str = Query(...)):
```

```
    return {"message": f"You searched for: {query}"}
```

```
@router.get("/json")
```

```
def get_json():
```

```
    return {"name": "Your Name", "age": 25, "hobbies": ["coding", "reading", "gaming"]}
```

```
@router.get("/file")
```

```
def get_file():
```

```
    file_path = "example.txt"
```

```
    with open(file_path, "w") as f:
```

```
        f.write("ALBEBRA.")
```

```
    return FileResponse(file_path, media_type="text/plain", filename="example.txt")
```

```
@router.get("/redirect")
```

```
def redirect():
```

```
    return RedirectResponse(url="/")
```

```
@router.get("/headers")
```

```
def get_headers(headers: dict = Header(...)):
```

```
    return {"headers": headers}
```

```
@router.get("/set-cookie")
```

```
def set_cookie(response: JSONResponse, username: str = "default_name"):
```

```
    response = JSONResponse(content={"message": "Cookie set"})
```

```
    response.set_cookie(key="username", value=username)
```

```
    return response
```

```
@router.get("/get-cookie")
```

```
def get_cookie(username: Optional[str] = Cookie(None)):
```

```
    if username:
```

```
        return {"username": username}
```

```
    return {"message": "No cookie found"}
```

```
@router.post("/login")
```

```
def login(username: str = Form(...), password: str = Form(...)):
```

```
    return {"message": f"Welcome, {username}!"}
```

```
@router.post("/register")
```

```

def register(user: RegisterRequest):

    return {"message": f"User {user.username} registered successfully!"}


users = [

    User(id=1, username="ANDREY", email="ANDREY@gmail.com", password="123"),

    User(id=2, username="ADRENALIN", email="ADRENALIN@yandex.ru", password="123"),

]


@router.get("/users", response_model=List[User])

def get_users():

    return users


@router.get("/users/{id}", response_model=User)

def get_user_by_id(id: int):

    user = next((user for user in users if user.id == id), None)

    if user:

        return user

    return JSONResponse(content={"error": "User not found"}, status_code=404)

```

Models.py

```

from pydantic import BaseModel

```

```
class User(BaseModel):
```

```
    id: int
```

```
    username: str
```

```
    email: str
```

```
    password: str
```

```
class RegisterRequest(BaseModel):
```

```
    username: str
```

```
    email: str
```

```
    password: str
```

utils.py

```
from jose import jwt
```

```
from datetime import datetime, timedelta
```

```
SECRET_KEY = "your_secret_key"
```

```
ALGORITHM = "HS256"
```

```
def create_access_token(data: dict):
```

```
    to_encode = data.copy()
```

```
    expire = datetime.utcnow() + timedelta(minutes=30)
```

```
    to_encode.update({"exp": expire})
```

```
return jwt.encode(to_encode, SECRET_KEY, algorithm=ALGORITHM)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

INFO:      127.0.0.1:58351 - "GET /set-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58360 - "GET /get-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58365 - "GET /get-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58367 - "GET /get-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58367 - "GET /set-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58373 - "GET /get-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58437 - "POST /register HTTP/1.1" 200 OK
INFO:      127.0.0.1:58440 - "POST /login HTTP/1.1" 200 OK
INFO:      127.0.0.1:58440 - "POST /login HTTP/1.1" 200 OK
INFO:      127.0.0.1:58450 - "GET /users HTTP/1.1" 200 OK
INFO:      127.0.0.1:58450 - "GET /users HTTP/1.1" 200 OK
WARNING:    StatReload detected changes in 'routes.py'. Reloading...
INFO:      Shutting down
INFO:      Waiting for application shutdown.
INFO:      Application shutdown complete.
INFO:      Finished server process [344]
INFO:      Started server process [23180]
INFO:      Waiting for application startup.
INFO:      Application startup complete.
INFO:      127.0.0.1:58470 - "GET /users/2 HTTP/1.1" 200 OK
INFO:      127.0.0.1:58470 - "GET /users/2 HTTP/1.1" 200 OK
INFO:      127.0.0.1:58474 - "GET / HTTP/1.1" 200 OK
WARNING:    StatReload detected changes in 'routes.py'. Reloading...
INFO:      Shutting down
INFO:      Waiting for application shutdown.
INFO:      Application shutdown complete.
INFO:      Finished server process [23180]
INFO:      Started server process [16896]
INFO:      Waiting for application startup.
INFO:      Application startup complete.
WARNING:    StatReload detected changes in 'routes.py'. Reloading...
INFO:      Shutting down
INFO:      Waiting for application shutdown.
INFO:      Application shutdown complete.
INFO:      Finished server process [16896]
INFO:      Started server process [22132]
INFO:      Waiting for application startup.
INFO:      Application startup complete.
WARNING:    StatReload detected changes in 'routes.py'. Reloading...
INFO:      Shutting down
INFO:      Waiting for application shutdown.
INFO:      Application shutdown complete.
INFO:      Finished server process [22132]
INFO:      Started server process [21140]
INFO:      Waiting for application startup.
INFO:      Application startup complete.
INFO:      127.0.0.1:58537 - "GET /set-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58537 - "GET /set-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58537 - "GET /set-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58537 - "GET /set-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58541 - "GET /get-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58541 - "GET /get-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58541 - "GET /get-cookie HTTP/1.1" 200 OK
INFO:      127.0.0.1:58558 - "GET /set-cookie?username=SAY_MYNAME HTTP/1.1" 200 OK
INFO:      127.0.0.1:58559 - "GET /get-cookie HTTP/1.1" 200 OK
```

Как видно на консоли все переходы по ссылкам происходили удачно