

UNIVERZITET U SARAJEVU ELEKTROTEHNIČKI FAKULTET U SARAJEVU ODSJEK ZA RAČUNARSTVO I INFORMATIKU NAPREDNE WEB TEHNOLOGIJE



PROJEKTNA DOKUMENTACIJA Out Of Office

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ZADATAK 1

Kratak opis aplikacije

Out Of Office je softversko rješenje koje realizuje ideju jednostavnijeg praćenja zahtjeva za odsustvom uposlenika neke kompanije. Aplikacija će u inicijalnoj implementaciji imati dvije role: admin i uposlenik. Admin će imati mogućnosti manuelnog upravljanja listom uposlenika, pregleda zahtjeva te odobravanja, odnosno poništavanja zahtjeva za odsustvom. Sa druge strane, uposlenik može da kreira zahtjev za odsustvom, otkaže ili edituje isti.

Suštinska prednost za obje role će biti mogućnost praćenja svih iskorištenih i preostalih slobodnih dana. Ovo softversko rješenje će biti funkcionalno i efikasno sa aspekta lakše i bolje organizacije godišnjih odmora, odsustva sa projekata, bolovanja, porodiljskih, smrtnih slučajeva i slično.

Specifikacija funkcionalnih zahtjeva

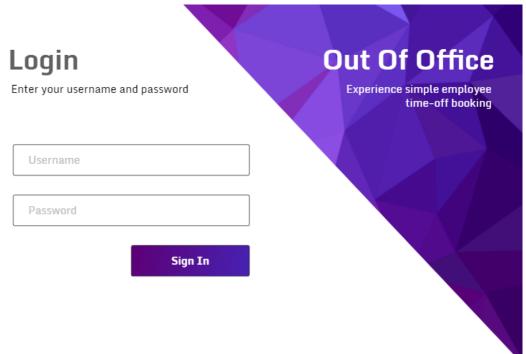
Prioriteti: 0 - core prioritet 1 - side prioritet

	FUNKCIONALNI ZAHTJEV - ADMIN	OPIS FUNKCIONALNIH ZAHTJEVA	Prioritet
1.	Login	Za pristup aplikaciji Out Of Office neophodno je unijeti validne Admin podatke.	0
2.	Pregled svih zaposlenika	Mogućnost pregleda liste zaposlenika, te filtriranje iste pretragom (eng. search).	0
3.	Pregled profila zaposlenika	Mogućnost pregleda profila zaposlenika klikom na zaposlenika iz liste zaposlenika. Profil zaposlenika sadrži sve informacije o iskorištenim i preostalim slobodnim danima.	1
4.	Pregled aktivnih zahtjeva	Pregleda aktivne liste zahtjeva za odsustvom. Admin ima mogućnosti dopuštanja ili odbijanja podnesenih zahtjeva.	0
5.	Dodavanje uposlenika u sistem	Dodavanje novih zaposlenika u sistem i kreiranje inicijalnog username-a i pw za novog zaposlenika.	1
6.	Brisanje uposlenika iz sistema	Brisanje uposlenika koji napuštaju kompaniju iz liste uposlenika.	1
7.	Odobravanje/poništavanje zahtjeva	Mogućnost prihvatanja zahtjeva određenog zaposlenika iz liste zahtjeva, odnosno poništavanja istog. U slučaju poništavanja zahtjeva adminu je omogućeno da ostavi komentar.	0
8.	Notifikacija o novom zahtjevu	Mogućnost pristizanja notifikacije pri kreiranju novog zahtjeva od strane zaposlenika.	1
9.	Unos praznika	Admin unosi u sistem sve godišnje praznike	1
10.	Ograničenje odsustva po departmentu	Unos ograničenja odsutnih zaposlenika po departmentu.	1
11.	Logout	Odjava sa profila	1

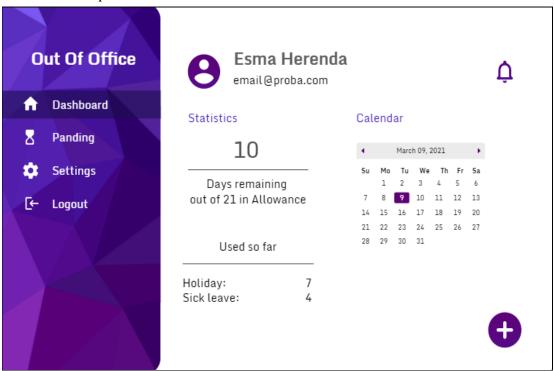
	FUNKCIONALNI ZAHTJEV - ZAPOSLENI	OPIS FUNKCIONALNIH ZAHTJEVA	Prioritet
1.	Login	Za pristup aplikaciji Out Of Office neophodno je unijeti validne podatke Zaposlenika.	0
2.	Pregled iskorištenih slobodnih dana tekuće godine	Pregled iskorištenih dana, te broja preostalih slobodnih dana iz tekuće godine.	1
3.	Odabir vjerskih praznika	Obzirom da svi zaposleni ne slave sve iste praznike, bit ce mogućnost odabira praznika koje uposlenici slave.	1
4.	Zahtjev za odsustvo	Mogućnost podnošenja zahtjeva za odsustvom u formatu željenog datuma početka i kraja, unošenja vrste odsustva i komentara uz zahtjev.	0
5.	Notifikacija o obradi zahtjeva od strane admina	Mogućnost pristizanja notifikacije pri odobravanju/poništavanju istog od strane admina.	1
6.	Notifikacija clanovima depatmenta o odobrenom odsustvu nekog člana departmenta	Kada je jednom članu departmenta odobreno odsustvo u određenom periodu, svim ostalim članovia istog departmenta stiže notifikacija.	1
7.	Notifikacija o nalodazećem prazniku	Nekoliko dana prije praznika uposlenik dobija obavještenje o nadolazećem prazniku.	1
8.	Pregled obrađenog zahtjeva	U slučaju odbijenog zahtjeva moguće je vidjeti ostavljene komentare od strane admina. Kao i eventualne komentare u slučaju odobravanja istog.	1
9.	Pregled podnesenih zahtijeva/pending	Mogućnost editovanja zahtjeva dok je još uvijek neobrađen (odnosno na čekanju) ili otkazivanje istog (eng. cancel). Status zahtjeva ima tri stanja: odobreno, odbijeno ili na čekanju.	0
10.	Editovanje korisničkih podataka	Korisnik može promijeniti svoj password jer mu inicijalni kreira admin.	1
11.	Logout	Odjava sa profila	1

Korisnički interfejsi

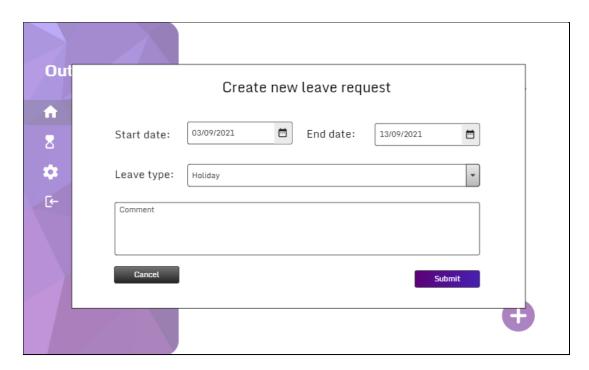
1. Login forma



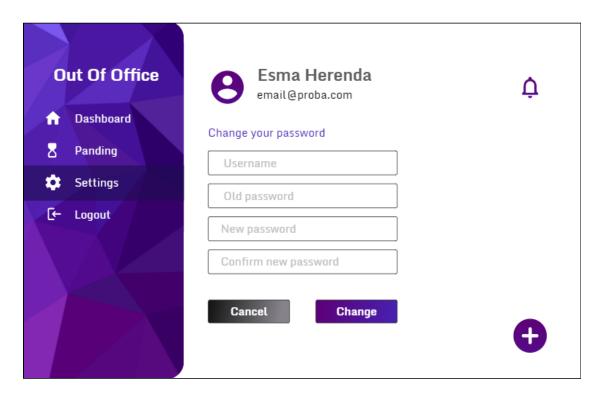
2. Dashboard zaposlenika



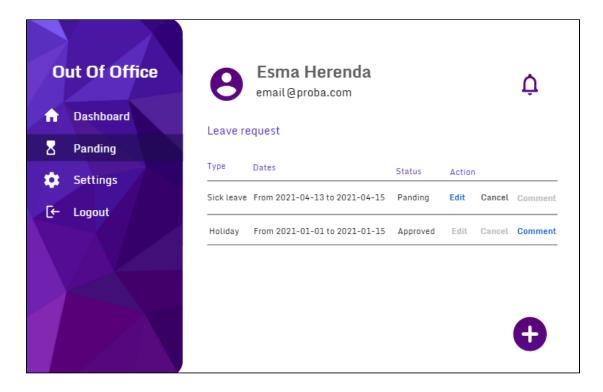
3. Zahtjev za odsustvo forma



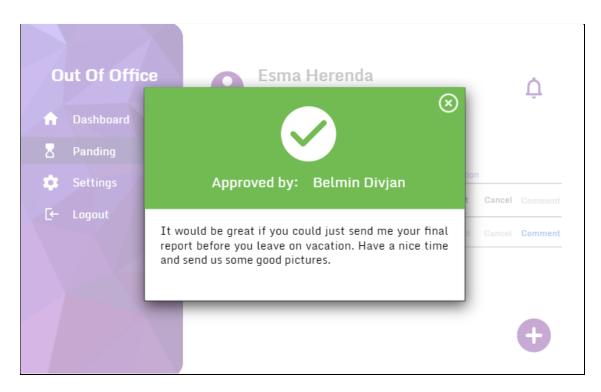
4. Editovanje korisničkih podataka



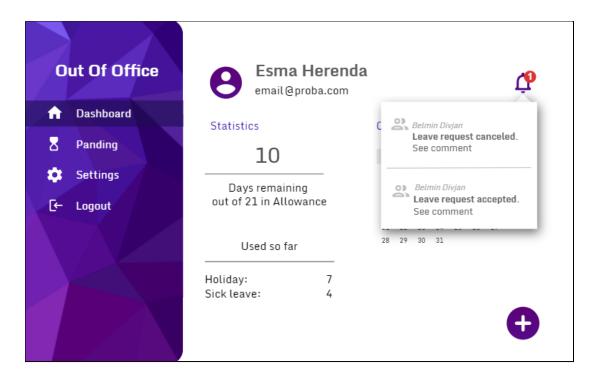
5. Pregled podnesenog zahtjeva/panding



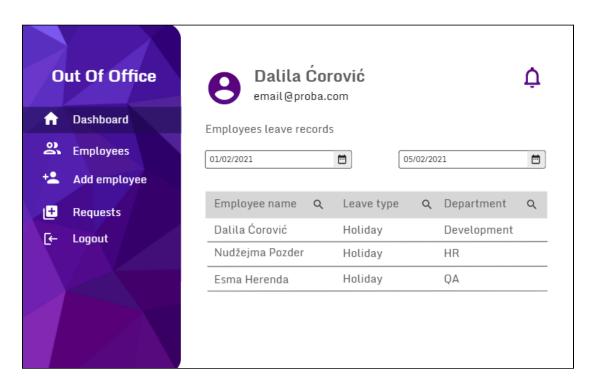
6. Pregled obrađenog zahtjeva



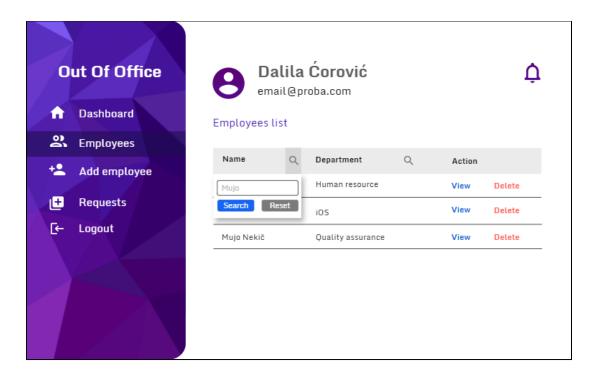
7. Notifikacija o obradi zahtjeva



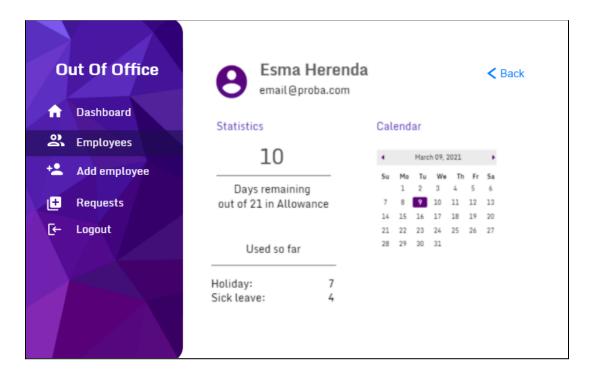
8. Dashboard admina



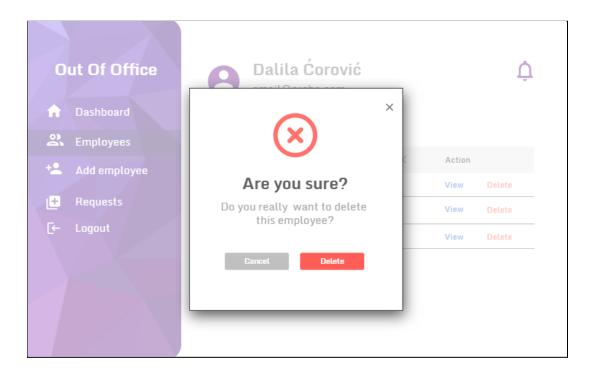
9. Pregled liste zaposlenika



10. Pregled profila zaposlenika



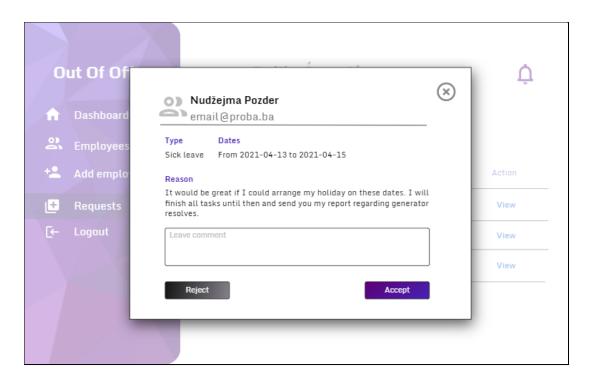
11. Brisanje zaposlenika



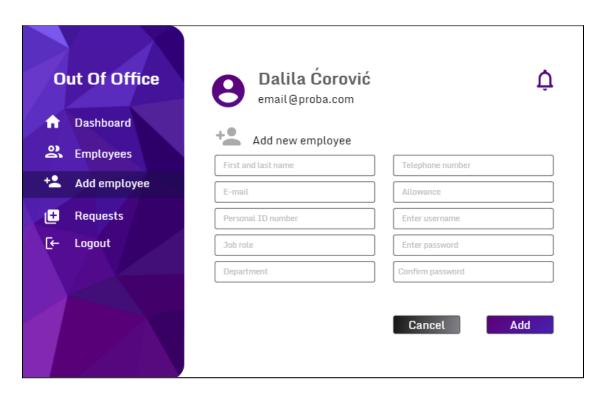
12. Pregled liste aktivnih zahtjeva - uradjeno



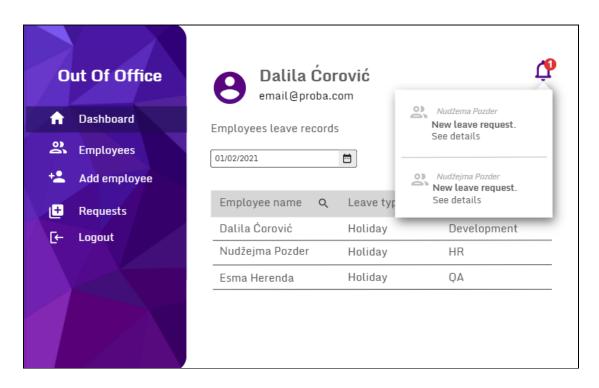
13. Pregled pojedinačnog zahtjeva



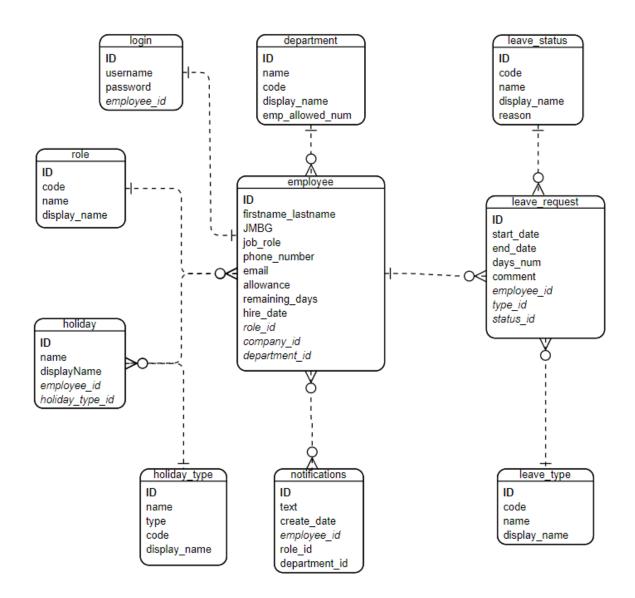
14. Dodavanje novog zaposlenika u sistem



15. Notifikacija o novom zahtjevu



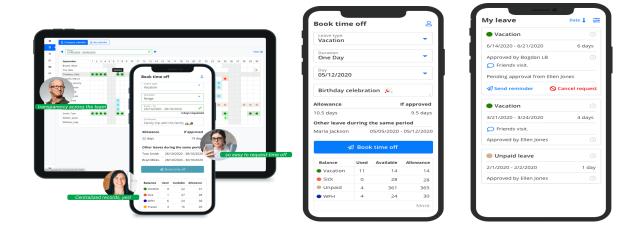
ERD diagram



Pregled sličnih rješenja

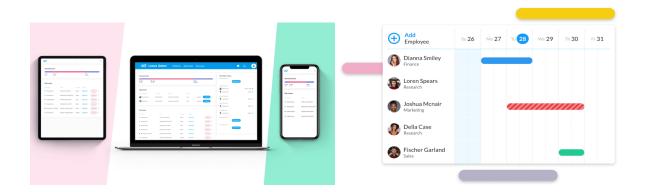
1. Aplikacija "LeaveBoard" (https://leaveboard.com/)

Aplikacija "LeaveBoard" automatizira i integrira postupak upravljanja odsustvom u sistemu koji omogućava kompanijama da učinkovito primjenjuju politike odsustva i smanjuju vrijeme i troškove povezane s produktivnošću radne snage.



2. Aplikacija "LeaveDates" (https://www.leavedates.com/)

Aplikacija koja osigurava da kompanija može nastaviti raditi bez problema kada neko od zaposlenika ima slobodne dane. Datumi odmora pomažu u planiranju i praćenju odsustva osoblja, a istovremeno smanjuju obaveze administratora.



Pored navedenih postoji još mnogo sličnih aplikacija, neke od njih su:

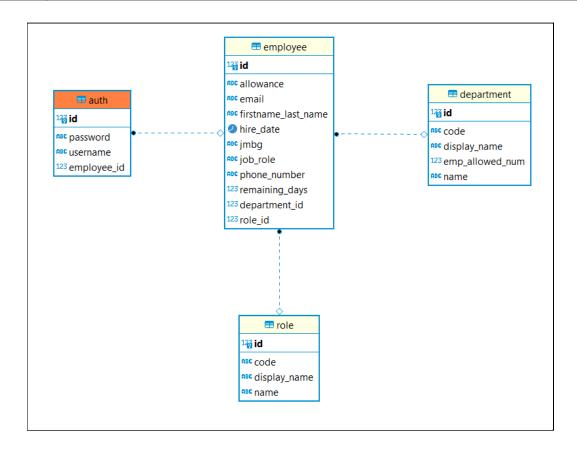
- 3. VacationTracker: https://vacationtracker.io/
- 4. Timeneye: https://www.timeneye.com/
- 5. Day off: https://day-off.app/

ZADATAK 2

Podjela funkcionalnosti na mikroservise i ERD

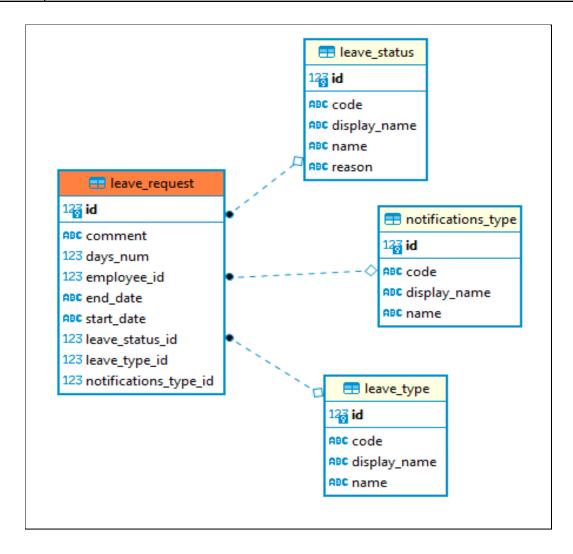
1. User MS

1.	Login i Logout
2.	Pregled svih zaposlenika - ADMIN (READ)
3.	Pregled profila zaposlenika - ADMIN (READ)
4.	Dodavanje uposlenika u sistem - ADMIN (CREATE)
5.	Brisanje uposlenika iz sistema - ADMIN (DELETE)
6.	Pregled iskorištenih slobodnih dana tekuće godine - USER (READ)
7.	Editovanje korisničkih podataka (UPDATE)



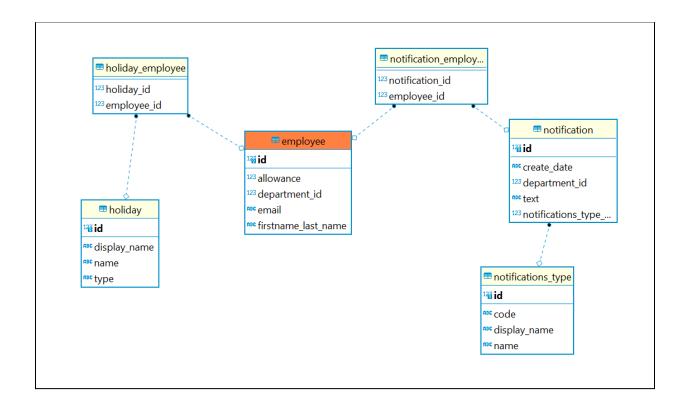
2. Leave Request MS

1.	Pregled aktivnih zahtjeva - ADMIN (READ)
2.	Odobravanje/poništavanje zahtjeva - ADMIN (UPDATE)
3.	Ograničenje odsustva po departmentu - ADMIN (CREATE)
4.	Zahtjev za odsustvom - USER (CREATE)
5.	Pregled obrađenog zahtjeva - USER (READ)
6.	Pregled /Edit/Delete podnesenih zahtijeva /pending - USER (READ, UPDATE, DELETE)



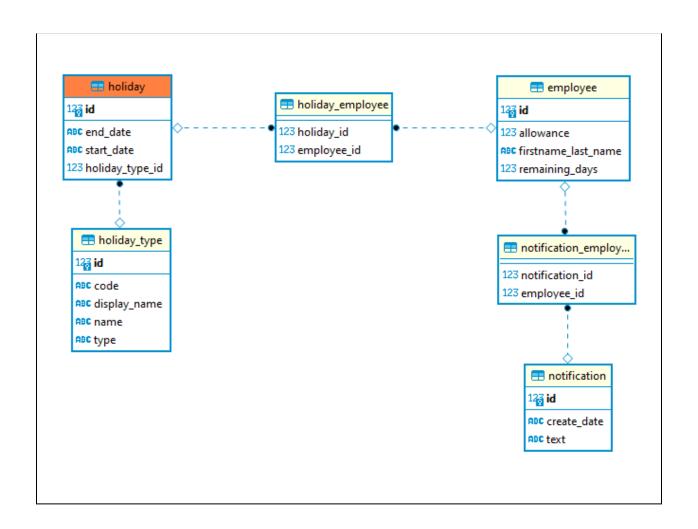
3. Notifications MS

1.	Notifikacija o novom zahtjevu - ADMIN (READ)
2.	Notifikacija o obradi zahtjeva od strane admina - USER (READ)
3.	Notifikacija o nalodazećem prazniku - USER (READ)
4.	Notifikacija clanovima depatmenta o odobrenom odsustvu nekog člana departmenta USER (READ)
5.	Dismiss notifikacije na button cancel da se ne prikazuje na profilu!
6.	Update dismiss-a ukoliko user uradi cancel na notifikaciju



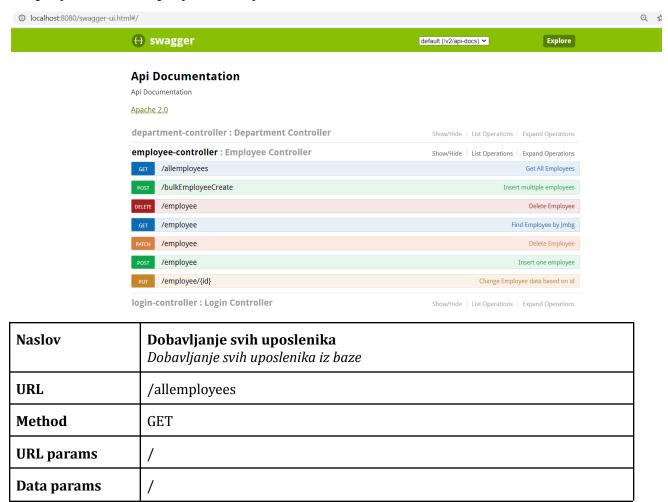
4. Holiday MS

1.	Unos praznika - ADMIN (CREATE)
2.	Odabir vjerskih praznika - USER (CREATE)
3.	Prikaz datuma praznika - USER (READ)
4.	Editovanje praznika - ADMIN (UPDATE)



ZADATAK 3

Employee MS - Employee Entity



Naslov	Brisanje Brisanje uposlenika po idu
URL	/employee
Method	DELETE
URL params	/
Data params	id

```
Success response
                                                                                         http://localhost:8080/employee?id=3
                                                                                       Request Headers
                                                                                        {
    "Accept": "application/json"
}
                                                                                       Response Body
                                                                                         3
                                                                                       Response Code
                                                                                       Response Headers
                                                                                        {
"connection": "keep-alive",
"content-type": "application/json",
"date": "Thu, 25 Mar 2021 00:13:07 GMT",
"keep-alive: "timeurt-60",
"transfer-encoding": "chunked"
}
                                                                                    } ' ' '
Error response
                                                                                     Response Body
                                                                                      {
  "status": "NOT_FOUND",
  "message": "Employee with id 100 not found",
  "error": "The is no data for given input",
  "timestamp": "2021-03-25T01:13:30.1487762+01:00"
}
                                                                                     Response Code
                                                                                       404
                                                                                      Response Headers
                                                                                       {
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Thu, 25 Mar 2021 00:13:30 GMT",
  "keep-alive": 'timeout-of-
  "transfer-encoding": "chunked"
}
```

Naslov	Dobavljanje jednog uposlenika Dobavljanje uposlenika po jmbg
URL	/employee
Method	GET
URL params	/
Data params	jmbg

```
Success response
                                                                                                         Request Headers
                                                                                                             {
    "Accept": "application/json"
                                                                                                         Response Body
                                                                                                               {
   "id": 6,
   "allowance": "21",
   "email": "email6",
   "firstnameLastName": "Dalila Ćorović",
   "hireDate": "2021-03-24T21:09:42.003536+01:00",
   "jmbg": "jmbg6",
   "jobRole": "jobRole6",
   "phoneNumber": "phoneNumber6",
   "remainingDays": 21,
   "department": {
        "id": 3,
                                                                                                                       aepartment: {
    "id": 3,
    "code": "HR",
    "displayName": "Human Resources",
    "empAllowedNum": 5,
                                                                                                                        "name": "human resources"
                                                                                                                        "id": 2,
"code": "EMPLOYEE",
                                                                                                         Response Code
                                                                                                         Response Headers
                                                                                                            {
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Thu, 25 Mar 2011 00:15:44 GMT",
  "keep-alive": Timeout-60*,
  "transfer-encoding": "chunked"
}
                                                                                                                   }
Error response
                                                                                                                    Response Body
                                                                                                                      {
    "status": "NOT_FOUND",
    "message": "Employee with jmbg 6 not found",
    "error": "The is no data for given input",
    "timestamp": "2021-03-25T01:14:38.2788628+01:00"
}
                                                                                                                    Response Code
                                                                                                                      404
                                                                                                                    Response Headers
                                                                                                                     {
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Thu, 25 Mar 2021 00:14:38 GMT",
  "keep-alive": 'timeout-60",
  "transfer-encoding': "chunked"}
```

Naslov	Promjena departmenta uposlenika Promjena departmenta uposlenika po jmgb
URL	/employee
Method	PATCH

```
URL params
Data params
                                                                            "department_code": "string",
"employee_jmbg": "string"
Success response
                                                                                  Response Body
                                                                                       "id": 4,
                                                                                          "id": 4,

"allowance": "21",

"email1": "email4",

"firstnameLastName": "Nudzejma Pozder",

"hireDate": "2021-03-24T21:09:42.003536+01:00",

"jmbg": "jmbg4",

"jobRole": "jobRole4",

"phoneNumber": "phoneNumber4",

"remainingDays": 21,

"department": {
                                                                                             "department": {
                                                                                              "id": 1,
"code": "SALES",
"displayName": "Sales",
"empAllowedNum": 5,
                                                                                               "name": "sales"
                                                                                             "role": {
                                                                                               "id": 2,
"code": "EMPLOYEE",
                                                                                  Response Code
                                                                                    200
                                                                                  Response Headers
                                                                                    {
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Thu, 25 Mar 2011 00:18:26 GMT",
  "keep-alive": "timeurt-60",
  "transfer-encoding": "chunked"
}
Error response
                                                                                   Response Body
                                                                                       {
  "status": "NOT_FOUND",
  "message": "Request was not successfull",
  "error": "Something went wrong",
  "timestamp": "2021-03-25701:18:47.0746256+01:00"
                                                                                   Response Code
                                                                                   Response Headers
                                                                                    {
  "connection": "keep-alive",
  "content-type": 'application/json',
  "date': 'Thu, 25 Mar 2021 00:18:47 GMT",
  "keep-alive': 'timeout-60',
  "transfer-encoding': "chunked"
}
```

Naslov	Kreiranje uposlenika Kreiranje novog uposlenika
URL	/employee

```
POST
Method
URL params
Data params
                                           "allowance": "string",
                                           "departmentId": 0,
                                           "email": "string",
                                           "firstnameLastName": "string",
                                           "hireDate": "2021-03-25T00:10:18.230Z",
                                           "jmbg": "string",
                                           "jobRole": "string",
                                           "phoneNumber": "string", "remainingDays": 0,
                                           "roleId": 0
                                         }
Success response
                                             Request Headers
                                               {
    "Accept": "application/json"
                                             Response Body
                                                  "id": 55,
                                                  "allowance": "21",
                                                  "mail": "email"; "stringname", "firstnameLastHame": "stringname", "hireDate": "2021-03-25T00:10:18.23Z", "jmbg": "7418529632145",
                                                  "jobRole": "stringrole",
                                                   "phoneNumber": "stringnum",
                                                   "remainingDays": 21,
                                                  "department": {
  "id": 2,
  "code": "MARKETING",
  "displayName": "Marketing",
  "empAllowedNum": 6,
                                                     "name": "marketing"
                                                   "role": {
                                                    "id": 2,
"code": "EMPLOYEE".
                                             Response Code
                                              201
                                             Response Headers
                                              {
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Thu, 25 Mar 2021 07:36:53 GMT",
  "keep-alive": "timeout-60",
  "transfer-encoding": "chunked"
}
```

```
Request URL

http://localhost:8889/employee

Request Headers

{ "Accept": "application/json" }

Response Body

{ "status": "BAD_REQUEST",
 "message": "Employee jnbbp parem is not valid. It should be string.",
 "erron": "Validation",
 "timestamp": "2021-03-25708:39:02.6705701-01:00"
}

Response Code

404

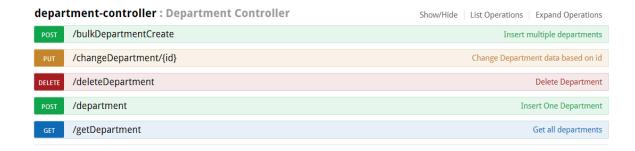
Response Headers

{ "connection": "keep-alive",
 "care": "The 25 Mar 2021 203 2500 201",
 "keep-alive": "timeout-600",
 "ransfer-encoding": "chunked"
}
```

Naslov	Promjena podataka o uposleniku Promjena podataka o uposleniku
URL	/employee/{id}
Method	PUT
URL params	id
Data params	{ "allowance": "string", "departmentId": 0, "email": "string", "firstnameLastName": "string", "hireDate": "2021-03-25T00:10:18.236Z", "jmbg": "string", "jobRole": "string", "phoneNumber": "string", "remainingDays": 0, "roleId": 0 }

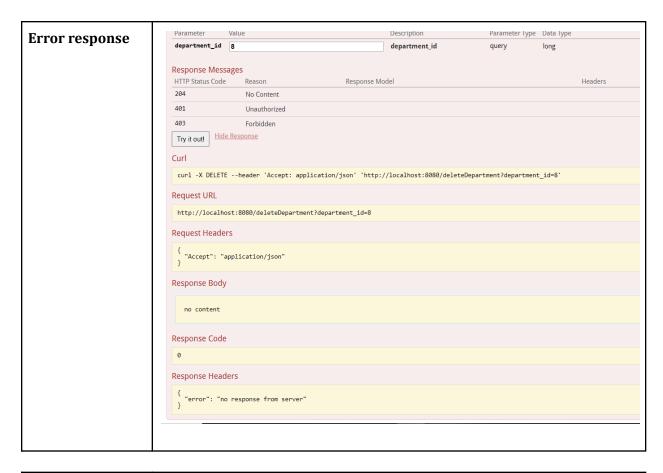
```
Success response
                                                                       {
    "Accept": "application/json"
                                                                    Response Body
                                                                        {
    "id": 55,
                                                                            "allowance": "string",
                                                                            allowance: string,
"email": "string",
"firstnameLastName": "string",
"hireDate": "2021-03-25T00:10:18.236Z",
"jmbg": "7412589632514",
                                                                             "jobRole": "string",
                                                                             "phoneNumber": "string",
                                                                             "remainingDays": 0,
                                                                             "department": {
                                                                              "id": 2,
"code": "MARKETING",
                                                                               "displayName": "Marketing",
"empAllowedNum": 6,
                                                                               "name": "marketing"
                                                                             },
                                                                              "role": {
                                                                                "id": 2,
                                                                            "code": "EMPLOYEE",
                                                                    Response Code
                                                                      200
                                                                    Response Headers
                                                                     {
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Thu, 25 Mar 2021 07:40:16 GMT",
  "keep-alive": "timeout-60",
  "transfer-encoding": "chunked"
}
Error response
                                                                      Curl
                                                                       curl -X PUT --header 'Content-Type: application/json' --header 'Accept: application/json' -d '{ \
"allowance": "string", \
"departmentId": 2, \
"email": "string", \
"firstnameLastName.": lala", \
"firstnameLastName.03-25T00:i0:18.236Z", \
"imbg": "7412I4", \
"jobRole": "string", \
"phoneNumber": "string", \
"roleId": 0 \
}' 'http://localhost:8080/employee/4'
                                                                     Request URL
                                                                       http://localhost:8080/employee/4
                                                                      Request Headers
                                                                       {
    "Accept": "application/json"
                                                                     Response Body
                                                                       {
    "status": "NOT_FOUND",
    "message": "Request was not successfull",
    "error": "Something went wrong",
                                                                             "timestamp": "2021-03-25T08:42:43.856539+01:00"
                                                                      Response Code
                                                                      Response Headers
                                                                       {
"connection": "keep-alive",
"content-type": "application/json",
"date": "Thu, 25 Mar 2021 07:42:43 GMT",
"keep-alive": timeout-60',
"transfer-encoding": "chunked"
}
```

Employee MS - Department entity



Naslov	Kreiranje novog departmenta Kreiranje podataka o departmentu
URL	/department
Method	POST
URL params	/
Data params	{ "code": "string", "displayName": "string", "empAllowedNum": 0, "name": "string" }
Success response	Request URL http://localhost:8080/department Request Headers {

Naslov	Brisanje departmenta Brisanje podataka o departmentu
URL	/department
Method	DELETE
URL params	/
Data params	department_id
Success response	Request Headers { "Accept": "application/json" } Response Body 7 Response Code 200 Response Headers { "connection": "keep-alive", "content-type": "application/json", "date": "Thu, 25 Mar 2021 07:47:38 GMT", "keep-alive": "timeout-60", "transfer-encoding": "chunked" }



Naslov	Dobavljanje departmenta Dobavljanje svih departmenta
URL	/department
Method	GET
URL params	/
Data params	

```
Success response
                                                                     Request Headers
                                                                       { "Accept": "application/json" }
                                                                     Response Body
                                                                             "id": 1,
"code": "SALES",
"displayName": "Sales",
"empAllowedNum": 5,
                                                                                "name": "sales"
                                                                            {

"id": 2,

"code": "MARKETING",

"displayName": "Marketing",

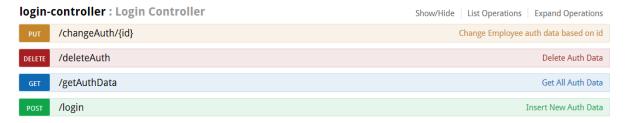
"empAllowedNum": 6,

"name": "marketing"
                                                                            },
{
  "id": 3,
  "code": "HR",
  "displayNlame": "Human Resources",
                                                                                 "empAllowedNum": 5,
                                                                     Response Code
                                                                       201
                                                                     Response Headers
                                                                      {
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Thu, 25 Mar 2021 07:49:37 GMT",
  "keep-alive": "timeout-60",
  "transfer-encoding": "chunked"
}
Error response
                                                                  http://localhost:8080/allemployees
                                                                 Request Headers
                                                                  { "Accept": "application/json"
                                                                 Response Body
                                                                   {
    "status": "NOT_FOUND",
    "message": "No Data Found",
    "error": "No data in DB",
    "timestamp": "2021-03-27720:52:51.8813529+01:00",
    "errors": []
```

Naslov	Promjena podataka o departmenu Promjena postojećih podataka
URL	/department/{id}
Method	PUT
URL params	id
Data params	{

```
"code": "string",
                                                   "displayName": "string",
                                                   "empAllowedNum": 0,
                                                   "id": 0,
                                                  "name": "string"
                                                      Request Headers
Success response
                                                       {
    "Accept": "application/json"
}
                                                      Response Body
                                                         {
  "id": 5,
  "code": "string",
  "displayName": "string",
  "empAllowedNum": 0,
                                                        "name": "string"
}
                                                      Response Code
                                                       200
                                                      Response Headers
                                                      "connection": "keep-alive",
"content-type": "application/json",
"date": "Thu, 25 Mar 2021 07:53:35 GMT",
"keep-alive": "timeout-60",
"transfer-encoding": "chunked"
Error response
                                                     http://localhost:8080/changeDepartment/8
                                                   Request Headers
                                                     { "Accept": "application/json" }
                                                   Response Body
                                                      {
    "timestamp": "2021-03-25T07:53:59.446+00:00",
    "status": 500,
    "error": "Internal Server Error",
                                                     "message": "",
"path": "/changeDepartment/8"
}
                                                   Response Code
                                                   Response Headers
                                                     {
  "connection": "close",
  "content-type": "application/json",
  "date": "Thu, 25 Mar 2021 07:53:59 GMT",
  "transfer-encoding": "chunked"
}
```

Employee MS - Auth Entity



	T
Naslov	Kreiranje novih podataka Kreiranje novih auth podataka
URL	/login
Method	POST
URL params	/
Data params	{ "employee_id": 0, "password": "string", "username": "string" }
Success response	Response Body { "id": 10, "username": "string", "password": "string", "employee": { id": 12, "allowance": "21", "enail": "enail", "firstnameLastName": "ime prezime", "hirebate": "2021-03-24723:35:35.309699+01:00", "jimge": "123467891223", "jobRola": "jobRola", "phoneNumber1", "premainingDays": 21, "department": { id": 1, "code": "SALES", "displayName": "Sales", "empAllowedMum": 5, "name": "sales" Response Code 201 Response Headers { "connection": "keep-alive", "content-type": "application/json", "date": "Thu, 25 Mar 2021 07:56:36 GMT", "keep-alive: "timeout-60", "transfer-encoding": "chunked" }

```
Response Body

{
    "timestamp": "2021-03-25T07:56:58.001+00:00",
    "status": 400,
    "error": "Bad Request",
    "message": ",
    "path": "/login"
}

Response Headers

{
    "connection": "close",
    "content-type": "application/json",
    "date": "Thu, 25 Mar 2021 07:56:58 GMT",
    "rans fer-encoding": "chunked"
```

Naslov	Brisanje podataka Brisanje auth podataka
URL	/deleteAuth
Method	DELETE
URL params	/
Data params	employee_id
Success response	Request URL http://localhost:8080/deleteAuth?employee_id=12 Request Headers { "Accept": "application/json" } Response Body 10 Response Code 200 Response Headers { "connection": "keep-alive", "content-type": "application/json", "date": "Thu, 25 Mar 2021 07:58:23 GMT", "keep-alive": "timeout=60", "timeout=60", "transfer-encoding": "chunked" } }

```
Request URL

http://localhost:8080/deleteAuth?employee_id=5

Request Headers

{ "Accept": "application/json"

Response Body

{ "status": "NOT_FOUND",
 "message": "Auth data with employee_id 5 not found",
 "error": "There is no data for given input",
 "timestamp": "2021-03-27T21:20:36.905256+01:00",
 "errors": []
}
```

```
Naslov
                                                   Dobavljanje podataka
                                                   Dobavljanje svih auth podataka
URL
                                                   /getAuthData
Method
                                                   GET
URL params
Data params
Success response
                                                       Response Body
                                                             {
    "id": 1,
                                                                 "username": "username1",
                                                                 "password": "pass1",
                                                                 "employee": {
                                                                   "id": 1,
                                                                   "allowance": "21",
"email": "email",
"firstnameLastName": "ime prezime",
"hireDate": "2021-03-24T21:09:42.002536+01:00",
                                                                   "hireUate": "2021-03-24121:09:4"
jmbg1": "jmbg1",
"jobRole": "jobRole1",
"phoneNumber": "phoneNumber1",
"remainingDays": 21,
                                                                    "department": {
                                                                     "id": 1,
"code": "SALES",
"displayName": "Sales",
"empAllowedNum": 5,
                                                       Response Code
                                                         201
                                                       Response Headers
                                                        {
    "connection": "keep-alive",
    "content-type": "application/json",
    "date": "Thu, 25 Mar 2021 08:00:00 GMT",
    "keep-alive": "timeout-60",
    "transfer-encoding": "chunked"
```

```
Request URL

http://localhost:8080/getAuthData

Request Headers

{ "Accept": "application/json"

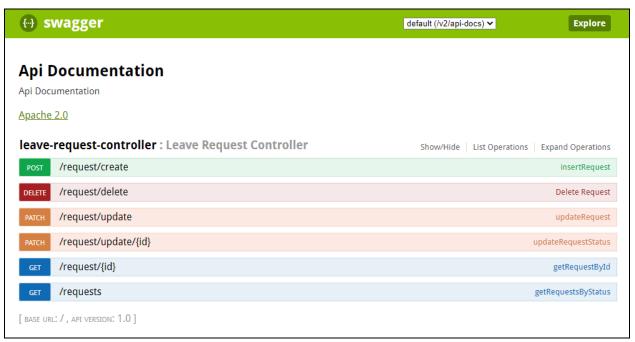
Response Body

{ "status": "NOT_FOUND", "message": "No Data Found", "error": "No data in DB", "timestamp": "2021-03-27T21:18:27.0772767+01:00", "errors": [] }
```

Naslov	Izmjena postojećih podataka Izmjena auth podataka
URL	/changeAuth/{id}
Method	PUT
URL params	id
Data params	{ "employee_id": 0, "password": "string", "username": "string" }

```
Success response
                                                              Response Body
                                                                   {
    "id": 2,
                                                                      "username": "string",
"password": "string",
"employee": {
                                                                         "id": 2,
                                                                         "allowance": "21",
                                                                         "email": "email2",
"firstnameLastName": "ime prezime2",
                                                                          "hireDate": "2021-03-24T21:09:42.003536+01:00",
                                                                         "jmbg": "jmbg2",
"jobRole": "jobRole2",
"phoneNumber": "phoneNumber2",
                                                                          "remainingDays": 21,
                                                                          "department": {
                                                                            "id": 2,
"code": "MARKETING",
                                                                            "displayName": "Marketing",
"empAllowedNum": 6,
"name": "marketing"
                                                               Response Code
                                                                200
                                                              Response Headers
                                                                {
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Thu, 25 Mar 2021 08:04:40 GMT",
  "keep-alive": "timeout-60",
  "transfer-encoding": "chunked"
}
Error response
                                                                            Request URL
                                                                             http://localhost:8080/changeAuth/5
                                                                            Request Headers
                                                                             {
    "Accept": "application/json"
    }
                                                                            Response Body
                                                                                {
    "status": "NOT_FOUND",
    "message": "Auth data with id 5 not found",
    "error": "There is no data for given input",
    "timestamp": "2021-03-27721:19:18.1765348+01:00",
    "errors": []
}
```

Leave Request MS



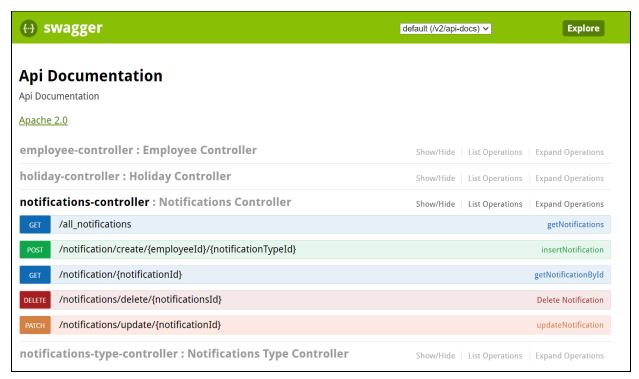
Naslov	Kreiranje zahtjeva Kreiranje novog zahtjeva za odsustvom
URL	/request/create
Method	POST
URL params	/
Data params	{ "comment": "string", "daysNum": 0, "employeeId": 0, "startDate": "2021-03-24T18:33:52.387Z", "typeId": 0 }

Naslov	Brisanje zahtjeva Brisanje zahtjeva prema id-u
URL	/request/delete
Method	DELETE
URL params	
Data params	

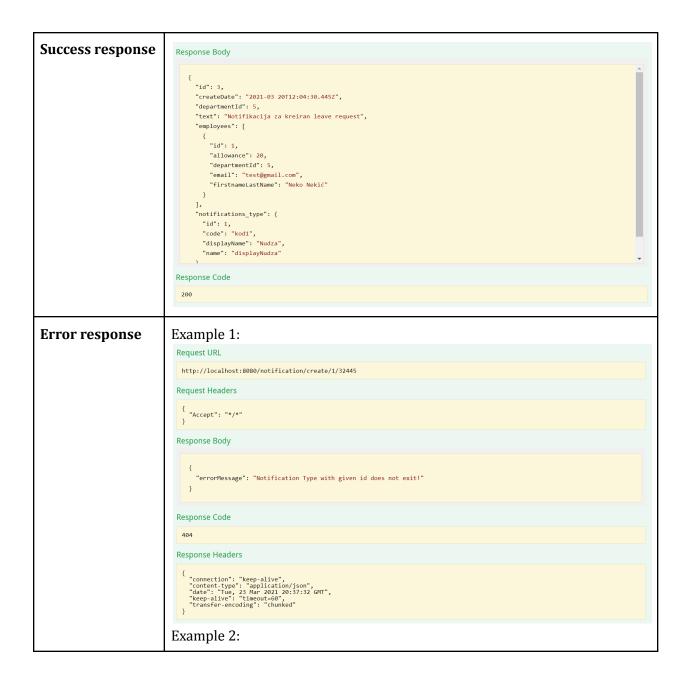
Naslov	Promjena statusa zahtjeva Promjena statusa zahtjeva prema id-u
URL	/request/update/{id}
Method	PATCH
URL params	Required: leave_request_id= [long] Example: leave_request_id= 2
Data params	{ "notificationsId": 0, "statusId": 0 }

Naslov	Dobavljanje jednog zahtjeva Dobavljanje zahtjeva prema id-u
URL	/request/{id}
Method	GET
URL params	Required: leave_request_id= [long] Example: leave_request_id= 2
Data params	/

Notifications MS → Notification Entity



Naslov	Kreiranje notifikacije Pri kreiranju notifikacije neophodno je u URL proslijediti ID uposlenika i notification type ID.
URL	/notification/create/{employeeld}/{notificationTypeld}
Method	POST
URL params	Required: notificationTypeId= [long] employeeId= [long] Example: notificationTypeId= 1 employeeID = 2
Data params	{ "createDate": "string", "departmentId": 0, "text": "string" }



```
Request URL
   http://localhost:8080/notification/create/12323/1
 Request Headers
   {
    "Accept": "*/*"
 Response Body
     "errorMessage": "Employee with given id does not exist" }
 Response Code
 Response Headers
   {
  "connection": "keep-alive",
  "content-type": "application/json",
  "date": "Tue, 23 Mar 2021 20:43:43 GMT",
  "keep-alive": "timeout-60",
  "transfer-encoding": "chunked"}
Example 3:
 Request URL
   http://localhost:8080/notification/create/12323/1asfa
 Request Headers
   {
   "Accept": "*/*"
   }
 Response Body
    {
    "timestamp": "2021-03-23T20:44:58.034+00:00",
    "status": 400,
    "error": "Bad Request",
    "message": "",
    "-3+b": "/notification/create/12323/lasfa"
    "path": "/notification/create/12323/lasfa"
}
 Response Code
```

Naslov	Brisanje notifikacije Brisanje određene notifikacije, tako što se u URL-u pošalje ID notifikacije za brisanje!
URL	/notifications/delete/{notificationsId}
Method	DELETE
URL params	Required: notificationTypeId= [long] Example: notificationTypeId= 2

Data params	/
Success response	Request URL
	http://localhost:8080/notifications/delete/1
	Request Headers
	{ "Accept": "application/json" }
	Response Body
	1
	Response Code
	200
	Response Headers
	{ "connection": "keep-alive", "content-type": "application/json", "date": "Tue, 23 Mar 2021 20:52:11 GMT", "keep-alive": "timeout=60", "transfer-encoding": "chunked" }
Error response	Request URL
	http://localhost:8080/notifications/delete/143
	Request Headers
	{ "Accept": "application/json" }
	Response Body
	{ "errorMessage": "Notification with given id does not exit!" }
	Response Code
	404
	Response Headers
	{ "connection": "keep-alive", "content-type": "application/json", "date": "Tue, 23 Mar 2021 21:07:38 GMT", "keep-alive": "timeout=60", "transfer-encoding": "chunked" }

Naslov	Update notifikacije Ukoliko postoji notifikacija u bazi PATCH ce da uradi update, ukoliko ne postoji on ce dodati novu notifikaciju.
URL	/notifications/update/{notificationId}
Method	PATCH
URL params	Required: notificationTypeId= [long]

```
Example:
                                         notificationTypeId= 2
Data params
                                           "createDate": "string",
                                           "departmentId": 0,
                                           "text": "string"
Success response
                                          Response Body
                                              {
    "id": 2,
                                                 "createDate": "test",
                                                "departmentId": 0,
"text": "test",
"employees": [
                                                 {
    "id": 4,
    "allowance": 15,
                                                    "departmentId": 5,

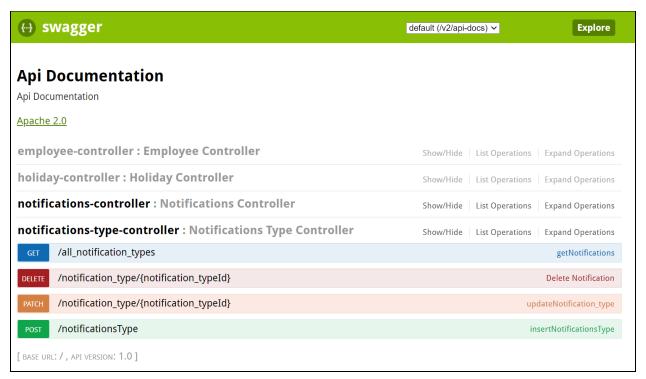
"email": "dcorovic@gmail.com",

"firstnameLastName": "Dalila Ćorović"
                                                 "notifications_type": {
                                                 "id": 1,
"code": "kod1",
"displayName": "Nudza",
                                                  "name": "displayNudza"
                                          Response Code
Error response
                                            http://localhost:8080/notifications/update/2213213
                                           Request Headers
                                            {
    "Accept": "*/*"
}
                                          Response Body
                                              No value present
                                          Response Code
                                           Response Headers
                                            {
  "connection": "close",
  "content-length": "16",
  "content-type": "text/plain;charset=UTF-8",
  "date": "Tue, 23 Mar 2021 21:29:43 GMT"
}
```

Naslov	Dodavanje Notifikacija
URL	/notification/{notificationId}
Method	GET

```
URL params
                                       Required:
                                       notificationId= [long]
                                       Example:
                                       notificationId= 2
Data params
Success response
                                         Response Body
                                               1a : 1,
                                               "createDate": "2021-03-24",
                                               "departmentId": 1,
                                               "text": "test1",
                                               "employees": [
                                               "id": 1,
"allowance": 20,
                                                  "departmentId": 5,
                                                  "email": "test@gmail.com",
"firstnameLastName": "Neko Nekić"
                                               "notifications_type": {
                                                "id": 2,
"code": "kod2",
"displayName": "Dalila",
"name": "displayDalila"
                                         Response Code
                                           200
Error response
                                         Request URL
                                          http://localhost:8080/notification/1213
                                         Request Headers
                                          {
    "Accept": "*/*"
}
                                         Response Body
                                            No notification found!
                                         Response Code
                                          500
                                         Response Headers
                                          {
  "connection": "close",
  "content-length": "22",
  "content-type": "text/plain;charset=UTF-8",
  "date": "Wed, 24 Mar 2021 19:06:57 GMT"
}
```

Notifications $MS \rightarrow NotificationType Entity$



Naslov	Kreiranje tipa notifikacije
URL	/notificationsType
Method	POST
URL params	/
Data params	{ "code": "Approved", "displayName": "Leave Request is approved", "name": "Holiday" }

```
Success response

Request Headers

{ "Accept": "*/""

Response Body

{ "id": 3, "code": "Approved", "displayName": "Leave Request is approved", "name": "Holiday"
 }

Response Code

200

Response Headers

{ "connection": "keep-alive", "content-type": "application/json", "content-type": "application/json", "date": "Ned, 24 Mer 2021 09:551:38 GMT", "transfer-encoting": "chunked"
} Transfer-encoting": "chunked"

Error response
```

Naslov	Dobavljanje svih tipova notifikacija
URL	/all_notification_types
Method	GET
URL params	/
Data params	/
Success response	Response Body // { "id": 2, "code": "kod2", "displayName": "Dalila", "name": "displayDalila" }, { "id": 3, "code": "1", "displayName": "string", "name": "string" }, { "id": 4, "code": "string", "displayName": "string", "name": "1" } Response Code

Naslov	Update tipova notifikacija
URL	/notification_type/update/{notification_typeId}
Method	PATCH
URL params	Required: notificationTypeId= [long] Example: notificationTypeId= 1
Data params	{ "code": "string", "displayName": "string", "name": "string" }
Success response	Request URL http://localhost:8080/notification_type/update/1 Request Headers { "Accept": "*/*" } Response Body { "id": 1, "code": "string", "displayName": "string", "name": "string" } } Response Code 200

Error response	Request URL
	http://localhost:8080/notification_type/update/765
	Request Headers
	{ "Accept": "*/*" }
	Response Body
	No value present
	Response Code
	500

Naslov	Brisanje tipa notifikacije
URL	/notification_type/delete/{notification_typeId}
Method	DELETE
URL params	Required: notificationTypeId= [long] Example: notificationTypeId= 1
Data params	/
Success response	Request URL http://localhost:8080/notification_type/3 Request Headers { "Accept": "application/json" } Response Body 3 Response Code 200 Response Headers { "connection": "keep-alive", "content-type": "application/json", "date": "wed, 24 Mar 2021 10:59:12 GMT", "keep-alive": "transfer-encoding": "chunked" }

```
Request URL

http://localhost:8080/notification_type/3231

Request Headers

{ "Accept": "application/json"
}

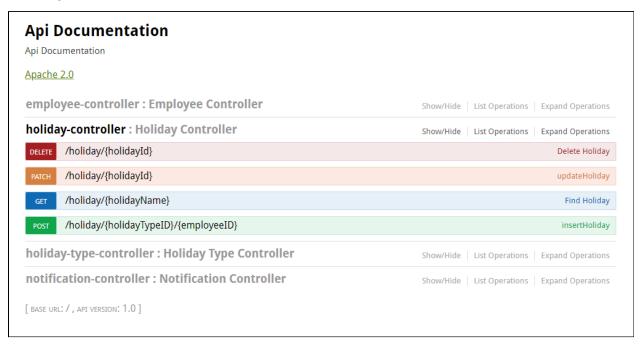
Response Body

{ "errorMessage": "Notification type with given id does not exit!"
}

Response Code

404
```

Holiday MS



Naslov	Add holiday Kreiranje holiday-a, uz zahtjev da se u URL-u unese ID zaposlenika koji kreira taj godišnji odmor, zajedno sa ID tipa holiday-a.
URL	/holiday/{holidayTypeID}/{employeeID}
Method	POST
URL params	Required: holidayTypeID= [long]

```
employeeID = [long]
                              Example:
                              holidayTypeID = 1
                              employeeID = 1
                              Post body request:
Data params
                               "endDate": "string",
                               "startDate": "string"
                              Example:
                               "endDate": "10.10.2020",
                               "startDate": "11.11.2020"
Success response
                               Response Body
                                    "startDate": "11.11.2020",
                                    "endDate": "10.10.2020",
                                    "employees": [
                                      "allowance": 20,
                                       "firstnameLastName": "Dalila Corovic",
                                       "remainingDays": 10
                                    "holidayType": {
                                     "id": 1,

"code": "code1",

"displayName": "Godisnji odmor",

"name": "godisnji",

"type": "Godisnji odmor"
                               Response Code
Error response
                              Example 1:
                               Request URL
                                 http://localhost:8080/holiday/11/1
                               Request Headers
                                 {    "Accept": "*/*"
                               Response Body
                                    "errorMessage": "Holiday type with given id does not exist"
                               Response Code
                               Example 2:
```

Naslov	Update holiday Parcijalno editovanje određenog reda u bazi podataka sa holiday-em koji već postoji
URL	/holiday/{holidayTypeID}/{employeeID}
Method	PATCH
URL params	Required: holidayId= [long] Example: holidayId= 1
Data params	Patch body request: { "endDate": "string", "startDate": "string" }

```
Example:
                                                  "endDate": "10.10.2020",
                                                 "startDate": "12.10.2020"
Success response
                                                 Response Body
                                                   {
    "id": 2,
    "startDate": "12.10.2020",
    "endDate": "10.10.2020",
    "employees": [
    f
                                                      "empa",

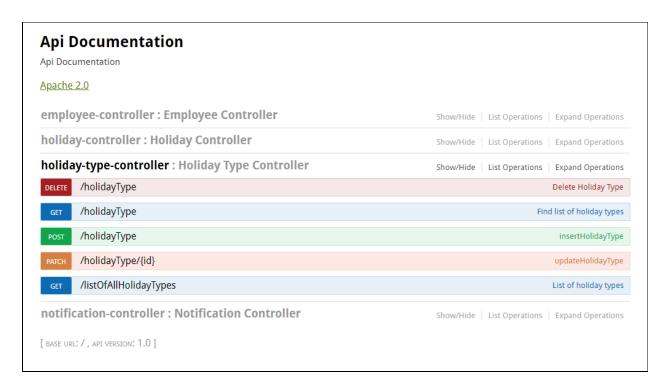
{
    "id": 1,
    "allowance": 20,
    "firstnameLastName": "Dalila Corovic",
    "remainingDays": 10
                                                       ],
"holidayType": {
                                                         nolidaylype: {
    "id": 1,
    "code": "code1",
    "displayName": "Godisnji odmor",
    "name": "godisnji",
    "type": "Godisnji odmor"
                                                 Response Code
                                                   200
Error response
                                                 Request URL
                                                   http://localhost:8080/holiday/12
                                                 Request Headers
                                                   {    "Accept": "*/*"
                                                 Response Body
                                                     No value present
                                                 Response Code
```

Naslov	Delete holiday Brisanje holiday-a po datom ID-u ukoliko isti postoji.
URL	/holiday/{holidayId}
Method	DELETE
URL params	Required: holidayId= [long] Example: holidayId= 1

Data params	/
Success response	Request URL http://localhost:8080/holiday/1 Request Headers { "Accept": "application/json" } Response Body 1 Response Code 200
Error response	Request URL http://localhost:8080/holiday/1235 Request Headers { "Accept": "application/json" } Response Body { "errorMessage": "Holiday with given id does not exist" } Response Code

Naslov	Get holiday Get sve holiday-a jednog odredjenog employee-a
URL	/holiday/{employeeId}
Method	GET
URL params	Required: employeeId = [long] Example: employeeId = 1
Data params	/

```
Success response
                                                         Response Body
                                                               {
    "id": 1,
    "startDate": "2020-10-08",
    "endDate": "2020-10-20",
    "employees": [
                                                                 "employe..
{
    "id": 1,
    "allowance": 20,
    "firstnameLastName": "Dalila Corovic",
    "remainingDays": 10
                                                                   l,
"holidayType": {
    "id": 1,
    "code": "code1",
    "displayName": "Godisnji odmor",
    "name": "godisnji",
    "type": "Godisnji odmor"
                                                         Response Code
                                                           200
Error response
                                                         Request URL
                                                           http://localhost:8080/holiday/5
                                                         Request Headers
                                                           {    "Accept": "*/*"    }
                                                         Response Body
                                                              {
    "errorHessage": "Holiday for given employee id does not exist"
                                                         Response Code
                                                           404
```



```
Naslov
                    Add holiday type
                    Dodavanje tipova odmora od strane admina
URL
                    /holidayType
Method
                    POST
URL params
Data params
                    Post body request:
                     "code": "string",
                     "displayName": "string",
                     "name": "string",
                     "type": "string"
                    Example:
                     "code": "123",
                     "displayName": "Godisnji odmor",
                     "name": "Godisnji",
                     "type": "Godisnji odmor"
```

Naslov	Delete holiday type Obrisati holiday type po odredjenom ID-u ukoliko isti postoji.
URL	/holiday/{holidayId}
Method	DELETE
URL params	Required: Id = [long] Example: Id = 1
Data params	/

```
Success response

Request URL

http://localhost:8080/holidayType/2

Response Body

2

Response Code

200

Error response

Request URL

http://localhost:8080/holidayType/34

Request Headers

{ "Accept": "application/json" }

Response Body

Response Body

Response Body

Response Body

Response Body

Response Body

Response Body
```

Naslov	Update holiday type Parcijalno editovanje određenog reda u bazi podataka sa holiday type koji već postoji
URL	/holiday/{holidayId}
Method	PATCH
URL params	Required: Id = [long] Example: Id = 1
Data params	Patch body request: { "code": "string", "displayName": "string", "name": "string", "type": "string" } Example: { "code": "1234",

```
"displayName": "Godisnji odmor",
    "name": "godisnji",
    "type": "Godisnji odmor"
}

Success response

Response Body

{
    "id": 1,
    "code: "1234",
    "displayName": "Godisnji odmor",
    "name": godisnji odmor",
    "name": go
```

Naslov	Get holiday type Lista svih dostupnih tipova holiday-a. Ukoliko ne postoji kreirana lista status errora ce biti NO_CONTENT.
URL	/listHolidayTypes
Method	GET
URL params	/
Data params	/

```
Success response
                            Request URL
                              http://localhost:8080/listHolidayTypes
                            Request Headers
                              {
    "Accept": "*/*"
}
                            Response Body
                              Response Code
Error response
                            Request URL
                              http://localhost:8080/listHolidayTypes
                            Request Headers
                              {
    "Accept": "*/*"
}
                            Response Body
                               no content
                            Response Code
```

TABLE: NOTIFICATION TYPE \rightarrow CODE

А	Approved
R	Rejected
Р	Pending
Н	Holiday

TABLE: LEAVE STATUS \rightarrow CODE

А	Approved
R	Rejected
Р	Pending

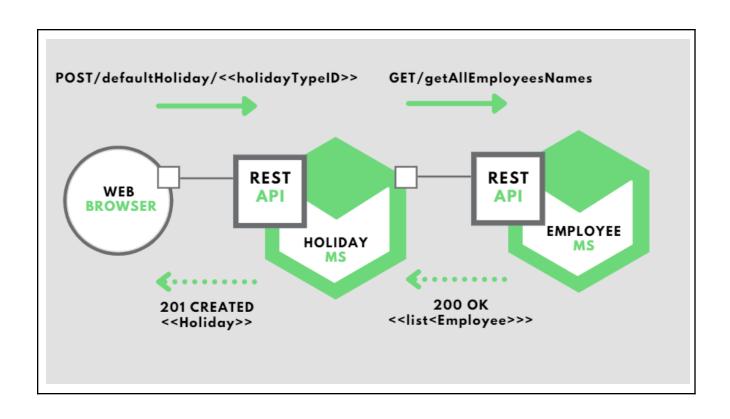
TABLE: LEAVE TYPE \rightarrow CODE

Н	Holiday
F	Funeral
Р	Parental Leave
S	Sick Leave
М	Marriage leave

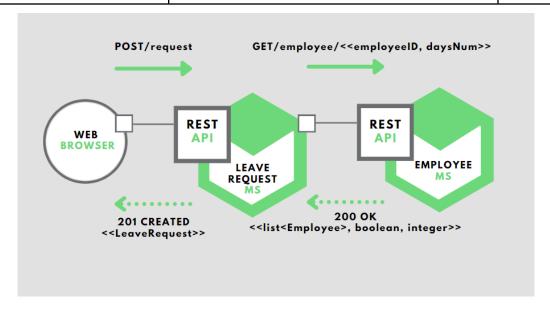
ZADATAK 5

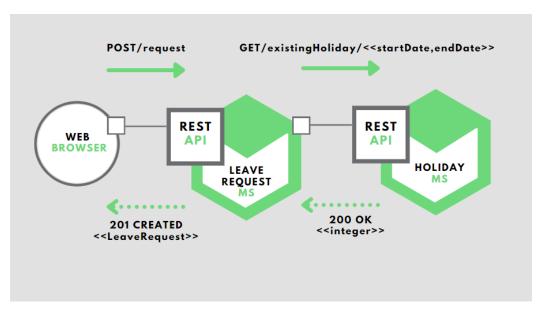
5.1 Funkcionalnosti koje zahtijevaju komunikaciju između dva ili više mikroservisa!

	FUNKCIONALNI ZAHTJEV - ADMIN	OPIS FUNKCIONALNIH ZAHTJEVA	Komunikacija
1.	Dodavanje uposlenika u sistem	Dodavanje novih zaposlenika u sistem i kreiranje inicijalnog username-a i pw za novog zaposlenika. Poslati employee-a Notification MS kako bi se pohranio u istoimenu tabelu → radi obavjestenja svih radnika o nadolazecem prazniku → defaultn-a notifikacija ("Dobrodosli u kompaniju");	Employee service → Notification service ASINHRONA
2.	Brisanje uposlenika iz sistema	Brisanje uposlenika koji napuštaju kompaniju iz liste uposlenika.	Employee → Holiday i Notification ASINHRONA
3.	Odobravanje/poništavanje zahtjeva	Mogućnost prihvatanja zahtjeva određenog zaposlenika iz liste zahtjeva, odnosno poništavanja istog. U slučaju poništavanja zahtjeva adminu je omogućeno da ostavi komentar. Salje se Employee MS radi azuriranja broja neiskoristenih dana i Notification MS.	Leave Request → Employee ASINHRONA → Notification ASINHRONA
4.	Notifikacija o novom zahtjevu	Mogućnost pristizanja notifikacije pri kreiranju novog zahtjeva od strane zaposlenika.	Leave request → Notification ASINHRONA
5.	Kreiranje defaultnog holiday-a	Admin kreira novi holiday koji je vezan za sve employee	Holiday → Employee SINHRONA



	FUNKCIONALNI ZAHTJEV - ZAPOSLENI	OPIS FUNKCIONALNIH ZAHTJEVA	Komunikacija
1.	Zahtjev za odsustvo	Mogućnost podnošenja zahtjeva za odsustvom u formatu željenog datuma početka i kraja, unošenja vrste odsustva i komentara uz zahtjev.	Leave Request → Employee SINHRONA → Holiday SINHRONA → Notification ASINHRONA





2. Notifikacija o nalodazećem Nekoliko dana prije praznika uposlenik dobija $Notification {\rightarrow}$ prazniku obavještenje o nadolazećem prazniku. Holiday SINHRONA GET/employees/<<employeesID, text>> POST/notifications/<<holidayTypeID>> REST API HOLIDAY 200 OK list<EmployeeID> REST WEB BROWSER **API** NOTIFICATION GET/allemployees/<<Employee>> 201 CREATED REST EMPLOYEE 200 OK list<Employees>

ZADATAK 7

Dva glavna koncepta za sigurnost: autentifikacija i autorizacija.

Autentifikacija: who you are

Provjera validnosti kredencijala (username i password) na osnovu kojih se utvrđuje identiteta user-a.

Za autentifikaciju će se koristiti Protocol OpenID Connect - JWT (JSON Web Token).

JWT ne koriste sesije i prilagođene su načinu rada mikroservisnih arhitektura. Umjesto kreiranja sesije i postavljanja cookie-a, server dodijeli user-u JSON web token. Neke od prednosti JWT su:

- 1. Stateless → ne kreira se sesija, JWT u sebi sadrži sve kredencijale, informacije o vremenu isteka i sve drudge neophodne podatke.
- 2. Portable → Jedan token se može koristiti u više različitih mikroservisa.
- 3. Nisu potrebni cookies
- 4. Decentralizacija: Token može da bude generisan bilo gdje. Autentifikacija može da se generiše i na klijentu i na serveru.

Autorizacija: what you can do

Autorizacija je dodjela prava pristupa resursima koji se odnose na bezbjednost informacija i računarsku bezbjednost, naročito kontrolu pristupa.

Za autorizaciju će se koristiti OAuth 2.0 Access token.

Da li će API gateway voditi računa o autentifikaciji? DA.

Kako ćete realizovati role za korisnike?

U sistemu postoje dvije role: **admin** i **uposlenik**. Koristiti će se OAuth 2.0 Access token i JWT. Unutar JSON tokena će biti pohranjena rola. Vršit će se provjere role, u zavisnosti od funkcionalnosti.

Centralizovana ili decentralizovana autorizacija?

Centralizovana.

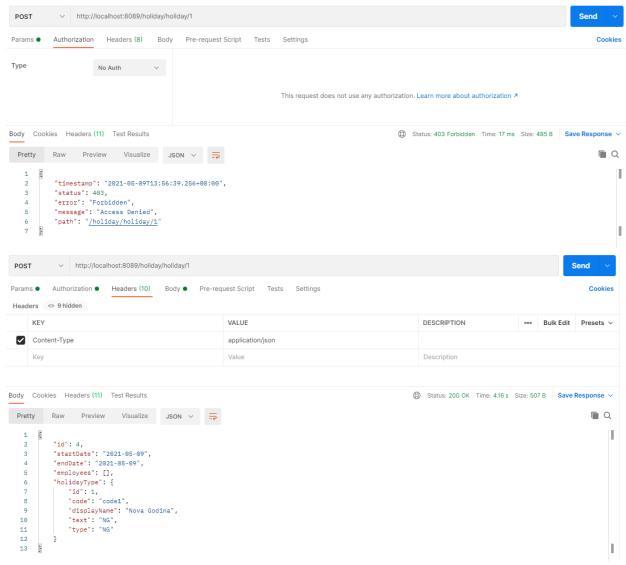
ZADATAK 8

Implementacija sigurnosti!

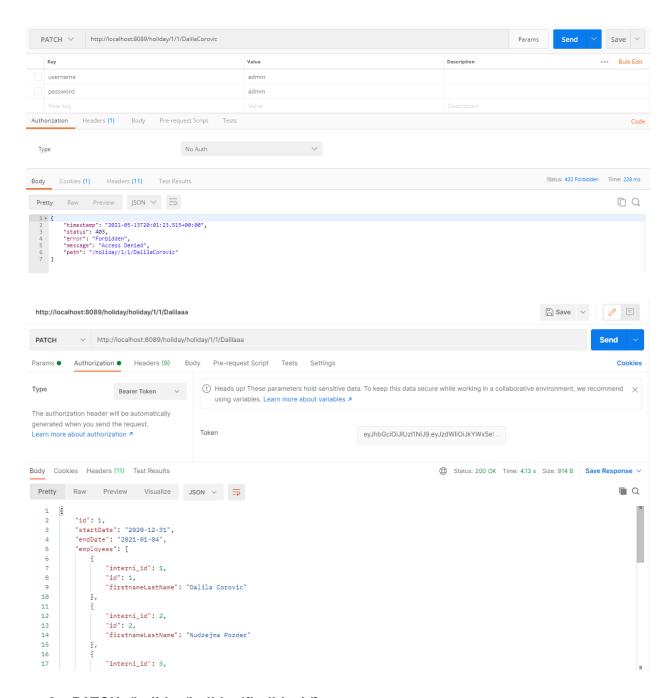
NAPOMENA: U prilogu je uradjen prikaz pogrešne i tačne autorizacije za holiday MS. Analogno se i za ostale MS.

HolidayMS

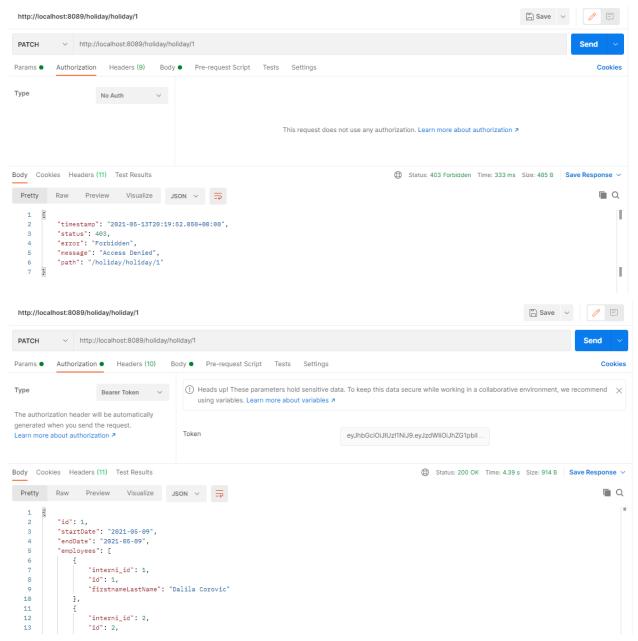
1. POST - /holiday/holiday/{holidayTypeID}



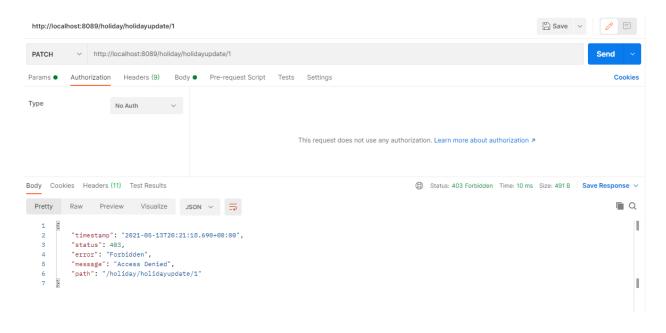
2. PATCH - /holiday/holiday/{holidayTypeID}/{employeeID}/{firstAndLastName}



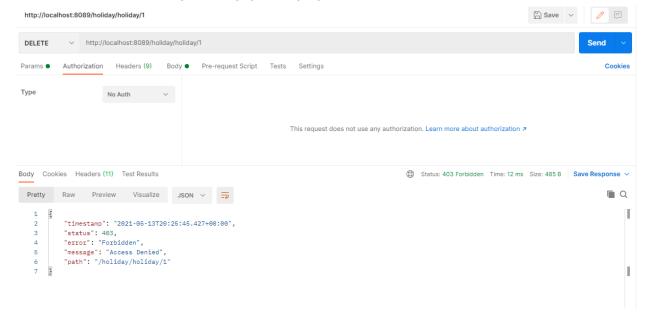
3. PATCH -/holiday/holiday/{holidayId}

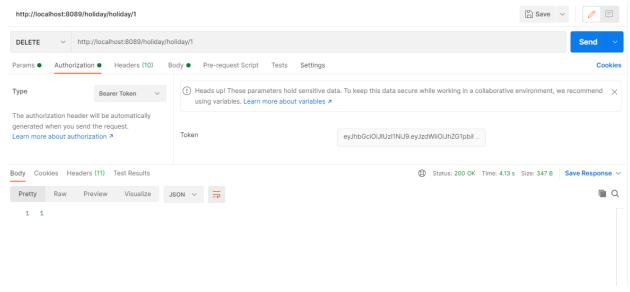


4. PATCH - /holiday/holidayupdate/{employeeld}

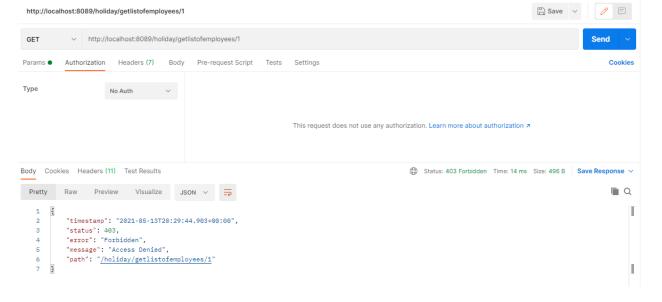


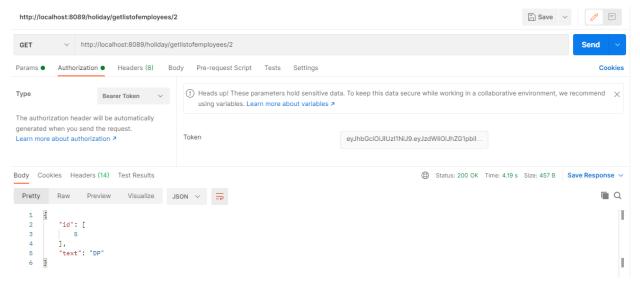
5. DELETE - /holiday/holiday/{holidayId}





6. GET - /holiday/getlistofemployees/{holidayTypeId}





- 7. GET /holiday/getlistofholidays dozvoljeno svim rolama
- 8. GET /holiday/holiday/{startDate}/{daysNum} dozvoljeno svim rolama
- 9. POST /holiday/holidayType

