



## **Hönnunarskýrsla**

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Tölvunarfræðideild, Háskólinn í Reykjavík

T-113-VLN1: Verklegt Námskeið 1

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## Hönnunarskýrsla

<b>Kröfulistí</b>	<b>3</b>
<b>Notendakönnun</b>	<b>5</b>
<b>Notkunartilvik</b>	<b>6</b>
Notkunartilvik tengd starfsmönnum:	6
Notkunartilvik tengd Flugferðum:	8
Notkunartilvik tengd áfangastöðum:	11
<b>Klasarit</b>	<b>13</b>
Main forrit og UI Layer	13
Logic Layer	14
IO Layer	15
Models	16
<b>Gleðileiðir</b>	<b>17</b>
Verkefni: Búa til vinnuferð	17
Verkefni: Skrá starfsmenn á vinnuferð	19
Verkefni: Búa til starfsmann	20
Verkefni: Breyta starfsmannaupplýsingum	23
Verkefni: Búa til áfangastað	25
Verkefni: Breyta áfangastað	28
<b>Lokaorð</b>	<b>30</b>

## Inngangur

Chuck Norris ætlar enn og aftur að hunsa lögmál eðlisfræðinnar og velur í þetta skipti að deila með núlli. Í tilefni þess verks stofnaði hann nýja flugfélagið NAN-air líka þekkt sem Not A Number-air. Með því ætlar Chuck Norris að veita þeim sem þurfa að fljúga yfir og í kringum Atlantshafið góða flugþjónustu frá og til Íslands. Til þess að geta það þarf hann öflugt bókhaldskerfi yfir flugvélar og starfsmenn sína. Það þarf að geta skráð ný flug, skráð nýja starfsmenn og skráð nýja áfangastaði til þess að geta skutlað fólkinu sem getur ekki bara stokkið á milli landa eins og Chuck.

## Kröfulist

Nr	Krafa/Lýsing	Forgangsröð	Annað
1	Notandi skal geta skráð vinnuferðir og vistað án mönnunar. Þá er skráð niður tími til og frá áfangastað og áfangastaðurinn sjálfur.	A	Vinnuferð er flugferð frá Íslandi og aftur til Íslands
2	Notandi skal geta mannað vistaðar vinnuferðir	A	
3	Vinnuferð skal hafa amk. tvo flugmenn þar sem einn þeirra skal vera flugstjóri	A	
4	Vinnuferð skal hafa amk. einn flugþjón þar sem a.m.k. einn þeirra skal vera yfirflugþjónn	A	
5	Starfsmenn skulu bara geta farið í eina vinnuferð á hverjum degi	A	

6	Notandi skal geta skráð upplýsingar um starfsmenn, flugmenn og flugþjóna	A	Nafn, kennitölu, heimilisfang, síma og netfang
7	Notandi skal geta skráð upplýsingar um áfangastað	A	Land, flugvöll, flugtíma, fjarlægð frá Íslandi, nafn tengiliðs og neyðarsímanúmer hans
8	Notandi skal geta listað alla starfsmenn, flugmenn og flugþjóna	A	
9	Notandi skal geta listað upplýsingar um ákveðin starfsmann	A	
10	Notandi skal geta breytt upplýsingum um starfsmann	A	En ekki nafni eða kennitölu
11	Notandi skal geta listað alla áfangastaði	A	
12	Notandi skal geta listað allar vinnuferðir á ákveðnum degi og séð ef þær eru fullmannaðar	A	
13	Notandi skal geta listað allar vinnuferðir í ákveðinni viku og sjá ef þær eru fullmannaðar	A	
14	Notandi skal geta listað alla starfsmenn sem eru ekki að vinna ákveðinn dag	A	

15	Notandi skal geta listað alla starfsmenn sem eru að vinna ákveðinn dag og hvert þeir eru að fara	A	
16	Notandi skal geta listað allar vinnuferðir	A	
17	Notandi skal geta listað vinnufirlit sem sýnir allar vinnuferðir í ákveðinni viku fyrir ákveðinn starfsmann	A	
18	Notandi skal geta fundið flug eftir flugnúmeri	B	
19	Notandi skal geta fundið flugnúmer fyrir flug	B	
20	Notandi skal geta breytt nafni og neyðarsímanúmeri á tengilið sem er skráður fyrir áfangastað	B	

### Notendakönnun

Við létum þrjá notendur prófa forritið okkar og úr því komu mismunandi sýn með mismunandi endurgjöf. Verkefnin sem voru notuð voru að búa til vinnuferð, starfsmann og áfangastað, og skrá starfsmann á vinnuferð.

Notandi 1 talaði um að valmynd okkar væri með mjög mikið af valkostum, við völdum ekki að breyta því, en þar á móti tók hann eftir að inntak í forritinu leyfði ekki stóra stafi þegar að starfsmaður var búinn til og við löguðum það.

Notandi 2 talaði um að honum myndi finnast það svalt ef að þegar að maður færi úr einni valmynd í aðra þá myndi skipanalínan hreinsast út og nýja valmyndin myndi birtast í staðinn. Við vorum sammála að þetta væri góð hugmynd og bættum þeirri virkni við.. Síðan talaði hann líka um að flokka lík vól í valmyndinni saman, sem við gerðum líka.

Notandi 3 komst í gegnum ferlið villulaust og fannst viðmótið flott.

## Notkunartilvik

### *Notkunartilvik tengd starfsmönnum:*

Name	Add staff
Number	1
Priority	A
Precondition	None
Description (Base flow)	The user selects “Staffer”, “Add employee”, and fills out the required information.
Alternative Flow	
Post Condition	New staff member is added to the database
Source (requirements)	6
Actors	Manager
Author	Kristófer

Name	List Employee worklog
Number	7
Priority	A
Precondition	Given employee exists and has worked previously
Description (Base flow)	Go to “Staffer”, “Search Employees”, search for a specific employee and select “List worklog”.
Alternative Flow	No shifts to display
Post Condition	This displays a list of every shift a given employee has worked
Source (requirements)	19
Actors	Manager
Author	Kristófer

Name	See list of pilots
Number	13
Priority	A
Precondition	A pilot must be registered at the company
Description (Base flow)	The user selects Staffer, Pilots, and gets a list of pilots.
Alternative Flow	User notified if no pilots are registered
Post Condition	The system displays a list of all registered pilots in

	alphabetical order
Source (requirements)	
Actors	Manager
Author	Sölvi

Name	See a list of flight attendants
Number	24
Priority	A
Precondition	There must be at least one flight attendant registered at the company
Description (Base flow)	The user selects Staffer, Attendants, and gets a list of flight attendants.
Alternative Flow	User notified if no flight attendants are registered
Post Condition	The system displays a list of all registered flight attendants in alphabetical order
Source (requirements)	
Actors	Manager
Author	Sölvi Gunnarsson

Name	See a list of staff who are free on a given day
Number	22
Priority	A
Precondition	At least one staff member must exist
Description (Base flow)	The user selects Staffer, All staff not working on day x, inputs a date, and gets a list of free staff
Alternative Flow	The user is notified that no staff members are listed
Post Condition	The system displays a list of all staff members that are either available or unavailable on a given day
Source (requirements)	
Actors	Manager
Author	Sölvi

Name	Change employee info
Number	8
Priority	A
Precondition	The employee the user wishes to change must exist

Description (Base flow)	The user selects Staffer, Modify employee, selects an employee and changes their info.
Alternative Flow	There are no employees to change information about
Post Condition	the specific employees information is changed
Source (requirements)	10
Actors	Manager
Author	Torfi

Name	See a list of staff
Number	14
Priority	A
Precondition	There must be at least one staff member registered at the company
Description (Base flow)	The user selects Staffer, All employees and gets a list of all staff.
Alternative Flow	User notified if no staff members are registered
Post Condition	The system displays a list of all registered staff in alphabetical order
Source (requirements)	
Actors	Manager
Author	Sölvi

Name	Show info for a specific staff member
Number	18
Priority	A
Precondition	A staff member must exist
Description (Base flow)	The user selects Staffer, Search employees, finds a specific employee and their info is displayed.
Alternative Flow	There are no staff members registered
Post Condition	Information about a specific employee is listed
Source (requirements)	9
Actors	Manager
Author	Torfi

***Notkunartilvik tengd Flugferðum:***

Name	See all currently listed voyages
------	----------------------------------



Number	3
Priority	A
Precondition	There are voyages that exist
Description (Base flow)	The user selects Flyer, Voyages and Get all voyages.
Alternative Flow	The user is notified that there are no voyages to be listed
Post Condition	A list of all listed voyages is shown. With every flight having a check which shows whether said flight is fully staffed or not.
Source (requirements)	19
Actors	Manager
Author	Torfi

Name	List weekly voyages
Number	9
Priority	A
Precondition	At least one voyage created
Description (Base flow)	Lists all voyages for a given week sorted by time with flight ID and whether it's fully manned
Alternative Flow	No voyages to display
Post Condition	User sees all voyages for a given week and if those flights are manned or not
Source (requirements)	13
Actors	Manager
Author	Kristófer

Name	Create a Voyage
Number	15
Priority	A
Precondition	None
Description (Base flow)	The user presses the "Create Voyage" button. The user selects a destination from a list and then inputs departure date of outgoing flight, departure time of outgoing flight, departure date of incoming flight and departure time of incoming flight.
Alternative Flow	
Post Condition	A new flight is created and listed under flight itinerary with a boolean showing whether it is fully manned or not
Source (requirements)	1,3,4
Actors	Manager

Author	Kristófer
--------	-----------

Name	List daily voyages
Number	10
Priority	A
Precondition	At least one voyage created
Description (Base flow)	Lists all voyages for a given day sorted by time with flight ID and whether it's fully manned
Alternative Flow	No voyages to display
Post Condition	User sees all voyages for a given day and if those flights are manned or not
Source (requirements)	12
Actors	Manager
Author	Kristófer

Name	Add staff to voyage
Number	16
Priority	A
Precondition	At least one voyage must exist
Description (Base flow)	The user selects Staff voyage and gets a list of voyages. After selecting a voyage from the list they get a list of employees who are free on the departure date, and can input the name or ssn of one to add them to the voyage.
Alternative Flow	User notified if no voyages are listed or if the staff member is busy with another voyage or is unavailable during that time period
Post Condition	The system displays an updated list of information about the voyage including the staff members
Source (requirements)	
Actors	Manager
Author	Sölvi

Name	Make voyage recurring
Number	24
Priority	A
Precondition	A voyage exists in the system

Description (Base flow)	The user selects Flyer, Voyages, Make voyage recurring. They can then pick daily, weekly or monthly and the number of times it should repeat, and the voyage gets copied that many times.
Alternative Flow	User notified if no destinations are listed or if a voyage being created conflicts with a preexisting one.
Post Condition	Multiple voyages exist to the same destination, at the same time of day, but with the departure and arrival dates offset by days, weeks or months
Source (requirements)	
Actors	Manager
Author	Bergur

***Notkunartilvik tengd áfangastöðum:***

Name	Create a new destination
Number	17
Priority	A
Precondition	
Description (Base flow)	The user selects "Flyer", "Destinations" and then "Add destination". They then fill out the required information.
Alternative Flow	The user is informed that the information does not meet requirements or that some of it is missing
Post Condition	The system displays the updated destination list
Source (requirements)	
Actors	Manager
Author	Sölvi

Name	Modify an existing destination
Number	6
Priority	B
Precondition	At least one destination must exist
Description (Base flow)	The user selects "Flyer", "Destinations" and "Modify destination". They then get a list of destinations. After selecting one, they can fill out the contact and emergency number fields again.
Alternative Flow	User notified if no destinations are registered or if no information has been listed on the destination he has chosen to modify

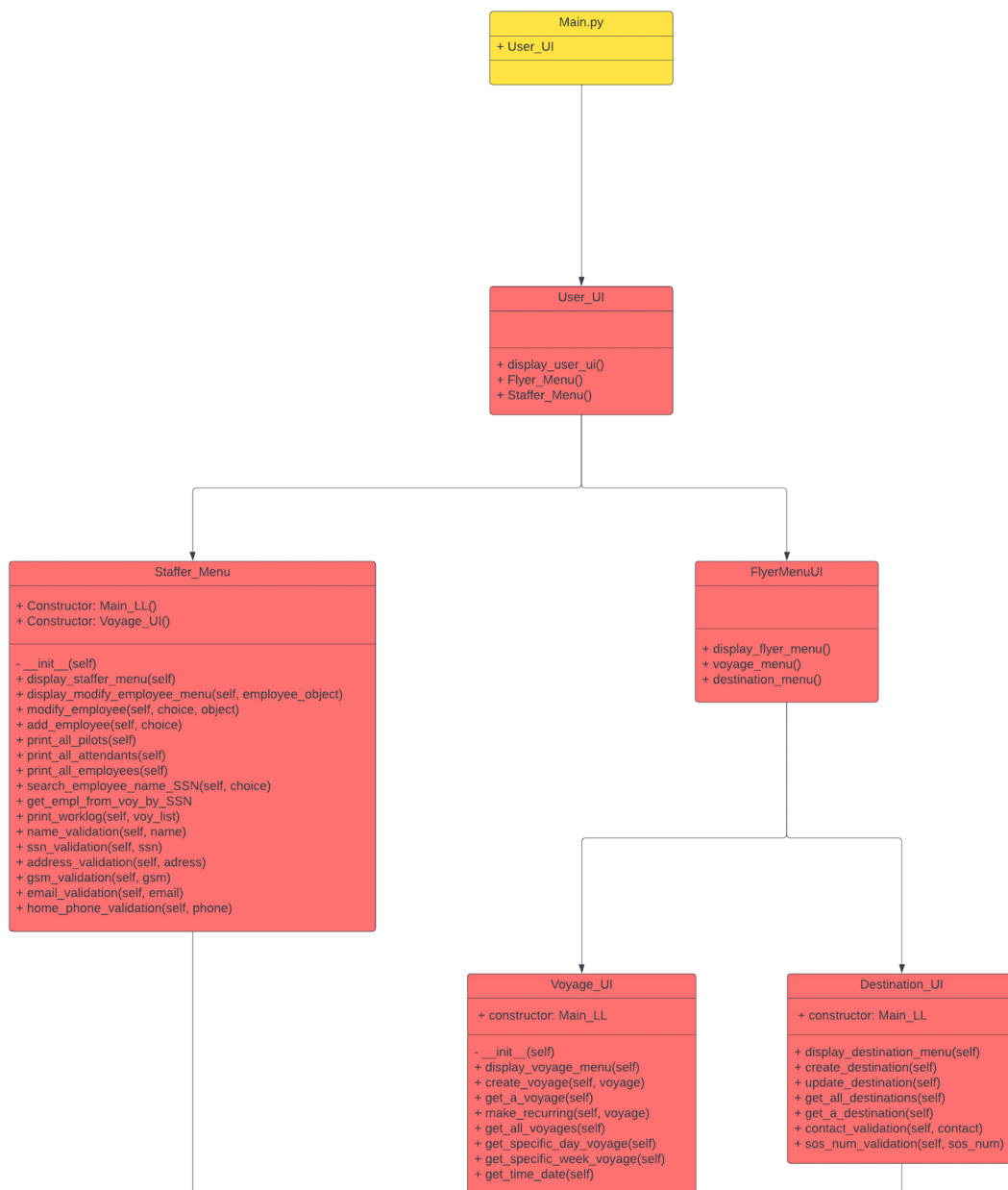
Post Condition	The system displays the updated destination information
Source (requirements)	
Actors	Manager
Author	Sölvi

Name	See list of destinations
Number	12
Priority	A
Precondition	At least one destination must be listed
Description (Base flow)	The user selects “Flyer”, “Destinations”, then “List destinations”.
Alternative Flow	User notified if no destinations are listed
Post Condition	The system displays a list of airports sorted by countries, with countries being sorted alphabetically
Source (requirements)	
Actors	Manager
Author	Sölvi

## Klasarit

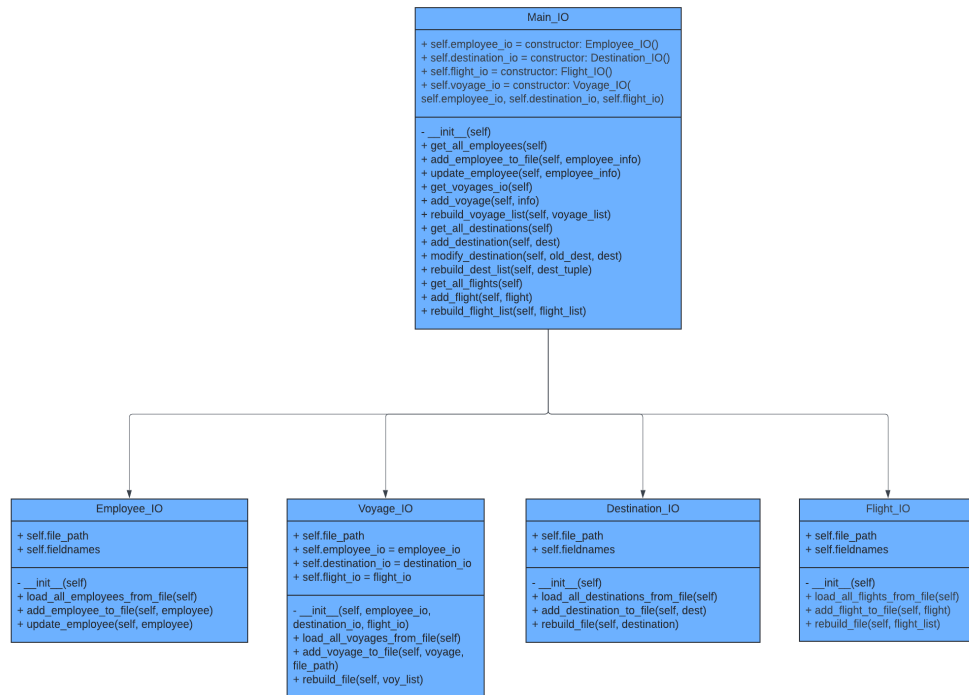
[Hlekkur](#) fyrir betri gæði.

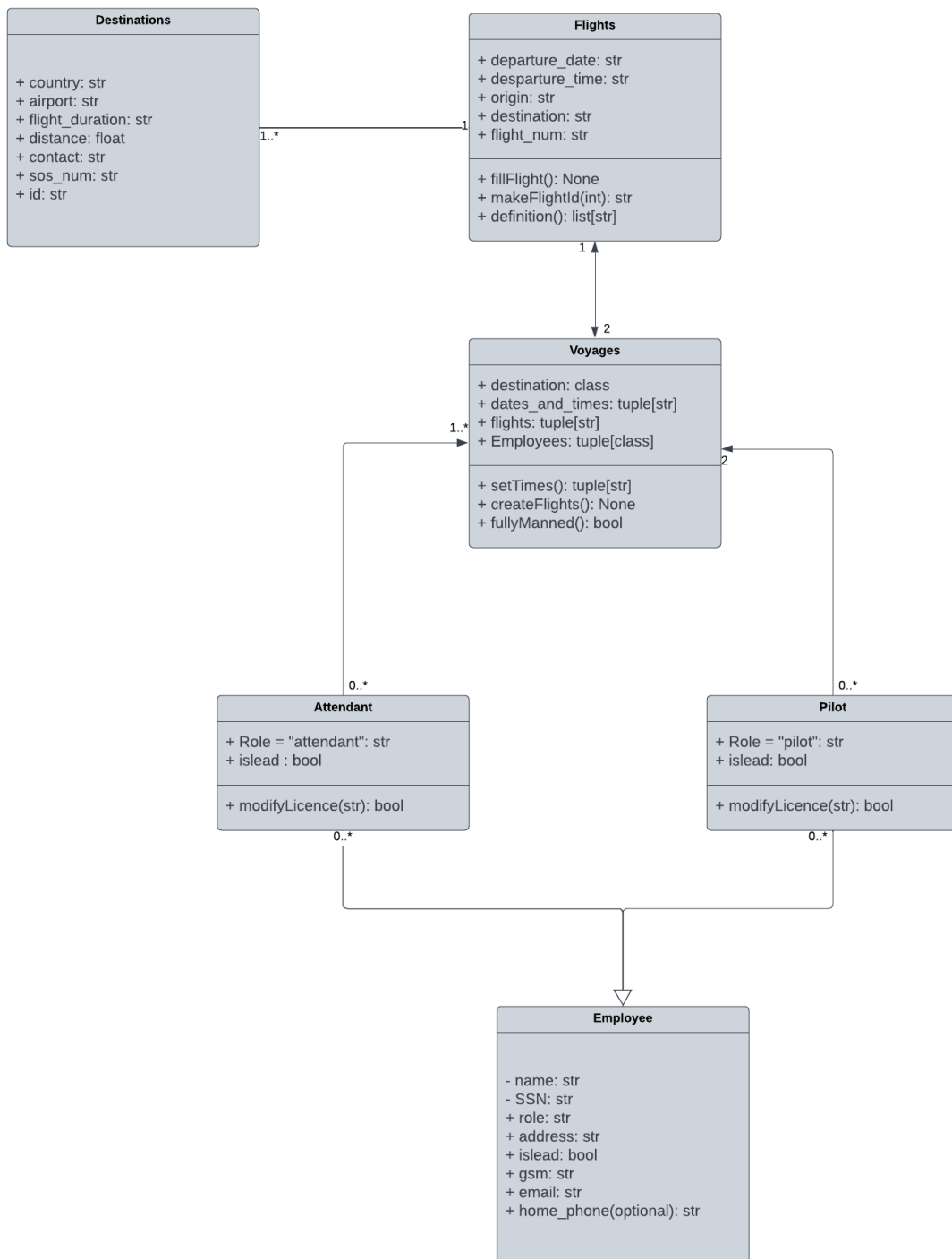
### Main forrit og UI Layer



## Logic Layer



*IO Layer*

*Models*



## Gleðileiðir

### Verkefni: Búa til vinnuferð

Task: Create Voyage

---

WELCOME TO ABOARD

Please choose your role

1. Flyer
2. Staffer
- Q. Quit

Enter number:

---

Enter number: 1

---

FLYER MENU

1. Voyages
2. Destinations
- B. Go Back
- S. Staffer Menu
- Q. Quit

Enter number:

---

Enter number: 1

---

# Voyages

1. Create Voyage
2. Make voyage recurring
3. Get All Voyages
4. Get Voyages on date
5. Get voyages in week
- B. Go Back
- M. Main Menu
- S. Staffer Menu
- Q. Quit

Enter number:

---

Enter number: 1

---

1. Use existing voyage
2. Create new voyage

Enter number:

---

Enter number: 2

---

Please pick destination number

1. Destination:  
 Airport is Nuuk  
 Country is Greenland  
 Flight duration is (HH:MM) 03:20  
 Flight distance is 750 km  
 Emergency contact is John Smith  
 SOS phone number is 5460998  
 -----
2. Destination:  
 Airport is Copenhagen  
 Country is Denmark  
 Flight duration is (HH:MM) 03:00  
 Flight distance is 500 km  
 Emergency contact is Jens Holm  
 SOS phone number is 87654678  
 -----

---

Enter number: 1

---

Input departure date for outgoing flight (yyyy-mm-dd): 2023-12-15  
 Input departure time for outgoing flight (hh:mm): 23:12  
 Input departure date for incoming flight (yyyy-mm-dd): 2023-12-16  
 Input departure time for incoming flight (hh:mm): 12:21

Voyage saved Successfully

Destination	Dates and Times	Flights	Manned
Nuuk	2023-12-15, 21:12:00	NA010	No
	2023-12-16, 12:21:00	NA011	

Press any key to go back

---

# Voyages

1. Create Voyage
2. Make voyage recurring
3. Get All Voyages
4. Get Voyages on date
5. Get voyages in week
- B. Go Back
- M. Main Menu
- S. Staffer Menu
- Q. Quit

Enter number:

## Verkefni: Skrá starfsmenn á vinnuferð

Task: Add Employee to Voyage

---

# WELCOME TO ASADZAR

Please choose your role

1. Flyer
2. Staffer
- Q. Quit

Enter number:

---

Enter number: 2

---

# STAFF MENU

1. Staff Voyage
2. All employees
3. Search Employees
4. Add employee
5. Modify employee
6. All staff not working on day x
7. All staff working on day x and dest
8. Pilots
9. Attendants

B. Go Back  
F. Flyer Menu  
Q. Quit

Enter number:

---

Enter number: 1

---

List of Voyages

1	Destination	Dates and Times	Flights	Manned
	Nuuk	2023-12-23, 10:00:00	NA030	No
		2023-12-26, 10:00:00	NA031	

Employees  
John Johnson

---

Which voyage would you like to update?  
Please respond with voyage number:

---

Please respond with voyage number: 1

---

1. Name	Role	SSN	Address	GSM Number	Email
Broman	Pilot	1231231232	Foshoway 85	9876527	jogn@gmail.com

-----  
Home Phone: 1234212  
-----

What employee would you like to add to this flight?  
Name or SSN:

---

Name or SSN: 1231231232

---

Employee added to voyage  
[b] to go back / [Enter] to continue:

---

[b] to go back / [Enter] to continue: b

---

# STAFF MENU

1. Staff Voyage
2. All employees
3. Search Employees
4. Add employee
5. Modify employee
6. All staff not working on day x
7. All staff working on day x and dest
8. Pilots
9. Attendants

- B. Go Back  
F. Flyer Menu  
Q. Quit

Enter number:

## Verkefni: Búa til starfsmann

Task: Add Employee

# WELCOME TO NORDAT

Please choose your role

1. Flyer
2. Staffer
- Q. Quit

Enter number:

Enter number: 2

# STAFF MENU

1. Staff Voyage
2. All employees
3. Search Employees
4. Add employee
5. Modify employee
6. All staff not working on day x
7. All staff working on day x and dest
8. Pilots
9. Attendants

- B. Go Back  
F. Flyer Menu  
Q. Quit

Enter number:

Enter number: 4

Add employee  
Choose employee type to add:

1. Pilot
2. Attendant
3. Exit

Enter number: 1

Enter number: 1

Please enter pilot details.

Name:

Enter country: i.e. John Johnson

Please enter pilot details.

Name: John johnson

SSN:

Enter SSN: i.e. 1232123212

Please enter pilot details.

Country: John Johnson

Airport: 1232123212

Address:

Enter Address: i.e. Dúfnahólar 10

Please enter pilot details.

Country: John Johnson

Airport: 1232123212

Address: Dúfnahólar 10

GSM:

Enter flight distance: i.e. 1234567

Please enter pilot details.

Country: John Johnson

Airport: 1232123212

Address: Dúfnahólar 10

GSM:

Enter GSM Number: i.e. 1231233

Please enter pilot details.  
Country: John Johnson  
Airport: 1232123212  
Address: Dúfnahólar 10  
GSM: 1231233  
Email:

Enter Email: john@gmail.com

Please enter pilot details.  
Country: John Johnson  
Airport: 1232123212  
Address: Dúfnahólar 10  
GSM: 1231233  
Email: john@gmail.com  
Home Phone (optional):

Enter Home Phone (optional):

Please enter pilot details.  
Country: John Johnson  
Airport: 1232123212  
Address: Dúfnahólar 10  
GSM: 1231233  
Email: john@gmail.com  
Home Phone (optional):  
Captain(y/n)?:  
-----  
Press any key to go back

Captain(y/n)?: Y

Please enter pilot details.  
Country: John Johnson  
Airport: 1232123212  
Address: Dúfnahólar 10  
GSM: 1231233  
Email: john@gmail.com  
Home Phone (optional):  
Captain(y/n)?: Y  
Employee saved!  
Press [Enter] to go back

STAFF MENU

1. Staff Voyage
  2. All employees
  3. Search Employees
  4. Add employee
  5. Modify employee
  6. All staff not working on day x
  7. All staff working on day x and dest
  8. Pilots
  9. Attendants
- B. Go Back  
F. Flyer Menu  
Q. Quit

Enter number:

**Verkefni: Breyta starfsmannaupplýsingum**

Task: Modify Employee

---

WELCOME TO ANADIR

Please choose your role

1. Flyer
2. Staffer
- Q. Quit

Enter number:

---

Enter number: 2

---

STAFF MENU

1. Staff Voyage
2. All employees
3. Search Employees
4. Add employee
5. Modify employee
6. All staff not working on day x
7. All staff working on day x and dest
8. Pilots
9. Attendants

B. Go Back  
F. Flyer Menu  
Q. Quit

Enter number:

---

Enter number: 5

---

1. Name	Role	SSN	Address	GSM Number	Email
Broman	Pilot	1231231232	Foshoway 85	9876527	jogn@gmail.com

-----  
Home Phone: 1234212

Select employee to update:

---

Select employee to update: 1

---

Choose what to update (Name and SSN cannot be changed, please create a new employee)

1. Address
  2. GSM
  3. Email
  4. Home Phone
- [b] to go back  
Enter your choice:

---

Enter your choice: 1

---

Please enter employee details.

Address:

---

Address: Somethhing 10

---

Employee info updated successfully!

Choose what to update (name and SSN cannot be changed, please create a new employee)

1. Address
  2. GSM
  3. Email
  4. Home Phone
- [b] to go back  
Enter your choice:

# STAFF MENU

1. Staff Voyage
2. All employees
3. Search Employees
4. Add employee
5. Modify employee
6. All staff not working on day x
7. All staff working on day x and dest
8. Pilots
9. Attendants

B. Go Back  
F. Flyer Menu  
Q. Quit

Enter number:



**Verkefni: Búa til áfangastað**

Task: Add Destination

WELCOME TO NANAI

Please choose your role

1. Flyer
2. Staffer
- Q. Quit

Enter number:

Enter number: 1

FLYER MENU

1. Voyages
2. Destinations
- B. Go back
- M. Main Menu
- S. Staffer Menu
- Q. Quit

Enter number:

Enter number: 2

DESTINATIONS

1. List destinations
2. Add destination
3. Modify destination
- B. Go Back
- M. Main Menu
- S. Staffer Menu
- Q. Quit

Enter number:

Enter number: 2

Add Destination  
Country:

Enter country: i.e. Greenland

Add Destination  
Country: Greenland  
Airport:

Enter airport: i.e. Nuuk

Add Destination  
Country: Greenland  
Airport: Nuuk  
Flight duration (HH:MM):

Enter flight duration: i.e. 03:20

Add Destination  
Country: Greenland  
Airport: Nuuk  
Flight duration (HH:MM): 03:20  
Flight distance in kilometers:

Enter flight distance: i.e. 750

Add Destination  
Country: Greenland  
Airport: Nuuk  
Flight duration (HH:MM): 03:20  
Flight distance in kilometers: 750  
Destination emergenc contact:

Enter destination contact: i.e. John Smith

```
Add Destination
Country: Greenland
Airport: Nuuk
Flight duration (HH:MM): 03:20
Flight distance in kilometers: 750
Destination emergent contact: John Smith
Destination emergent number:
```

---

Enter destination emergency number: 5460998

---

```
Add Destination
Country: Greenland
Airport: Nuuk
Flight duration (HH:MM): 03:20
Flight distance in kilometers: 750
Destination emergent contact: John Smith
Destination emergent number: 5460998
```

---

```
Destination saved Successfully.
Destination:
  Airport is Nuuk
  Country is Greenland
  Flight duration is (HH:MM) 03:20
  Flight distance is 750 km
  Emergency contact is John Smith
  SOS phone number is 5460998
-----
```

Press any key to go back

---

Press any key:

---

DESTINATIONS

1. List destinations
2. Add destination
3. Modify destination
- B. Go Back
- M. Main Menu
- S. Staffer Menu
- Q. Quit

Enter number:

**Verkefni: Breyta áfangastað**

Task: Modify Destination

---

WELCOME TO ADAM

Please choose your role

1. Flyer
2. Staffer
- Q. Quit

Enter number:

---

Enter number: 1

---

FLYER MENU

1. Voyages
2. Destinations
- B. Go Back
- S. Staffer Menu
- Q. Quit

Enter number:

---

Enter number: 2

---

DESTINATIONS

1. List destinations
2. Add destination
3. Modify destination
- B. Go Back
- M. Main Menu
- S. Staffer Menu
- Q. Quit

Enter number:

---

Enter number: 3

Please pick destination number

1. Destinations:

Airport is Nuuk

Country is Greenland

Flight duration is (HH:MM) 03:20

Flight distance is 750 km

Emergency contact is John Smith

SOS phone number is 5460998

Enter Number: 1

Update destination contact info:

Contact:

Contact: John Johnson

Update destination contact info:

Contact: John Johnson

Emergency number:

Emergency number: 1234567

Update destination contact info:

Contact: John Johnson

Emergency number: 1234567

Destination modified successfully

Press any key to go back

# Destinations

1. List destinations

2. Add destination

3. Modify destination

B. Go Back

M. Main Menu

S. Staffer Menu

Q. Quit

Enter number:

**Lokaorð**

Forritið er komið af stað, og helsta virkni til staðar, en þó er heilmikið sem mætti bæta við í næstu útgáfu. Næst myndum við bæta við virkni til að halda utan um flugvélar NaN-air og bæta viðmótið enn frekar til þess að leyfa notanda að nota tölvumús með því.

Við viljum þakka Gylfa og öllum TAs fyrir að leiðbeina okkur í þessu krefjandi en jafnóðum spennandi verkefni. Við lærðum heilmikið(meðal annars um hópavinnu) á aðeins 3 vikum, og okkur finnst við hafa gert okkar besta miðað við þá litlu reynslu sem við höfum. Þetta verkefni vakti áhuga okkar á hugbúnaðarþróun en frekar, og gaf okkur ómetanlega innsýn inn í þann heim.

- Hópur 17