deti

IHC – Assignment n.2

Design, prototyping and evaluation of an Interactive Application

CalendarSync UA

Group Lab P5:
Pedro Pinto – 115304
André Alves – 113962
Guilherme Santos – 113893
Diogo Guedes – 114256

Introduction

- Brief contextualization/motivation:
    - We all struggle to manage all academic events.
    - We have to manually insert new updates in our calendar.

- With CalendarSync UA:
    - Import calendar from Paco and eLearning
    - Remove "trash tasks"
    - Export only important tasks

Requirements analysis

- Topics:
  - Personas
  - Scenarios
  - Analyze Main Tasks
  - Identify Requirements

Personas

UA Student

Fictional name: António Maria

Job title: Student

Demographics: 22 years old & Bachelor in Design

Background: Joined a new semester and intends to synchronize events from University of Aveiro applications to his personal Outlook Calendar.

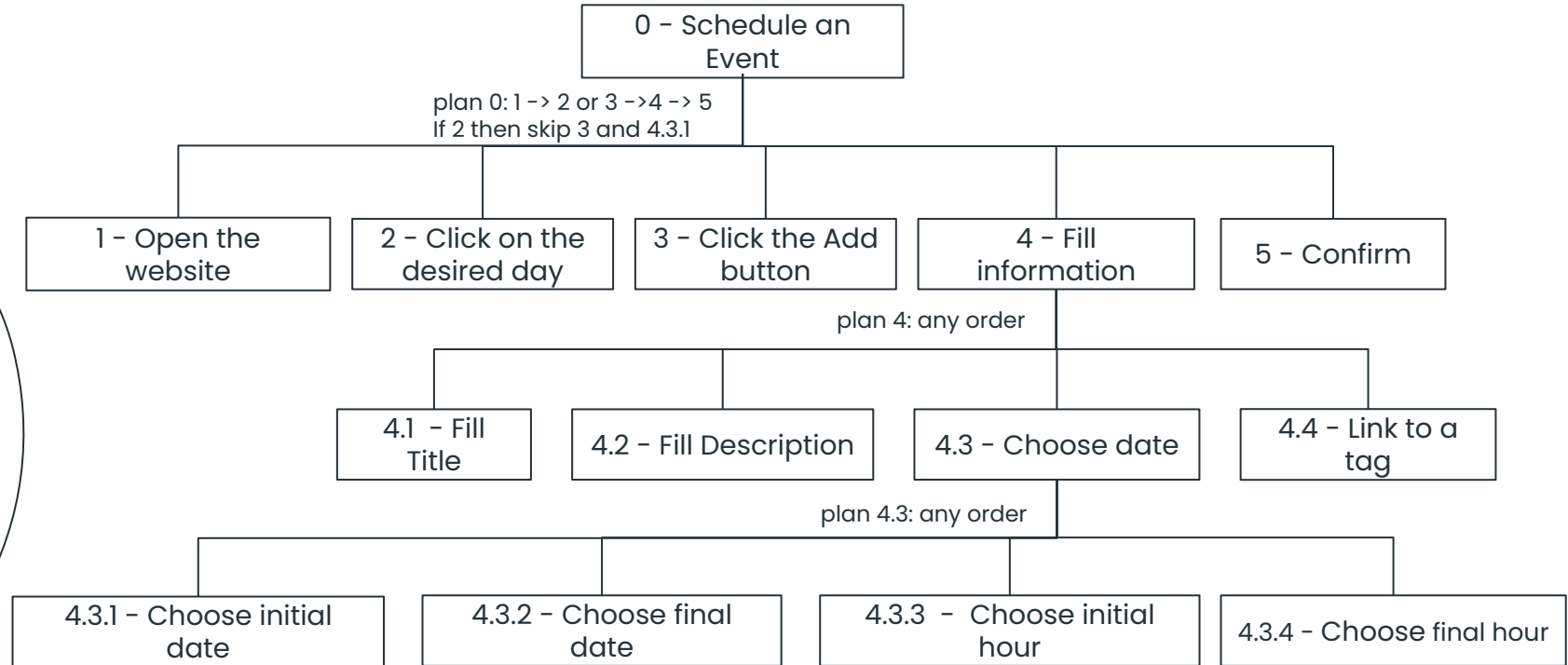**Environment:** He is using the library internet with a stable connection to the internet.

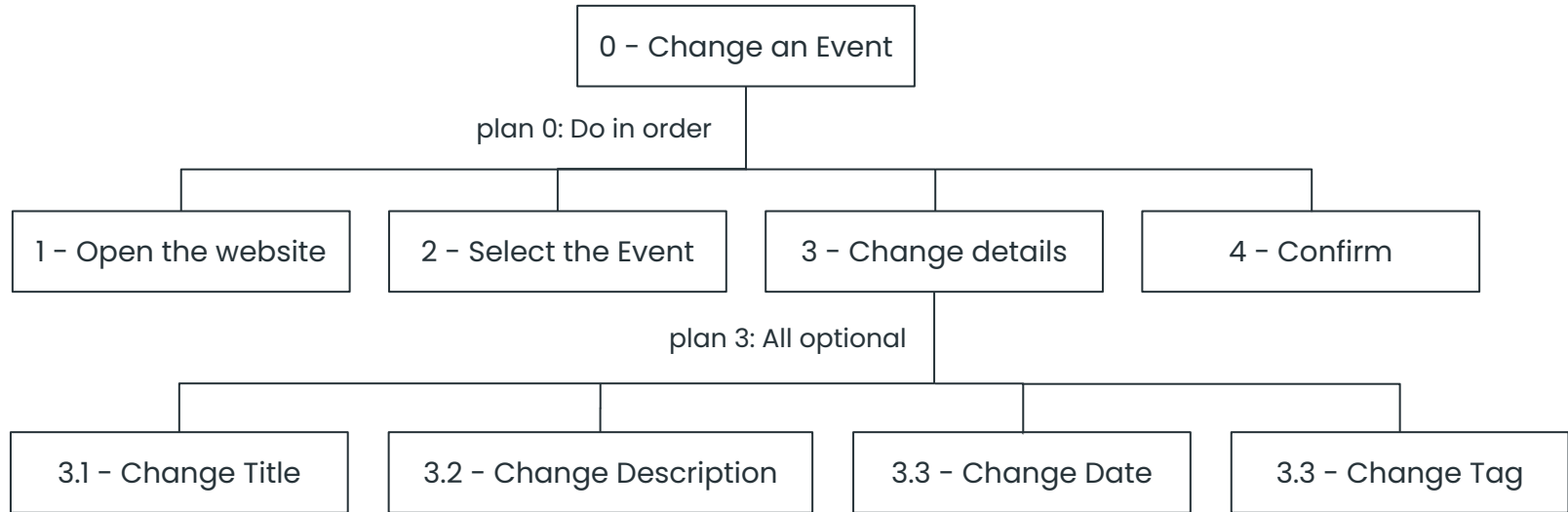**Needs:** Something to synchronize events easily, without importing the "trash events"

Scenarios

- **Student:** António is seating at the Library wondering how many exams and deadlines he has in a specific subject. He wants to update his personal calendar but he doesn't want the unnecessary events that come along when he imports in the usual platform, so:
  - He goes to our web page.
  - Import all events
  - Do the changes that he needs (add/edit/delete events)
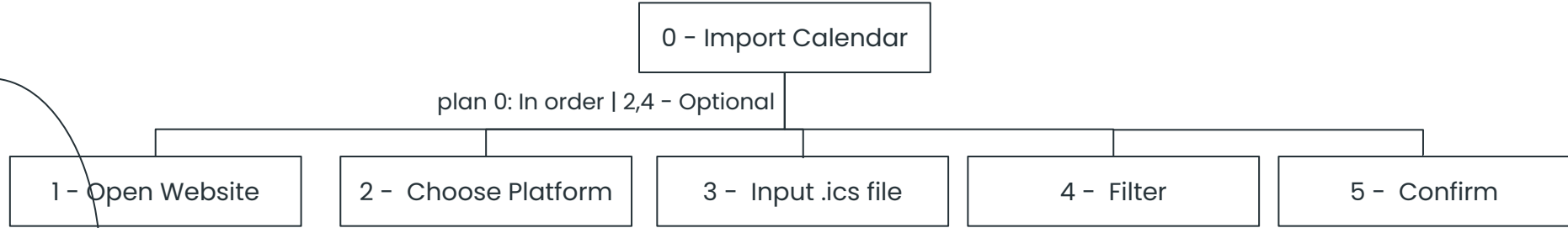 - Filter at his choice
  - Export to personal calendar
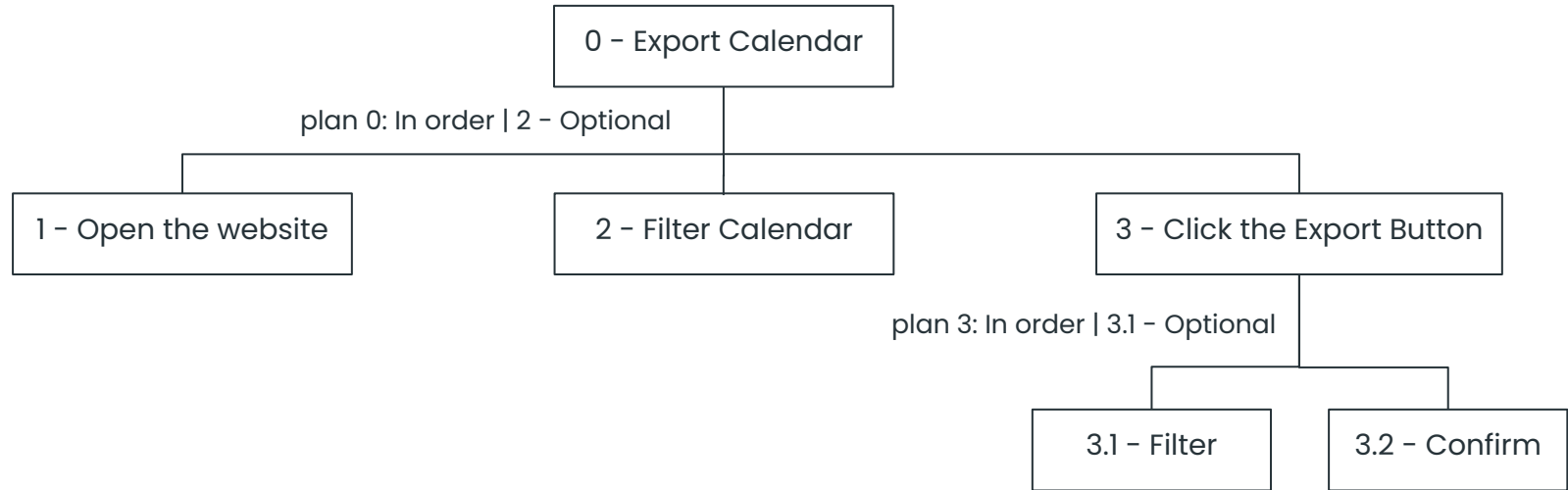
Tasks – Schedule an Event

0 – Schedule an Event

plan 0: 1 –> 2 or 3 –>4 –> 5
If 2 then skip 3 and 4.3.1

1 – Open the website

2 – Click on the desired day

3 – Click the Add button

4 – Fill information

5 – Confirm

plan 4: any order

4.1 – Fill Title

4.2 – Fill Description

4.3 – Choose date

4.4 – Link to a tag

plan 4.3: any order

4.3.1 – Choose initial date

4.3.2 – Choose final date

4.3.3 – Choose initial hour

4.3.4 – Choose final hour

Tasks – Change an Event

```
                          ┌──────────────────────┐
                          │  0 - Change an Event  │
                          └──────────────────────┘
                     plan 0: Do in order
    ┌────────────────┬───────────────┴────────────┬───────────────────┐
┌──────────────┐ ┌──────────────────┐ ┌────────────────────┐ ┌──────────────┐
│ 1 - Open the │ │ 2 - Select the   │ │ 3 - Change details │ │ 4 - Confirm  │
│   website    │ │     Event        │ │                    │ │              │
└──────────────┘ └──────────────────┘ └────────────────────┘ └──────────────┘
                            plan 3: All optional
        ┌──────────────┬──────────────┴──────────┬──────────────────┐
┌──────────────┐ ┌────────────────────┐ ┌──────────────┐ ┌──────────────┐
│ 3.1 - Change │ │ 3.2 - Change       │ │ 3.3 - Change │ │ 3.3 - Change │
│    Title     │ │     Description    │ │     Date     │ │     Tag      │
└──────────────┘ └────────────────────┘ └──────────────┘ └──────────────┘
```

Tasks – Import Calendar

```
                        ┌─────────────────────────┐
                        │   0 - Import Calendar    │
                        └─────────────────────────┘
         plan 0: In order | 2,4 - Optional
```

| 1 - Open Website | 2 - Choose Platform | 3 - Input .ics file | 4 - Filter | 5 - Confirm |

8

Tasks – Export Calendar

0 – Export Calendar

plan 0: In order | 2 - Optional

1 – Open the website

2 – Filter Calendar

3 – Click the Export Button

plan 3: In order | 3.1 - Optional

3.1 – Filter

3.2 – Confirm

Requirements

- Non-functional requirements
  - **Ease of use**
  - Reliability and availability
  - Capacity and scalability
  - Portability

- Functional requirements
  - User should have the possibility to **import** calendar from **Paco and eLearning**
  - User should be able to **set a new event**
  - User should be able to **change/remove** current events
  - User should have the possibility to **filter** the calendar
  - User should have the possibility to **import/export** calendar

10
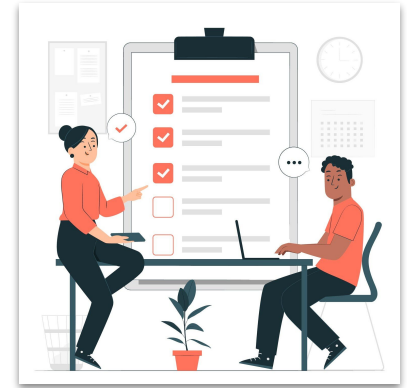
Low Fidelity Prototype (LFP)

LFP using an A3 paper and post-its
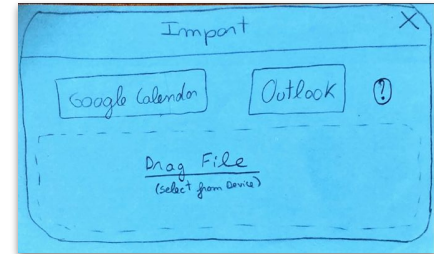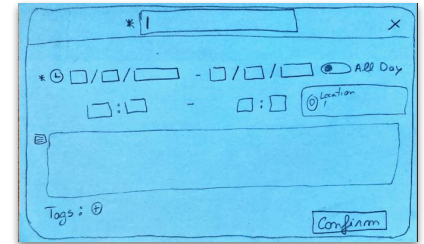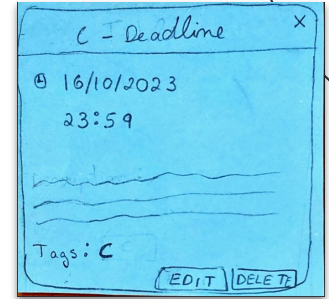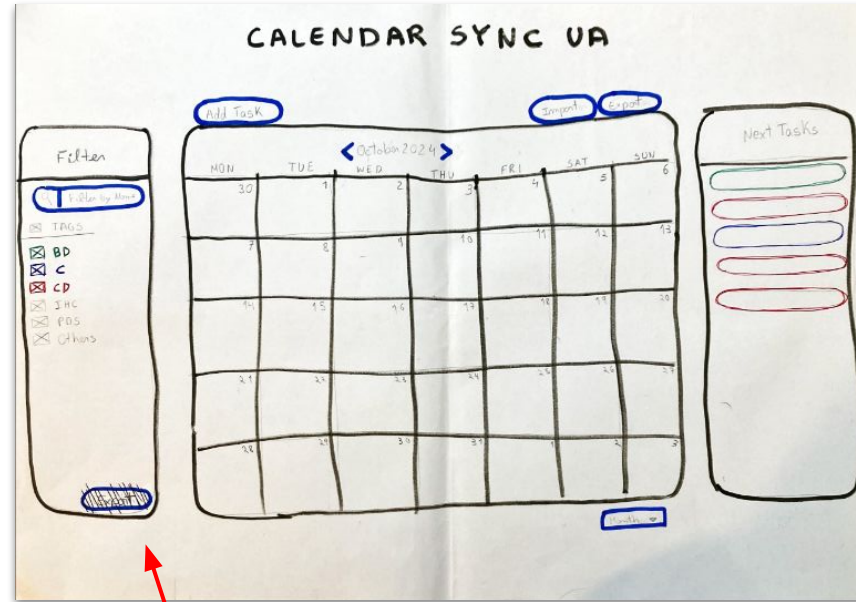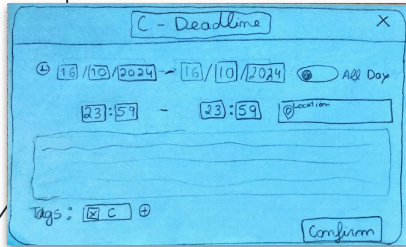
removed during the LFP

Low Fidelity Prototype (LFP)

LFP using an A3 paper and post-its
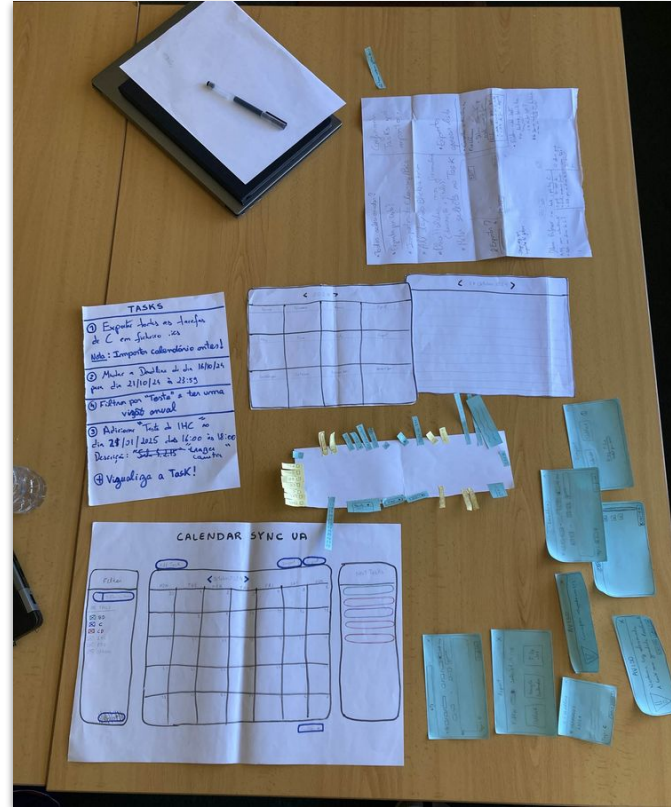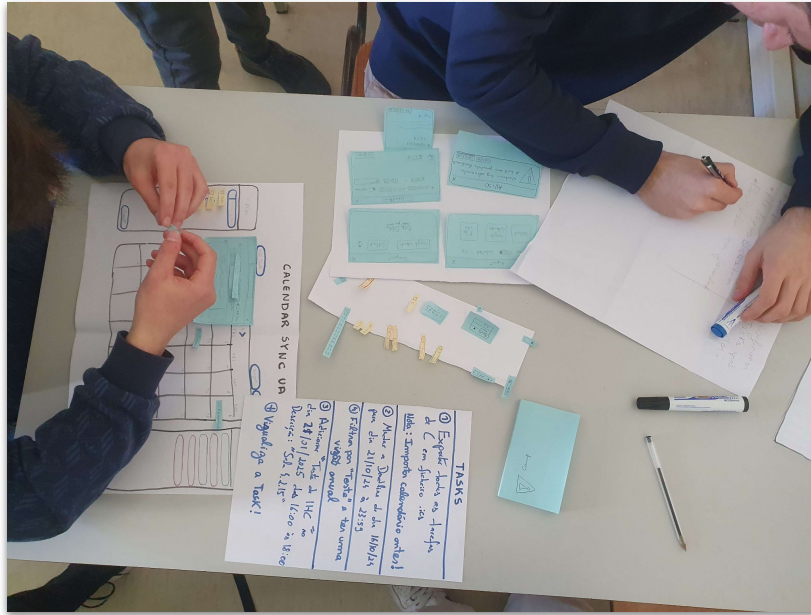
LFP User Evaluation

- Participants

    - 5 students with ages between 19-22.
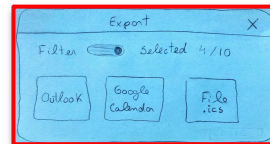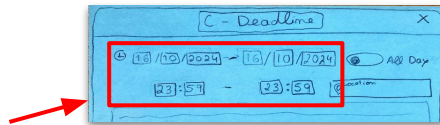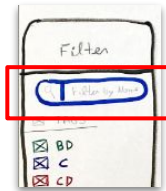
- Tasks

    1. Export all tasks of C class to a .ics file.

    2. Change the deadline from 16/10/24 to 21/10/24 at 23:59.

    3. Filter by *Teste*.

    4. Add *Teste de IHC* on 21/1/2025 from 16:00 to 18:00 and add a description Sala 5.2.15.

13
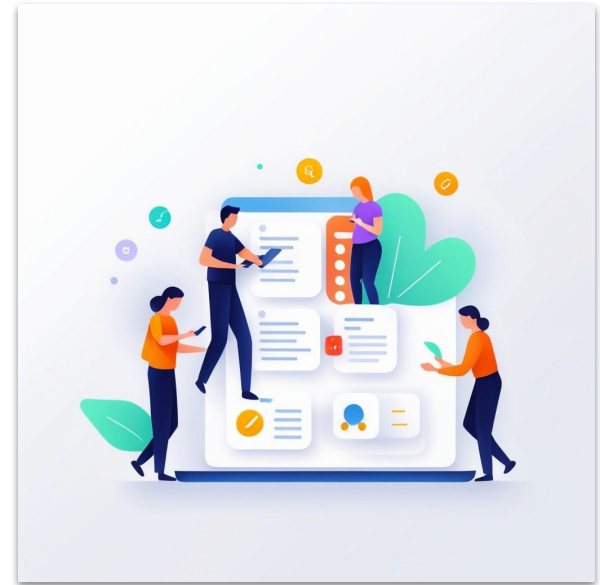
Problems and solutions

Errors found

Problems Found	Solutions
• Some users didn't realize it was necessary to introduce both a **start date** and an **end date**	• Add subtitles "Start date" and "End date"
• When exporting, there is **no feedback** on what is actually being exported	• Show selected events on export modal
• No **visual confirmation** of the tasks we were importing	• Show which events are being imported
• **Search bar** is ambiguous and useless	• Remove unnecessary search bar
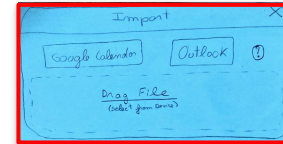
Development

Front-end:

Back-end:
(import/export files)

 JavaScript

Communication:

 GitHub

Main Interface

Main Interface

Import ICS Files   ×

Confirmation: Import (42)

- ☑ Métodos Probabilísticos Para Engenharia Informática
- ☑ Sistemas Operativos
- ☑ Computação Distribuída
- ☑ Padrões E Desenho De Software
- ☑ Sistemas Multimédia
- ☑ Algoritmos E Estruturas De Dados
- ☑ Compiladores
- ☑ Interação Humano-computador

Selected (42)

exam
Métodos Probabilísticos Para Engenharia Informática
02:00 PM - January 17, 2024

exam
Métodos Probabilísticos Para Engenharia Informática
04:00 PM - January 17, 2024

exam
Métodos Probabilísticos Para Engenharia Informática
02:00 PM - February 2, 2024

Add Event   ×

Title:

Write here

Description:

Write here

Start Date:	**End Date:**
05 / 12 / 2024	05 / 12 / 2024

Start Hour:	**End Hour:**
-- : -- --	-- : -- --

Tag:

Select a tag

+ Add Event   **Close**

Export Events to ICS   ×

Confirmation: Export (9)

- ☐ Computação Distribuída
- ☐ Padrões E Desenho De Software
- ☐ Sistemas Multimédia
- ☐ Algoritmos E Estruturas De Dados
- ☐ Compiladores
- ☑ Interação Humano-computador
- ☐ Redes E Serviços
- ☐ Bases De Dados

Selected (9)

exam
Métodos Probabilísticos Para Engenharia Informática
02:00 PM - January 17, 2024

exam
Métodos Probabilísticos Para Engenharia Informática
04:00 PM - January 17, 2024

exam
Métodos Probabilísticos Para Engenharia Informática
02:00 PM - February 2, 2024

Main Problems

- Brief list:

  - Paco calendar codification

  - Conversion to/from *.ics* files

  - Setup backend to allow import/export files

  - Dynamic synchronization between components

  - Uniformization of time between components

paco *iso-8859-1* codification

BEGIN%3AVCALENDAR%0D%0APRODID%3A-//github.com/rianjs/ical.net//NONSG
ML%20ical.net%204.0//EN%0D%0AVERSION%3A2.0%0D%0ABEGIN%3AVEVENT
%0D%0ACLASS%3APUBLIC%0D%0ACOMMENT%3A%0D%0ACREATED%3A2024
0513T223124%0D%0ADESCRIPTION%3A40437-ALGORITMOS%20E%20ESTRUT
URAS%20DE%20DADOS%3AFN%0D%0ADTEND%3A20240112T160000%0D%0AD
TSTAMP%3A20240513T213124Z%0D%0ADTSTART%3A20240112T140000%0D%0
ALOCATION%3AANF.%203.1.15%5C%2C%20ANF.%20IV%5C%2C%20ANF.%20V
%5C%2C%20ANF.%205.2.22%5C%2C%205.1.62%0D%0ASEQUENCE%3A0%0D%
0ASUMMARY%3Aexam%0D%0AUID%3A0d31a6b6-bee2-4f8f-82cd-971012984a47%
0D%0AEND%3AVEVENT%0D%0ABEGIN%3AVEVENT%0D%0ACLASS%3APUBLIC
%0D%0ACOMMENT%3A%0D%0ACREATED%3A20240513T223124%0D%0ADESC
RIPTION%3A40437-ALGORITMOS%20E%20ESTRUTURAS%20DE%20DADOS%3
ARE%0D%0ADTEND%3A20240131T160000%0D%0ADTSTAMP%3A20240513T213
124Z%0D%0ADTSTART%3A20240131T140000%0D%0ALOCATION%3AANF.%20IV
%5C%2C%20ANF.%20V%5C%2C%205.3.3%0D%0ASEQUENCE%3A0%0D%0ASU
MMARY%3Aexam%0D%0AUID%3Ae1baf8ff-2285-4c3a-aa17-7e5e9388af7b%0D%0
AEND%3AVEVENT%0D%0ABEGIN%3AVEVENT%0D%0ACLASS%3APUBLIC%0D
%0ACOMMENT%3A%0D%0ACREATED%3A20240513T223124%0D%0ADESCRIPT
ION%3A40432-SISTEMAS%20MULTIM%C9DIA%3ADZ%0D%0ADTEND%3A202309
07T170000%0D%0ADTSTAMP%3A20240513T213124Z%0D%0ADTSTART%3A202
30907T150000%0D%0ALOCATION%3AANF.%20IV%0D%0ASEQUENCE%3A0%0D
%0ASUMMARY%3Aexam%0D%0AUID%3A3d7e8e55-9fc9-4b25-8441-a87445e4881
c%0D%0AEND%3AVEVENT%0D%0ABEGIN%3AVEVENT%0

FP User Evaluation

FP - Functional Prototype

Participants

12 students with ages between 19-22.

Approach

- Freedom & Stress free
- taking notes on Observer Script
- finally ask for an assessment of the proposed task

Tasks

- **Import calendars:**
  - Import Paco's and eLearning's calendars for the IHC events.
  - Verify if it was successful.

- **Delete task:**
  - Delete the undesired task that was imported from Paco (IHC task from September 2023).
  - Verify if it was successful.

- **Modify task:**
  - Change the names of the IHC exams to ("Época Normal" and "Época Recurso").
  - Verify if it was successful.

- **Add task:**
  - Add a "Bootcamp" event for IHC from May 18 (10 AM) to May 25 (11 AM).
  - Verify if it was successful.

- **Export filtered calendar:**
  - Export the events you just filtered.
  - Verify if it was successful.

Functional Prototype (FP)

Usability Test

context!

Usability test
Tasks for CalendarSync UA

Contexto geral:

É aluno da Universidade de Aveiro e repara que tem novas tarefas/exames de IHC tanto no eLearning como no Paco e precisa de as exportar para o seu calendário pessoal.
Para isso vai utilizar a nossa aplicação para ir buscar todos os eventos de IHC do calendário do Paco e do eLearning.
Visto que a importação irá conter algum "lixo" vai proceder a uma filtragem e a umas pequenas transformações nos eventos.
Finalmente, exporta o calendário.

Tasks:

Task 1 — Importar o calendário do Paco e do eLearning, no formato `.ics`, contendo apenas eventos de IHC. Verificar se foram importados com sucesso.
Very difficult 1 2 3 4 5 Very easy

Task 2 — Qual a duração do exame de IHC em Setembro? de 2023
Very difficult 1 2 3 4 5 Very easy

Task 3 — Eliminar o exame de IHC de Setembro. (visto que o evento já passou)
Very difficult 1 2 3 4 5 Very easy

Task 4 — Mudar os nomes dos exames de IHC de dia 17/06 e dia 04/07 para "Exame Época Normal" e "Exame Época Recurso" respetivamente.
Very difficult 1 2 3 4 5 Very easy

Task 5 — Adicionar o evento "Bootcamp" com a tag IHC de dia 18 de maio (10h) a dia 25 de maio (11h).
Very difficult 1 2 3 4 5 Very easy

Task 6 — Exportar o calendário que acabou de fazer, no formato `.ics`, contendo unicamente eventos de IHC
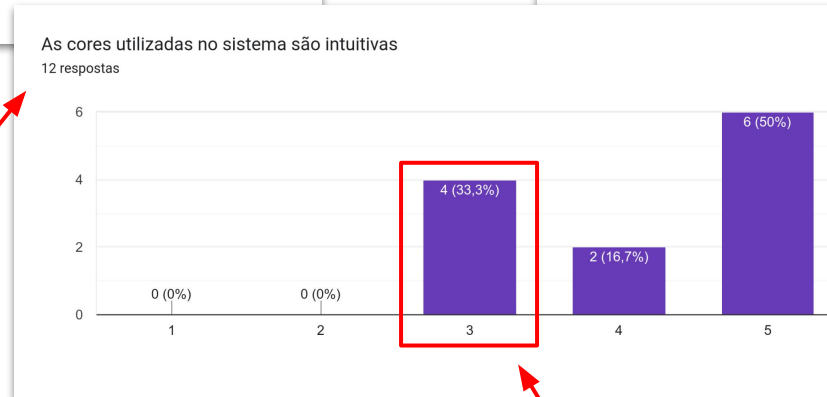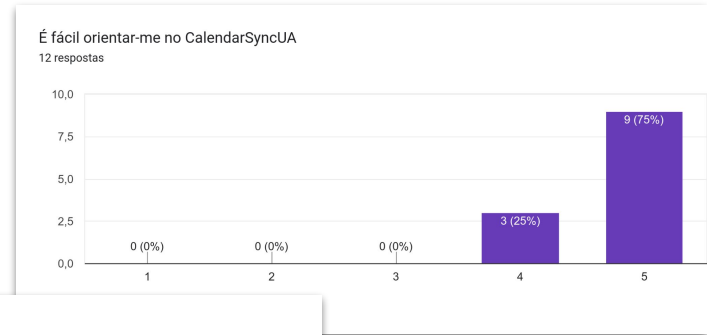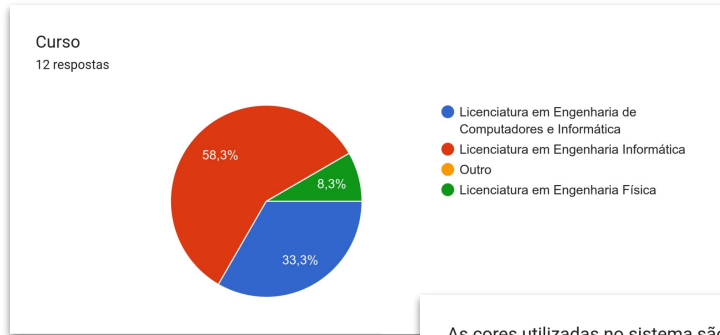Very difficult 1 2 3 4 5 Very easy

20

Observer Script Results

In Class Results

	Task 1	Task 2	Task 3	Task 4	Task 5
U-1	✔ 5	✔ 5	✔ 5	✔ 5	✔ 5
U-2	✔ 4	✔ 3	✔ 5	✔ 5	✔ 5
U-3	✔ 5	✔ 5	✔ 5	✔ 5	✔ 5
U-4	✔ 5	✔ 4	✔ 4	✔ 5	✔ 5
U-5	✔ 5	✔ 4	✔ 5	✔ 5	✔ 5
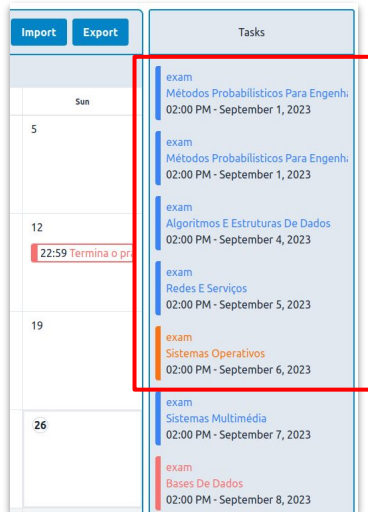
SUS – Forms Results

General Important Forms Results

Curso
12 respostas

- Licenciatura em Engenharia de Computadores e Informática
- Licenciatura em Engenharia Informática
- Outro
- Licenciatura em Engenharia Física

58,3%
33,3%
8,3%

É fácil orientar-me no CalendarSyncUA
12 respostas

0 (0%) 0 (0%) 0 (0%) 3 (25%) 9 (75%)
1 2 3 4 5

As cores utilizadas no sistema são intuitivas
12 respostas

0 (0%) 0 (0%) 4 (33,3%) 2 (16,7%) 6 (50%)
1 2 3 4 5

Forms with 15 questions: https://forms.gle/xy2TUZ5QcobrMvAn7

SUS – Forms Conclusion

- Problems
  - When exporting, the hour was set 1 hour early
  - Event date format wasn't uniform
  - Tags color are not unique

Se pretender pode deixar aqui comentários sobre o sistema, como funcionalidades que gostaria de ver adicionadas, ou até mesmo outros aspectos não abordado pelas perguntas.

Penso que o formato de data: dd/mm/yyyy poderia ser mais consistente. Para além disso, está muito bom!

random colors are a problem!

Demonstration

Repositório: https://github.com/pedropintoo/CalendarSyncUA
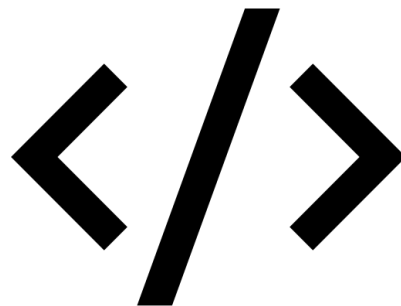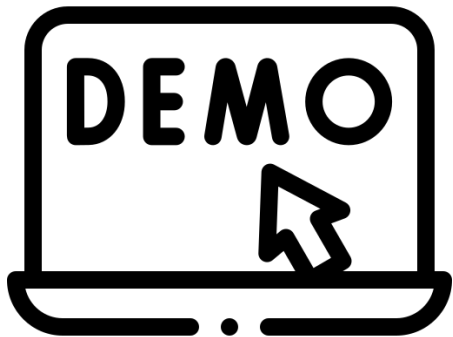
(video)

Heuristic Evaluation

1. Understand the 10 Usability Heuristics**

2. Evaluate Independently (~30-60 minutes)

3. Consolidate Identified Issues
   - All agree?
   - Set an agreed Severity**:
     - 0 = I don't agree that this is a usability problem at all
     - 1 = Cosmetic problem
     - 2 = Minor usability problem
     - 3 = Major usability problem
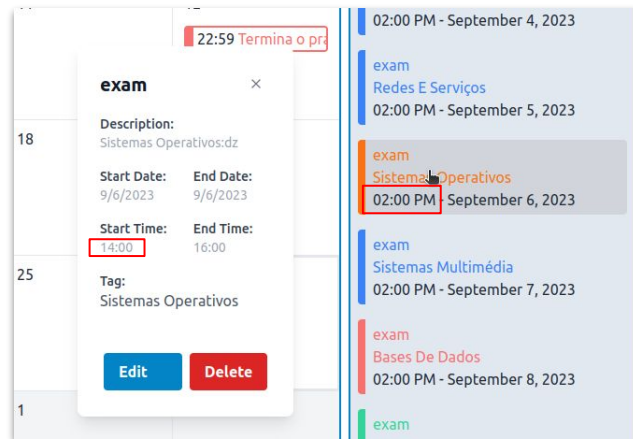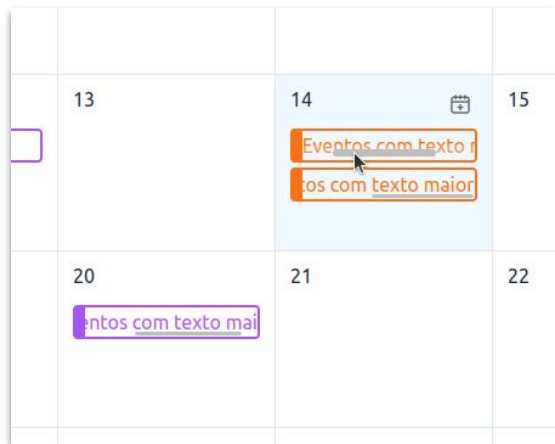   - 4 = Usability catastrophe

10 USABILITY HEURISTICS: HTTPS://WWW.NNGROUP.COM/ARTICLES/TEN-USABILITY-HEURISTICS/

25

Heuristic Evaluation

Issue: Hour format is not consistent. Some places with 12-hour (AM-PM) others with 24-hour format.

Heuristic: Consistency and Standards

Severity: 1

Issue: Scroll in event/task didn't work in certain positions

Heuristic: Consistency and Standards

Severity: 1

Heuristic Evaluation

Issue: Some buttons in light mode others in dark

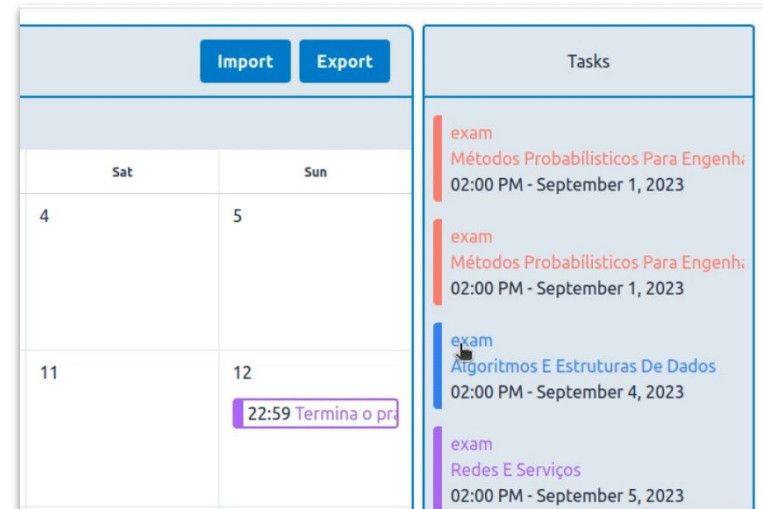**Heuristic:** Consistency and Standards

Severity: 1

Issue: Event's modal appears to be clickable

Heuristic: Consistency and Standards

Severity: 1

Standard website exit button:

[check here]: this image should be this GIF

Heuristic Evaluation

	André	Diogo	Guilherme	Pedro
Problem found	**Severity**	**Severity**	**Severity**	**Severity**
Consistency and Standards - Hour format not consistent	1	X	1	X
Consistency and Standards - Scroll view didn't work in certain touch positions	1	1	1	2
Consistency and Standards - Event's modal appears to be clickable	X	1	1	1
Consistency and Standards - Some buttons in light mode others in dark	1	X	X	1

Future work

- For the near future we want to:
  - Fix **Heuristic Evaluation** problems
  - Add year/day view
  - Add dark mode option
  - Create a page to login/sign up so the calendar could be saved online
  - Integration with Paco and eLearning

deti

IHC – Assignment n.2

Design, prototyping and evaluation of an Interactive Application

Special thank you, for helping us improve our project!

Questions?

Work distribution:

Pedro Pinto – 26%
André Alves – 26%
Guilherme Santos – 26%
Diogo Guedes – 22%