|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Practicum Final Exam – Odd Semester Year 2021/2022** | | | | | | |
| **Subject** | | | **COMP6153001 – Operating System** | | |  |
| **Class** | **:** | **BB08 / BK01** | | **Start Date** | **: 12 January 2022** |
| **Lecturer** | **:** | **D2518 - Rony Baskoro Lukito, S.Kom., M.Kom**  **D3366 - Bayu Kanigoro, S.Kom., M.T.** | | **Start Time** | **: 13:20 WIB** |
| **End Date** | **: 12 January 2022** |
| **End Time** | **: 15:20 WIB** |

**PERATURAN UJIAN:**

*Exam Regulations:*

* Mahasiswa tidak diperbolehkan berdiskusi dan/atau bekerja sama dengan peserta ujian lainnya

*Student is not allowed to discuss and/or work together with other exam participants*

* Mahasiswa tidak diperbolehkan untuk membuka dan menyalin dari **BUKU** atau **CATATAN**, **VIDEO** dari pengajar (recording kelas, VBL, Youtube, dsb) dan **REFERENSI** lainnya

*Student isn't allowed to open and copy from any resources such as notes, videos (class recording, VBL, Youtube, etc) and other references*

* Mahasiswa tidak diperbolehkan membuka dan menyalin jawaban dari internet (google, stackoverflow, dsb)

*Student isn't allowed to open and copy answer from the internet (google, stackoverflow, etc)*

* Asisten **BERHAK** memberi nilai 0 **(NOL)** bagi peserta ujian yang melakukan segala bentuk kecurangan

*Assistant is able to give 0 (ZERO) score for exam participant who does any cheating actions*

* Kumpulkan jawaban tepat pada waktunya, apabila terlambat mengumpulkan maka jawaban tidak akan dikoreksi dan nilai mahasiswa adalah 0

*Submit the answer on time, if not, then the answer will not be checked, and the students will receive 0 (ZERO)*

* Bila Anda tidak membaca peraturan ini, maka Anda dianggap telah membaca dan menyetujuinya

*If you have missed to read these regulations, so you are considered to have read and agreed on it*



**SOFTWARE YANG DIGUNAKAN:**

*Software will be used:*

* Java 8
* Eclipse 2020.6
* NachOS 5.0j

**FILE YANG DIKUMPULKAN:**

*File must be collected:*

* JAVA
* CLASS

**PERHATIAN!**

*Attention!*

* Bagi yang mengerjakan tidak sesuai dengan soal, maka akan diberikan nilai **NOL (0)**

*For those who do not work in accordance with the exam case will be marked as* ***ZERO (0)***

* Bagi yang mengerjakan tidak sesuai dengan software dan versi yang telah ditetapkan, maka akan tetap dikoreksi dengan software dan versi yang telah ditetapkan

*For those who do not work in accordance with the software and specific version will be corrected by the predefined software and version*

* Kompres semua jawaban yang akan diunggah. Pastikan format pengumpulan nama file dan ekstensi sesuai dengan format berikut: **[NIM]-[NAMA].zip**

*Compress all file that will be uploaded. Make sure the format for collecting file name and extension according to the following format:* ***[NIM]-[NAME].zip***

**Important Notes**:

1. Use your **own Console** and **Scheduler (FIFO)**.
2. Youmustuse **Semaphore** to **control** operation.
3. You must use **Timer** to generate tick of time.
4. You must use **File System** to save the data.
5. Use **KThread**.

**Soal**

*Case*

**Bluejack Juice Store**

**Bluejack Juice Store** is a Juice Store that is famous on the BlueJack land, the Storekeeper wanted to make an application that can **manage juices that will be delivered.** The features provided in this application are insert, view, and deliver the items. you are asked to create the application using **nachOS** in **Java programming language**.

In the start of the application, the program will look for a file named **“Juices.txt”** which will be **converted into list of the items on the store** and load it to our system with the help of file system if the file is available.

After the process has been completed, the application will then show **4 menus** which represents feature in the application, which are:

* **Add Juice**
* **View Juice**(**s**)
* **Deliver**
* **Exit**

Background pattern

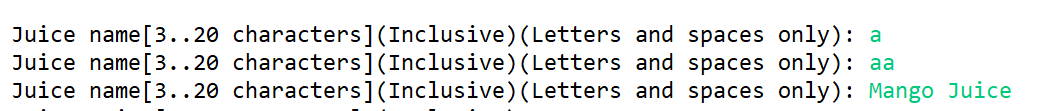
Description automatically generated with low confidence

**Figure 1. Main Menu**

1. **Add item**

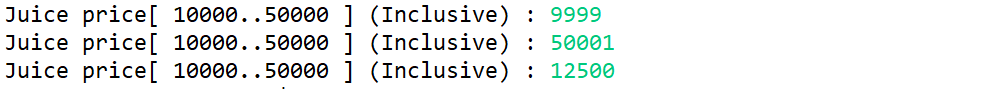
The first menu option let the user **insert a new Juice into the system.** This option requires the user to input information regarding the item with the following detail:

* Ask the user to input **Juice**’**s name**. The Juice’s name must be **between 3 and 20 characters (Inclusive)** and **contains only alphabets** and **spaces**.



**Figure 2. Juice’s name input**

* Ask the user to input **Juice’s price.** The Juice’s price must between **10000** and **50000 (Inclusive)**



**Figure 3. Juice’s price input**

* Ask the user to inputwhether the use wants **Ice or not**. The answer must **between “Yes”** or **“No”** (**Case Sensitive**)

Text

Description automatically generated with low confidence

**Figure 4. Ice input**

* After all the required input has been filled, **save the input file named “Juices.txt”** with the following format.

**[Juice’s Name]#[Juice’s Price]#[Juice’s Ice]**

* When the inputted information has been saved, **show success message** to the user.

A picture containing text

Description automatically generated

**Figure 5. Success**

1. **View Juice**(**s**)

The second option of the menu allows the user to **view all data read by file system.** The process follows the following steps which are:

* **Check** if item list **has any data**. If the Juice list **didn’t have any data**, the application **shows an error message** to the user.

Background pattern

Description automatically generated with low confidence

**Figure 6. View validation**

* Otherwise, if the Juice list **already filled or have list of Juices,** the application will **show all files received using KThread and Scheduler** (**FIFO Concept**)**.** The item **will be** **shown with delay 1000 milliseconds** (**using Thread sleep**)

Text

Description automatically generated with low confidence

**Figure 7. View all data**

1. **Deliver**

The third option in the menu allows the user to **deliver all Juices in the list.** The deleting process follows the following steps:

* **Check** if the Juice list **has any data.** If the Juice list **didn’t have any data,** the application will **show an error message** to the user.

Chart

Description automatically generated with low confidence

**Figure 8. Deliver validation**

* Otherwise, the application **will** **print all item on the list while removing them from the list one by one using FIFO Concept.** The item **will be** **shown with delay 1000 milliseconds (using Thread sleep).**

A picture containing graphical user interface

Description automatically generated

**Figure 9. Deliver Juices**

* After the Juice’s delivery has been **completed successfully, Update the data** in file **“Juices.txt”** and redirect the user back **to the main menu.**

1. **Exit**

If the user chooses the fourth menu, the application will **print tick of time using a timer** and **show** **the user a message** that says: **“Thank you. Good Bye !”.**

****

**Figure 10. Exit**

**Must be collected:**

1. Java Project (Including NachOS and student’s code) compressed (.zip)