Programare avansata pe obiecte – laborator 0 (prerechizite)

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https://github.com/alina-puscasu/pao_lab_2022

1 Evaluare

- Proiectul de laborator va consta intr-o aplicatie in care veti aplica toate cele studiate la curs/laborator (temele **TBD**)
- Este structurat in etape (priviti-le ca pe niste colocvii)
- Fiecare etapa va avea un punctaj asociat comunicat dinainte
- Conditii de punctare: nu trebuie sa aiba erori de compilare si sa se implementeze cerintele date

2 Prerechizite

Ce e Java?

- **JRE** – Java Runtime Environment
  - Ne ajuta sa rulam programe java
  - Include JVM (Java Virtual Machine) si comanda java

- **JDK** – Java Development Kit
  - Ne ajuta sa dezvoltam programe java
  - Contine tot ce are JRE + javac (compilator) si alte tool-uri precum javadoc

Ce versiune de Java sa folosesc?

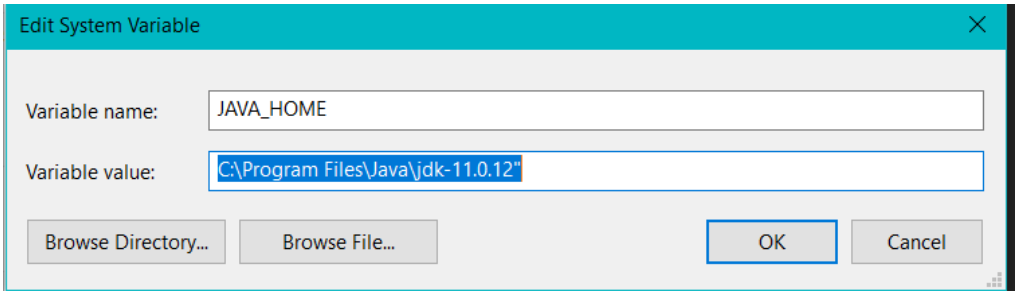
- **Cea mai noua versiune cu LTS (Long term support): 17**
- Cea mai noua versiune aparuta de Java: 18 to be released – March 2022
- Nu trebuie sa stiti o versiune anume, schimbarile nu sunt majore de la una la alta - Exceptie face aparitia Java 8 si introducerea lambda expressions/streams api, versiune care a venit cu multe implementari importante

2.1 Instalare Java - kit de dezvoltare JDK

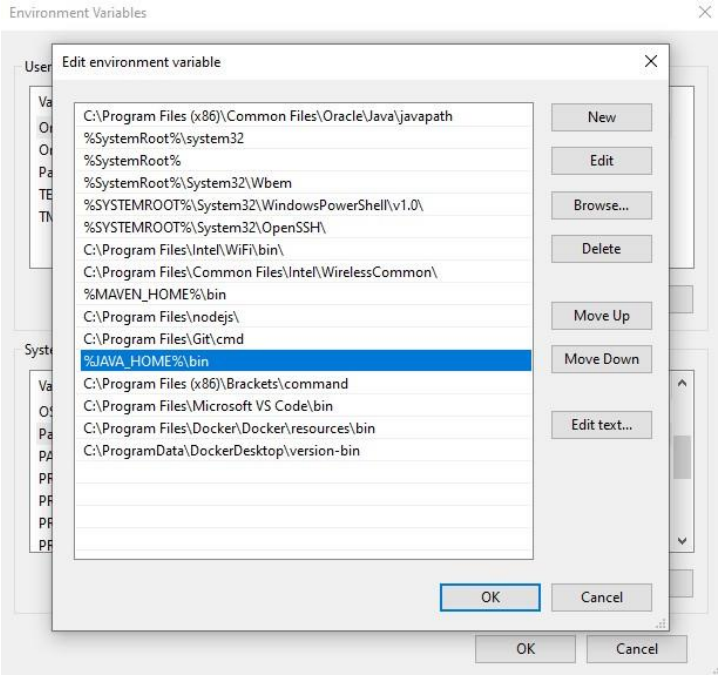
1. Link-uri de unde se poate descarca, recomand versiunea 11 de jdk (e suficient sa alegeti o varianta dintre cele de mai jos)
   - https://jdk.java.net/
   - http://openjdk.java.net/projects/jdk/
   - https://adoptopenjdk.net/

- https://www.oracle.com/ro/java/technologies/javase-downloads.html - necesita crearea unui cont

2. Rulati installer-ul (daca in urma descarcarii aveti un fisier .msi sau .exe) sau dezarhivati fisierele intr-o locatie dorita de voi (daca in urma descarcarii aveti o arhiva)
3. Accesati *Control Panel\System and Security\System -> Advanced system settings*
4. Click pe butonul *Environment variables*
5. Verificati daca in sectiunea *System variables -> Path* apare calea unde ati instalat Java urmata de \bin
6. Daca da, atunci e in regula si putem sa lasam asa sau sa facem lucrurile mai frumoase 😊
    a. O buna practica ar fi sa stergem aceasta valoare de aici
    b. Sa cream o noua variabila de system JAVA_HOME unde sa punem calea catre locatia JDK (fara \bin!)

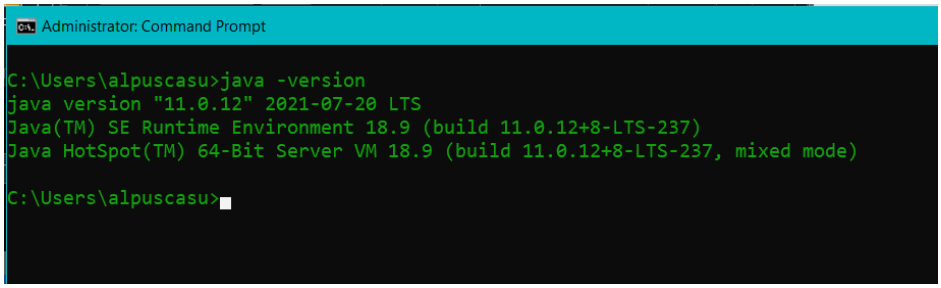


    c. Apoi adaugam la variabila Path numele proprietatii in care este tinuta calea catre java, urmat de \bin



7. Daca nu, trebuie sa efectuam obligatoriu pasii 6b si 6c

8. Verificati daca aceasta cale a fost adaugata cu success in variabila Path, folosind intr-o consola, comanda: **java -version**

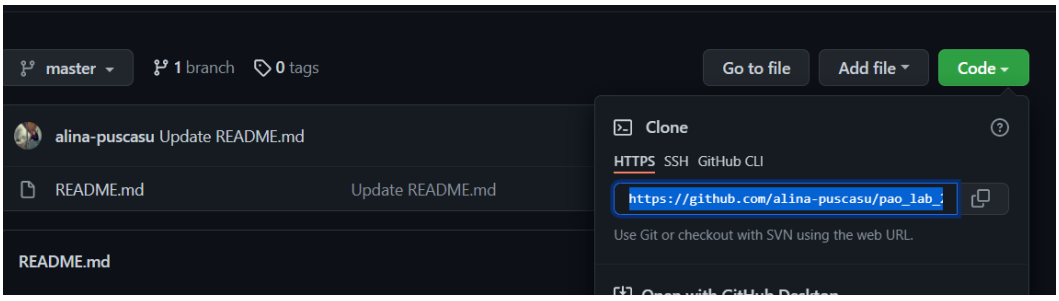


2.2 Git

1. Link pentru descarcat: https://git-scm.com/download/win
2. Setati-va identitatea folosind comenzile:
    a. **git config --global user.name “John Doe”**
    b. **git config --global user.email johndoe@example.com**

2.3 GitHub

1. Creati un cont pe: https://github.com/
2. Creati un repo nou numit pao-labs
3. Duceti-va pe repo-ul nou creat
    a. Puteti fie sa luati link-ul din browser, de ex la mine: https://github.com/alina-puscasu/pao_lab_2022 , fie:
    b. Apasati pe butonul code si in sectiunea Clone -> HTTPS veti gasi link-ul



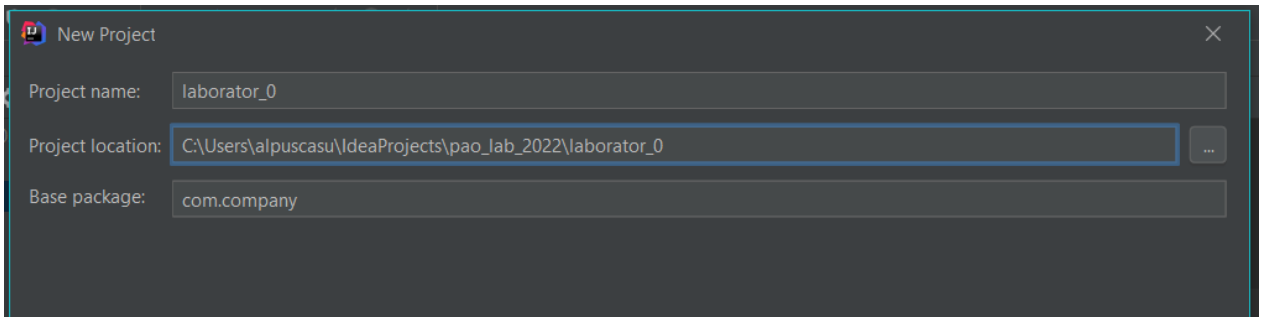
4. Duceti-va in explorer unde vreti sa clonati acest proiect
5. Click dreapta -> Git bash here
6. Scrieti git clone si apoi inserati linkul copiat. Comanda va fi de forma:
   git clone https://github.com/alina-puscasu/pao_lab_2022.git
7. Enter 😊

2.4 IDE

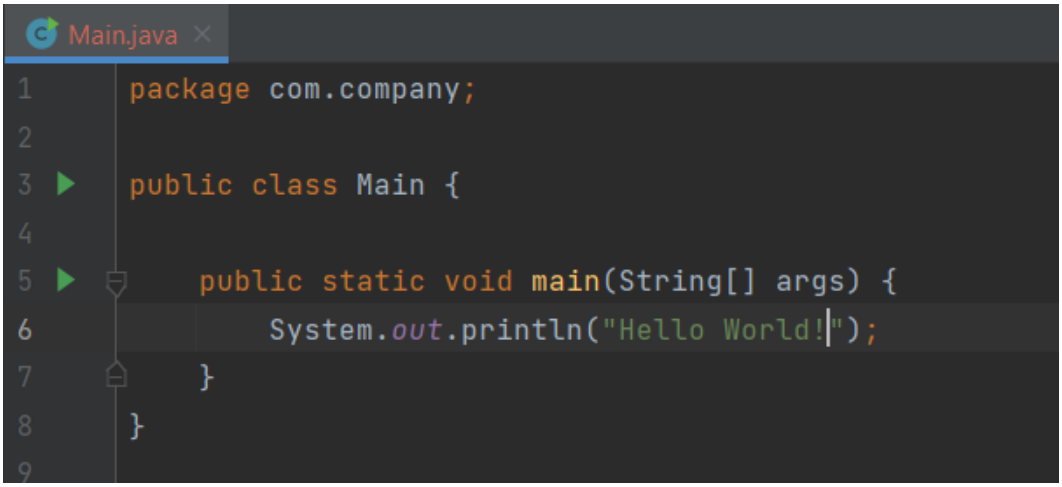
Link pentru descarcat: https://www.jetbrains.com/idea/download/#section=windows

2.5 Proiect nou Java in Intellij

1. Daca apare fereastra Welcome apasati ***New project***
2. Daca nu, din main menu apasati ***File -> New -> Project***
3. Selectati ***Java***, apoi ***Next***
    a. Daca Project SDK nu are nicio optiune selectata, apasati pe el, apoi Add JDK si duceti-va pana in locatia unde ati instalat JDK-ul
    b. Daca e selectat, validati ca e versiunea instalata mai devreme
4. Bifati ***Create project from template***, apoi ***next***
5. Selectati locatia unde ati pus repo-ul descarcat de pe Github urmata de un nume pe care il adaugati voi pentru primul proiect (ex: Laborator 0), apasati ***Finish***



6. Afisati un mesaj in clasa ***Main*** prin linia de cod: System.out.println("Hello world!")



2.6 Urcat schimbari locale pe Github folosind GitBash

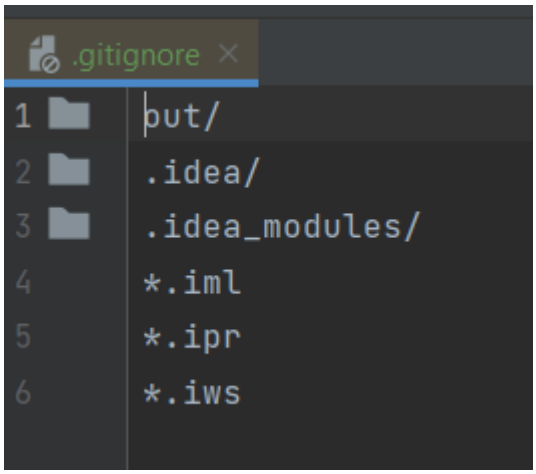
1. Vom crea un fisier ***.gitignore*** (ne ajuta sa nu urcam fisiere nedorite pe git) in locatia unde am clonat repo-ul
2. Continutul sau este (https://github.com/alina-puscasu/pao_lab_2022/blob/master/.gitignore):
    a. .idea/ -> acest folder e generat de intellij
    b. .idea_modules/ -> acest folder e generat de intellij

c. out/ -> aici vom gasi fisierele .class

d. *.iml -> generat de intellij

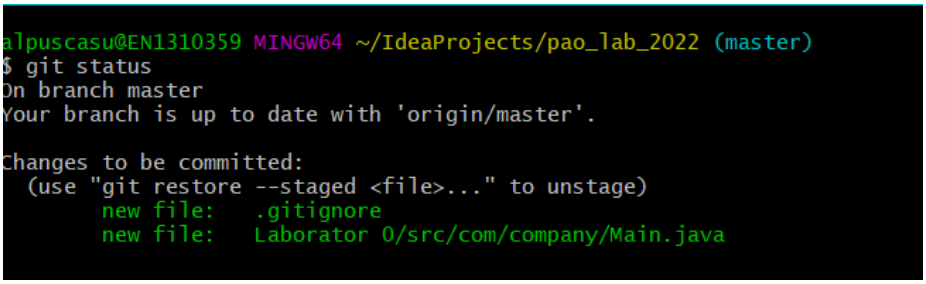
e. *.ipr -> generat de intellij

f. *.iws -> generat de intellij



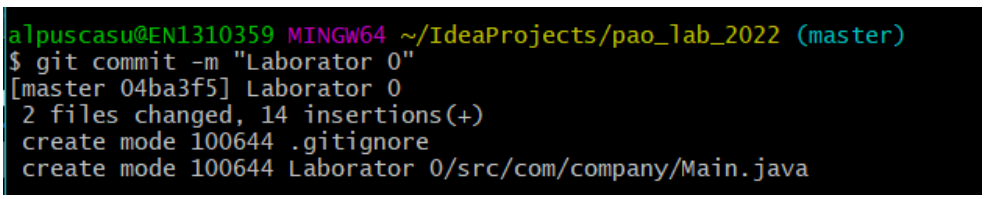
3. Deschideti un git bash in locatia unde ati clonat repo-ul.
   Spre exemplu, la mine este: C:\Users\alpuscasu\IdeaProjects\pao_lab_2022

4. **git status** imi va arata ce fisiere urmeaza sa commit



5. Dupa ce ne asiguram ca este in ordine le putem adauga cu **git add .** (. inseamna ca adaug toate fisierele)

6. Urmeaza sa facem un commit: **git commit -m “Laborator 0”**



```
alpuscasu@EN1310359 MINGW64 ~/IdeaProjects/pao_lab_2022 (master)
$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
```

7. **git push** ca sa ne publicam schimbarile pe care acum le putem vedea si in interfata github 😊

```
alpuscasu@EN1310359 MINGW64 ~/IdeaProjects/pao_lab_2022 (master)
$ git push
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (8/8), 647 bytes | 323.00 KiB/s, done.
Total 8 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:alina-puscasu/pao_lab_2022.git
   8d38691..04ba3f5  master -> master
```