

# **Laporan Hasil Praktikum**

## **Pemrograman Desktop**



### **Tugas 15**

ALYA AIMAN SALSABILA ARIF

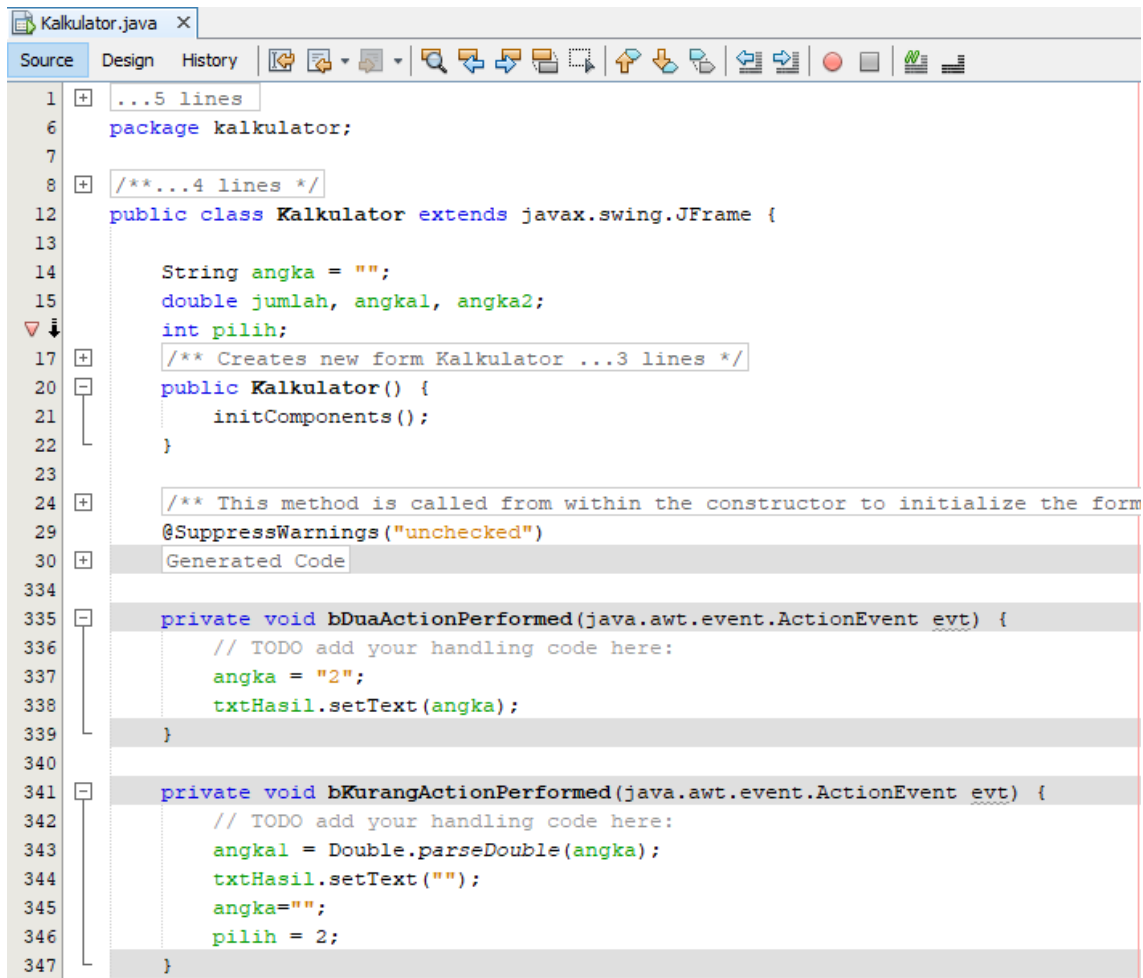
1817101379

Tingkat III Rekayasa Perangkat Lunak Kripto

Politeknik Siber dan Sandi Negara

2020/2021

Buat proyek baru dengan nama Kalkulator. Masukkan *source code* berikut pada kelas Kalkulator



```
1  ...5 lines
6  package kalkulator;
7
8  /**...4 lines */
12 public class Kalkulator extends javax.swing.JFrame {
13
14     String angka = "";
15     double jumlah, angka1, angka2;
16     int pilih;
17     /** Creates new form Kalkulator ...3 lines */
20     public Kalkulator() {
21         initComponents();
22     }
23
24     /** This method is called from within the constructor to initialize the form
29     @SuppressWarnings("unchecked")
30     Generated Code
334
335     private void bDuaActionPerformed(java.awt.event.ActionEvent evt) {
336         // TODO add your handling code here:
337         angka = "2";
338         txtHasil.setText(angka);
339     }
340
341     private void bKurangActionPerformed(java.awt.event.ActionEvent evt) {
342         // TODO add your handling code here:
343         angka1 = Double.parseDouble(angka);
344         txtHasil.setText("");
345         angka="";
346         pilih = 2;
347     }
```

```

348
349 private void bKomaActionPerformed(java.awt.event.ActionEvent evt) {
350     // TODO add your handling code here:
351     angka += ".";
352     txtHasil.setText(angka);
353 }
354
355 private void bNolActionPerformed(java.awt.event.ActionEvent evt) {
356     // TODO add your handling code here:
357     angka += "0";
358     txtHasil.setText(angka);
359 }
360
361 private void bSatuActionPerformed(java.awt.event.ActionEvent evt) {
362     // TODO add your handling code here:
363     angka += "1";
364     txtHasil.setText(angka);
365 }
366
367 private void bTigaActionPerformed(java.awt.event.ActionEvent evt) {
368     // TODO add your handling code here:
369     angka += "3";
370     txtHasil.setText(angka);
371 }
372
373 private void bEmpatActionPerformed(java.awt.event.ActionEvent evt) {
374     // TODO add your handling code here:
375     angka = "4";
376     txtHasil.setText(angka);
377 }
378

```

```

379 private void bLimaActionPerformed(java.awt.event.ActionEvent evt) {
380     // TODO add your handling code here:
381     angka += "5";
382     txtHasil.setText(angka);
383 }
384
385 private void bEnakActionPerformed(java.awt.event.ActionEvent evt) {
386     // TODO add your handling code here:
387     angka += "6";
388     txtHasil.setText(angka);
389 }
390
391 private void bTujuhActionPerformed(java.awt.event.ActionEvent evt) {
392     // TODO add your handling code here:
393     angka += "7";
394     txtHasil.setText(angka);
395 }
396
397 private void bDelapanActionPerformed(java.awt.event.ActionEvent evt) {
398     // TODO add your handling code here:
399     angka += "8";
400     txtHasil.setText(angka);
401 }
402
403 private void bSembilanActionPerformed(java.awt.event.ActionEvent evt) {
404     // TODO add your handling code here:
405     angka += "9";
406     txtHasil.setText(angka);
407 }
408

```

```

409 private void bHapusSemuaActionPerformed(java.awt.event.ActionEvent evt) {
410     // TODO add your handling code here:
411     txtHasil.setText(""); //setdispla
412     angka1 = 0.0; //disp
413     angka2 = 0.0; //displa
414     jumlah = 0.0;
415     pilih = 0; //lastoperat
416     angka = ""; //claeat
417 }
418
419 private void bTambahActionPerformed(java.awt.event.ActionEvent evt) {
420     // TODO add your handling code here:
421     angka1 = Double.parseDouble(angka);
422     txtHasil.setText("");
423     angka="";
424     pilih = 1;
425 }
426
427 private void bKaliActionPerformed(java.awt.event.ActionEvent evt) {
428     // TODO add your handling code here:
429     angka1 = Double.parseDouble(angka);
430     txtHasil.setText("");
431     angka="";
432     pilih = 3;
433 }
434
435 private void bBagiActionPerformed(java.awt.event.ActionEvent evt) {
436     // TODO add your handling code here:
437     angka1 = Double.parseDouble(angka);
438     txtHasil.setText("");
439     angka="";

```

```

440     pilih = 4;
441 }
442
443 private void bSamaDenganActionPerformed(java.awt.event.ActionEvent evt) {
444     // TODO add your handling code here:
445     switch (pilih) {
446         case 1:
447             angka2 = Double.parseDouble(angka);
448             jumlah = angka1 + angka2;
449             angka = Double.toString(jumlah);
450             txtHasil.setText(angka);
451             break;
452         case 2:
453             angka2 = Double.parseDouble(angka);
454             jumlah = angka1 - angka2;
455             angka = Double.toString(jumlah);
456             txtHasil.setText(angka);
457             break;
458         case 3:
459             angka2 = Double.parseDouble(angka);
460             jumlah = angka1 * angka2;
461             angka = Double.toString(jumlah);
462             txtHasil.setText(angka);
463             break;
464         case 4:
465             angka2 = Double.parseDouble(angka);
466             jumlah = angka1 / angka2;
467             angka = Double.toString(jumlah);
468             txtHasil.setText(angka);
469             break;

```

```

470         default:
471             break;
472     }
473 }
474
475 private void bHapusActionPerformed(java.awt.event.ActionEvent evt) {
476     // TODO add your handling code here:
477     String text = txtHasil.getText();
478     txtHasil.setText(text.substring(0, text.length()-1));
479     if(txtHasil.getText().equals("")) {
480         txtHasil.setText("0");
481     }
482     angka = txtHasil.getText();
483 }
484
485 private void bPersentaseActionPerformed(java.awt.event.ActionEvent evt) {
486     angkakal = Double.parseDouble(angka);
487     angka="";
488     jumlah = angkakal/100;
489     angka = Double.toString(jumlah);
490     txtHasil.setText(angka);
491 }
492
493 private void bKebalikanActionPerformed(java.awt.event.ActionEvent evt) {
494     // TODO add your handling code here:
495     angkakal = Double.parseDouble(angka);
496     angka="";
497     jumlah = 1/angkakal;
498     angka = Double.toString(jumlah);
499     txtHasil.setText(angka);
500 }
501

```

```

502 private void bKuadratActionPerformed(java.awt.event.ActionEvent evt) {
503     // TODO add your handling code here:
504     angka = Double.parseDouble(angka);
505     angka="";
506     jumlah = angka * angka;
507     angka = Double.toString(jumlah);
508     txtHasil.setText(angka);
509 }
510
511 private void bAkarKuadratActionPerformed(java.awt.event.ActionEvent evt) {
512     // TODO add your handling code here:
513     angka = Double.parseDouble(angka);
514     angka="";
515     jumlah = Math.sqrt(angka);
516     angka = Double.toString(jumlah);
517     txtHasil.setText(angka);
518 }
519
520 private void bHapusEntriActionPerformed(java.awt.event.ActionEvent evt) {
521     // TODO add your handling code here:
522     txtHasil.setText("");
523     angka = "";
524     jumlah = 0.0;
525 }
526
527 private void bUbahTandaActionPerformed(java.awt.event.ActionEvent evt) {
528     // TODO add your handling code here:
529     String text = txtHasil.getText();
530     if (text.length() > 0 && !text.equals("0")) {
531         if(text.indexOf("-") == 0) {
532             txtHasil.setText(text.substring(1));
533         } else {

```

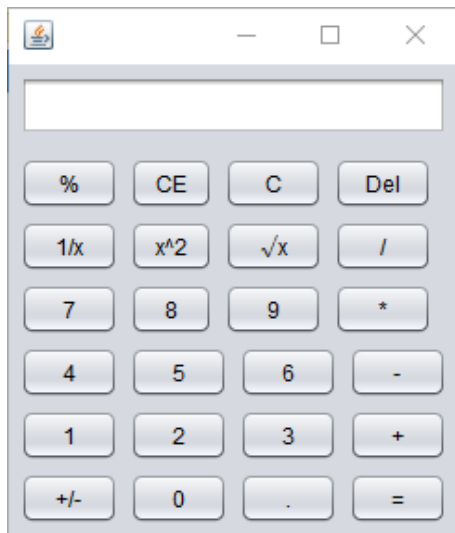


```

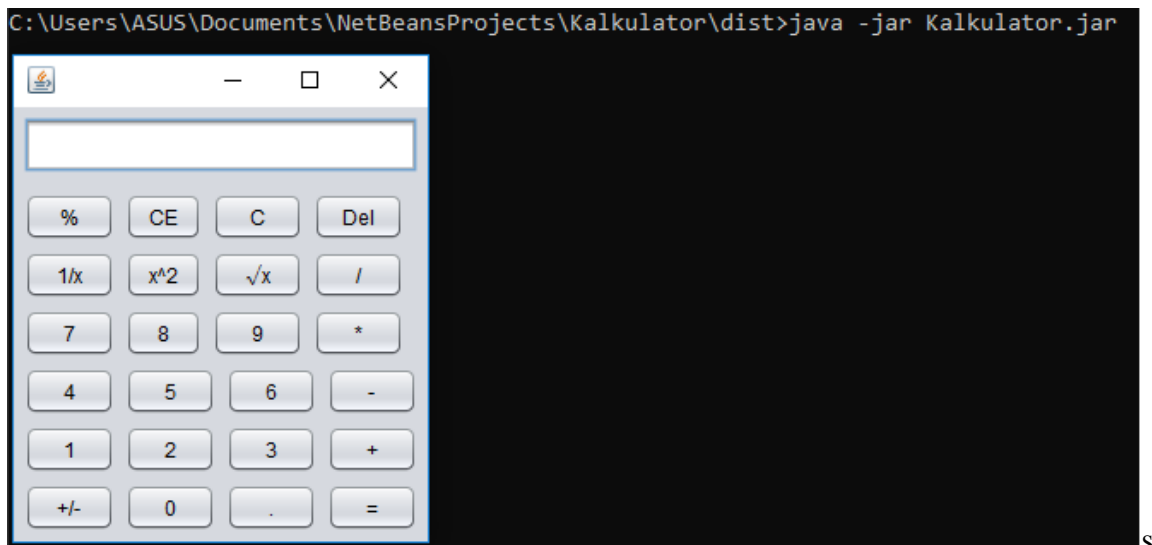
534         txtHasil.setText("-" + text);
535     }
536     } else if (txtHasil.getText().equals("")) {
537         txtHasil.setText("0");
538     }
539     angka = txtHasil.getText();
540 }
541
542 /**...3 lines */
543 public static void main(String args[]) {
544     /* Set the Nimbus look and feel */
545     Look and feel setting code (optional)
546
547     /* Create and display the form */
548     java.awt.EventQueue.invokeLater(new Runnable() {
549         public void run() {
550             new Kalkulator().setVisible(true);
551         }
552     });
553 }
554
555 // Variables declaration - do not modify
556 private javax.swing.JButton bAkarKuadrat;
557 private javax.swing.JButton bBagi;
558 private javax.swing.JButton bDelapan;
559 private javax.swing.JButton bDua;
560 private javax.swing.JButton bEmpat;
561 private javax.swing.JButton bEnak;
562 private javax.swing.JButton bHapus;
563 private javax.swing.JButton bHapusEntri;
564 private javax.swing.JButton bHapusSemua;
565 private javax.swing.JButton bKali;
566 private javax.swing.JButton bKebalikan;
567 private javax.swing.JButton bKoma;
568 private javax.swing.JButton bKuadrat;
569 private javax.swing.JButton bKurang;
570 private javax.swing.JButton bLima;
571 private javax.swing.JButton bNol;
572 private javax.swing.JButton bPersentase;
573 private javax.swing.JButton bSamaDengan;
574 private javax.swing.JButton bSatu;
575 private javax.swing.JButton bSembilan;
576 private javax.swing.JButton bTambah;
577 private javax.swing.JButton bTiga;
578 private javax.swing.JButton bTujuh;
579 private javax.swing.JButton bUbahTanda;
580 private javax.swing.JTextField txtHasil;
581 // End of variables declaration
582 }

```

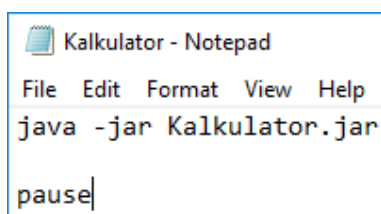
Jalankan program. Berikut hasil yang ditampilkan



Sebelum membuat *installer* dengan aplikasi, lakukan *Clean and Build* dan jalankan program yang sudah dibuat bisa melalui CMD seperti berikut











Buat file .batnya sehingga dengan klik dua kali program langsung jalan

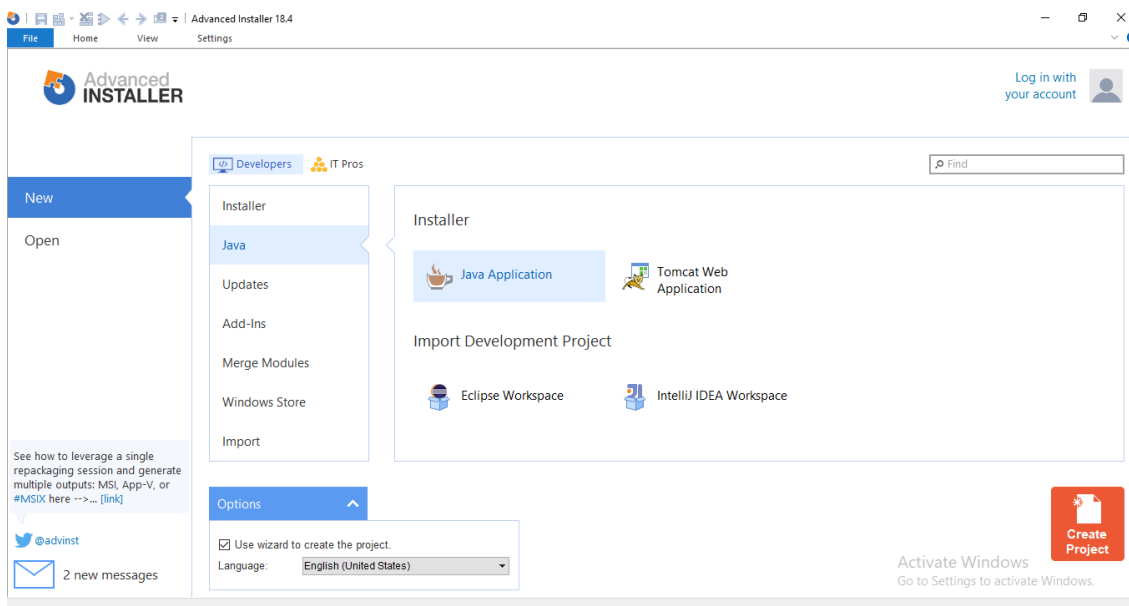


Simpan dengan format .bat dan disamping file .jar. Klik 2 kali pada file .bat

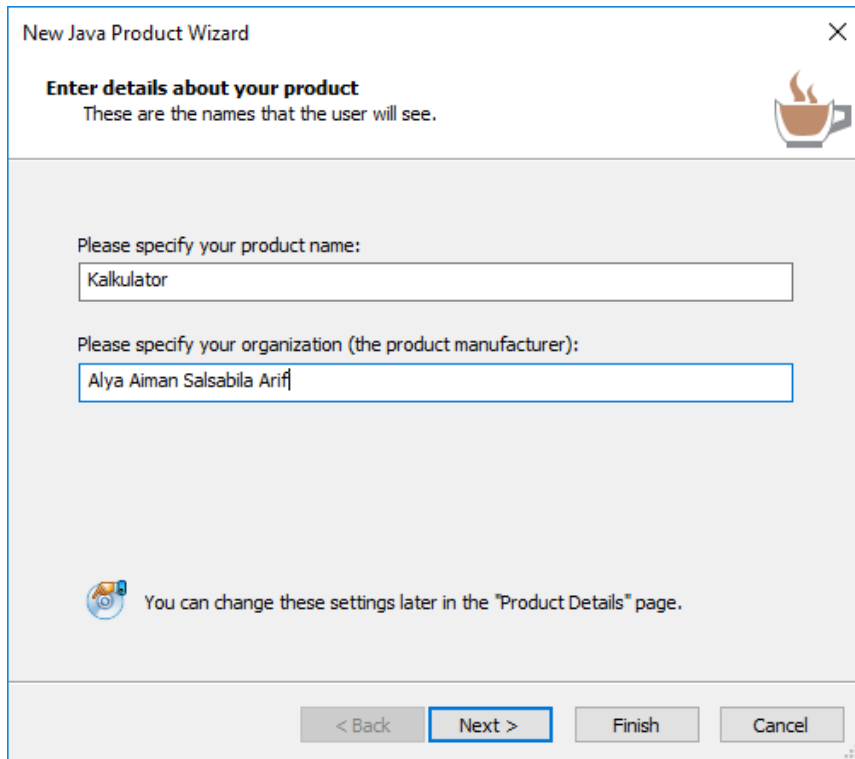
Agar program dapat berjalan secara *standalone*, *installer* harus di-*include*-kan JDK. Oleh karena itu *copy* folder *bin* yang ada di alamat *directory* instalasi JDK: “C:\Program Files\Java\jdk...\bin” ke dalam proyek.

Name	Date modified	Type	Size
 bin	10/07/2021 21:22	File folder	
 build	10/07/2021 20:59	File folder	
 dist	10/07/2021 21:18	File folder	
 nbproject	08/07/2021 10:50	File folder	
 src	08/07/2021 10:50	File folder	
 test	08/07/2021 11:04	File folder	
 build	08/07/2021 10:50	XML Document	4 KB
 manifest.mf	08/07/2021 10:50	MF File	1 KB

Jalankan Advanced Installer. Pilih *Project Type* “Java” kemudian “Java Application”. Pada “Options” yang ada di bawah, pastikan centang pada “Use wizard to create project”. Setelah itu tekan tombol “Create Project”

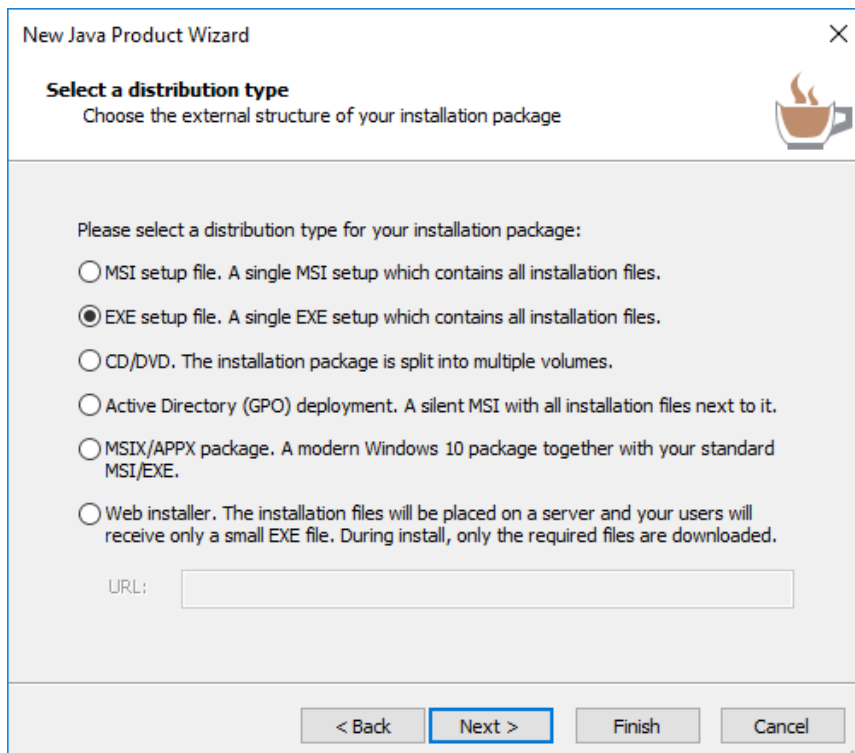


Akan muncul jendela kecil untuk konfigurasi dasar. Isikan nama aplikasi dan organisasinya atau perusahaan. Kemudian tekan “Next”



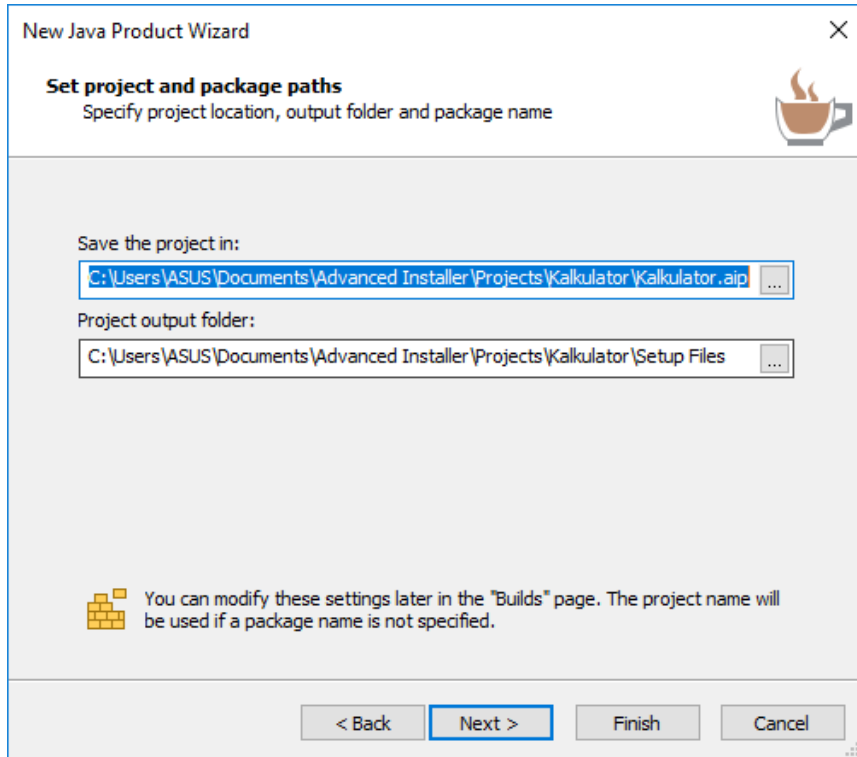
The screenshot shows the 'New Java Product Wizard' dialog box. The title bar says 'New Java Product Wizard' with a close button. The main heading is 'Enter details about your product' with a subtitle 'These are the names that the user will see.' and a coffee cup icon. There are two text input fields: 'Please specify your product name:' with the text 'Kalkulator' and 'Please specify your organization (the product manufacturer):' with the text 'Alya Aiman Salsabila Arif'. Below the fields is a message: 'You can change these settings later in the "Product Details" page.' with a help icon. At the bottom are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. The 'Next >' button is highlighted with a blue border.

Pilih yang “EXE setup file....”. Kemudian tekan “Next”



The screenshot shows the 'New Java Product Wizard' dialog box. The title bar says 'New Java Product Wizard' with a close button. The main heading is 'Select a distribution type' with a subtitle 'Choose the external structure of your installation package' and a coffee cup icon. There are six radio button options: 'MSI setup file. A single MSI setup which contains all installation files.', 'EXE setup file. A single EXE setup which contains all installation files.' (which is selected), 'CD/DVD. The installation package is split into multiple volumes.', 'Active Directory (GPO) deployment. A silent MSI with all installation files next to it.', 'MSIX/APPX package. A modern Windows 10 package together with your standard MSI/EXE.', and 'Web installer. The installation files will be placed on a server and your users will receive only a small EXE file. During install, only the required files are downloaded.' Below the options is a 'URL:' label and an empty text input field. At the bottom are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. The 'Next >' button is highlighted with a blue border.

Di sini tempat menyimpan project Advanced Installer dan hasil pembuatan *installer* dari proyek tersebut. Tanpa perlu dilakukan perubahan, silahkan tekan “Next”



The screenshot shows the 'New Java Product Wizard' dialog box, specifically the 'Set project and package paths' step. The title bar reads 'New Java Product Wizard' with a close button (X) on the right. Below the title bar, the step name 'Set project and package paths' is displayed in bold, followed by the instruction 'Specify project location, output folder and package name'. A Java logo (a brown cup with steam) is positioned to the right of the instruction. The main area contains two text input fields. The first field is labeled 'Save the project in:' and contains the path 'C:\Users\ASUS\Documents\Advanced Installer\Projects\Kalkulator\Kalkulator.aip'. The second field is labeled 'Project output folder:' and contains the path 'C:\Users\ASUS\Documents\Advanced Installer\Projects\Kalkulator\Setup Files'. Both fields have a small '...' button to their right. At the bottom of the main area, there is a small yellow brick icon and a message: 'You can modify these settings later in the "Builds" page. The project name will be used if a package name is not specified.' The bottom of the dialog features four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. The 'Next >' button is highlighted with a blue border.

New Java Product Wizard

**Set project and package paths**  
Specify project location, output folder and package name

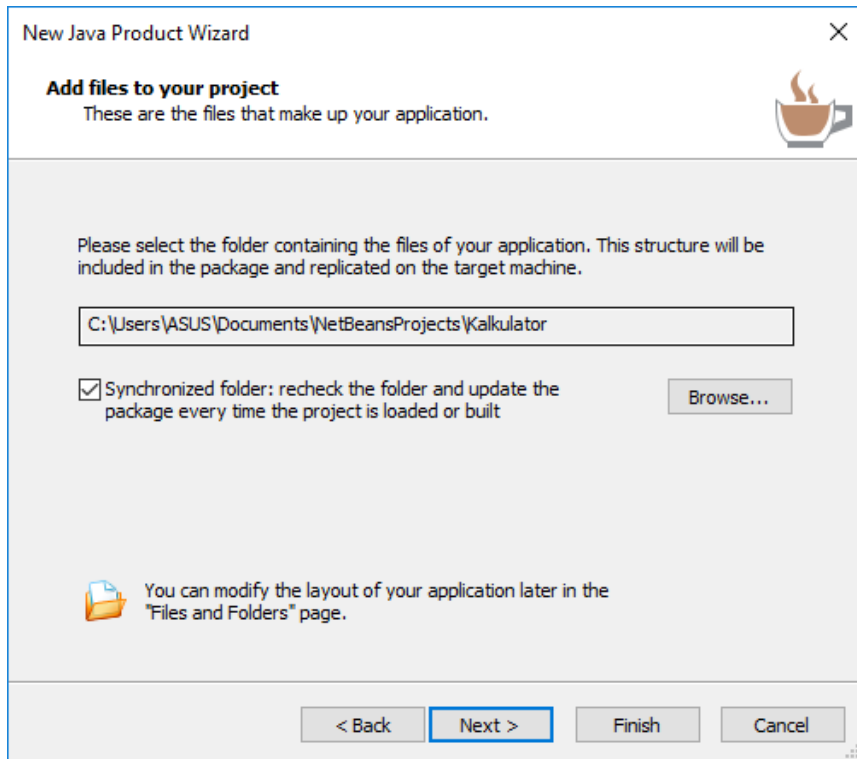
Save the project in:  
C:\Users\ASUS\Documents\Advanced Installer\Projects\Kalkulator\Kalkulator.aip

Project output folder:  
C:\Users\ASUS\Documents\Advanced Installer\Projects\Kalkulator\Setup Files

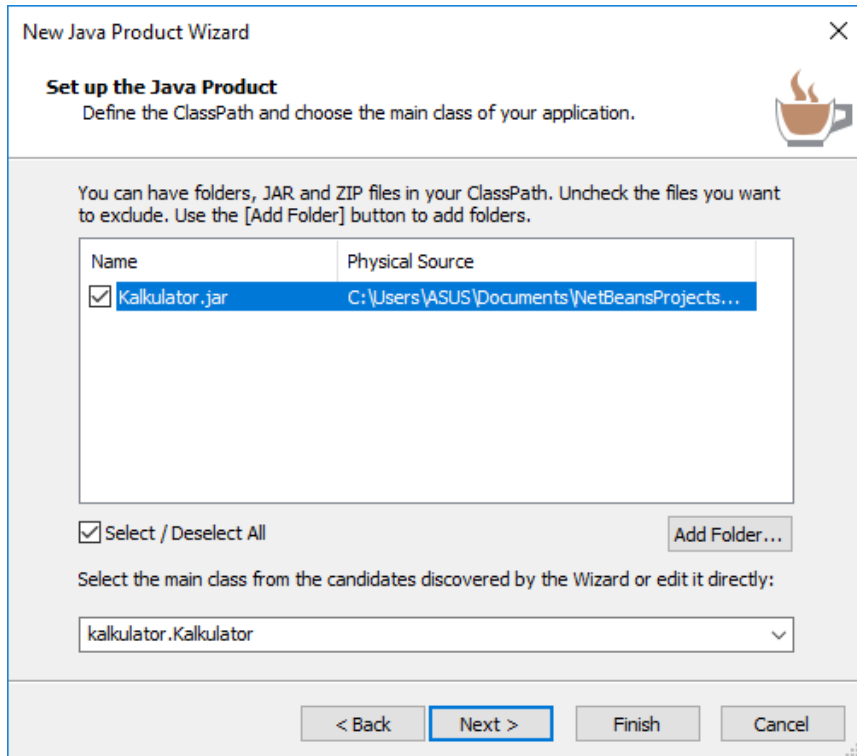
You can modify these settings later in the "Builds" page. The project name will be used if a package name is not specified.

< Back   Next >   Finish   Cancel

Kemudian muncul jendela berikut, tentukan *directory* proyek anda. “Browse” proyek Netbeans tersebut



Pada jendela “Set up the Java Product”, setelah memasukkan proyek tersebut, maka akan muncul *list* file .jar yang ada didalam proyek tersebut, sehingga file-file *library* akan ter-include secara otomatis. Oleh karena itu, jika membuat proyek, file-file *library* harus diletakkan dalam satu proyek tersebut. Tentukan *main class* dari proyek tersebut. Kemudian tekan “Next”



Pilih “Graphical User Interface” agar program dapat dijalankan secara GUI. Dan tentukan ikon dari aplikasi, format file .ico. setelah itu tekan “Next”

New Java Product Wizard

**Application settings for the Java Product**  
Choose the settings for your Java Product application.

Choose the type of your Java application:

☒ Graphical User Interface  
☐ Console  
☐ Win32 Service

Use the [Browse] button if you wish to assign an icon for your application.

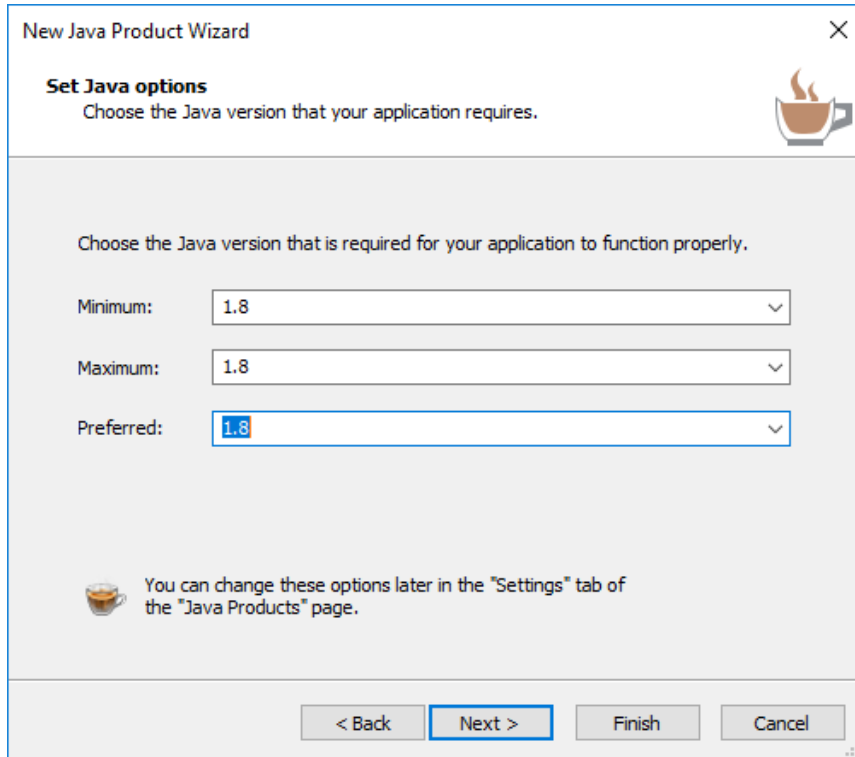
Icon:  Browse...

You can change these options later in the "Settings" tab of the "Java Products" page.

< Back Next > Finish Cancel



Tentukan *minimum*, *maximum*, dan *preferred* versi JRE. Penentuan versi ini berdasarkan versi JDK yang dipakai. Kemudian tekan “Next”



The screenshot shows a 'New Java Product Wizard' window with a close button (X) in the top right corner. The title bar reads 'New Java Product Wizard'. Below the title bar, the section is titled 'Set Java options' with a subtitle 'Choose the Java version that your application requires.' and a Java logo icon. The main area contains the instruction 'Choose the Java version that is required for your application to function properly.' followed by three dropdown menus: 'Minimum:' with '1.8', 'Maximum:' with '1.8', and 'Preferred:' with '1.8'. Below these, a note with a Java logo icon states: 'You can change these options later in the "Settings" tab of the "Java Products" page.' At the bottom, there are four buttons: '< Back', 'Next >' (highlighted with a blue border), 'Finish', and 'Cancel'.

New Java Product Wizard

**Set Java options**  
Choose the Java version that your application requires.

Choose the Java version that is required for your application to function properly.

Minimum: 1.8

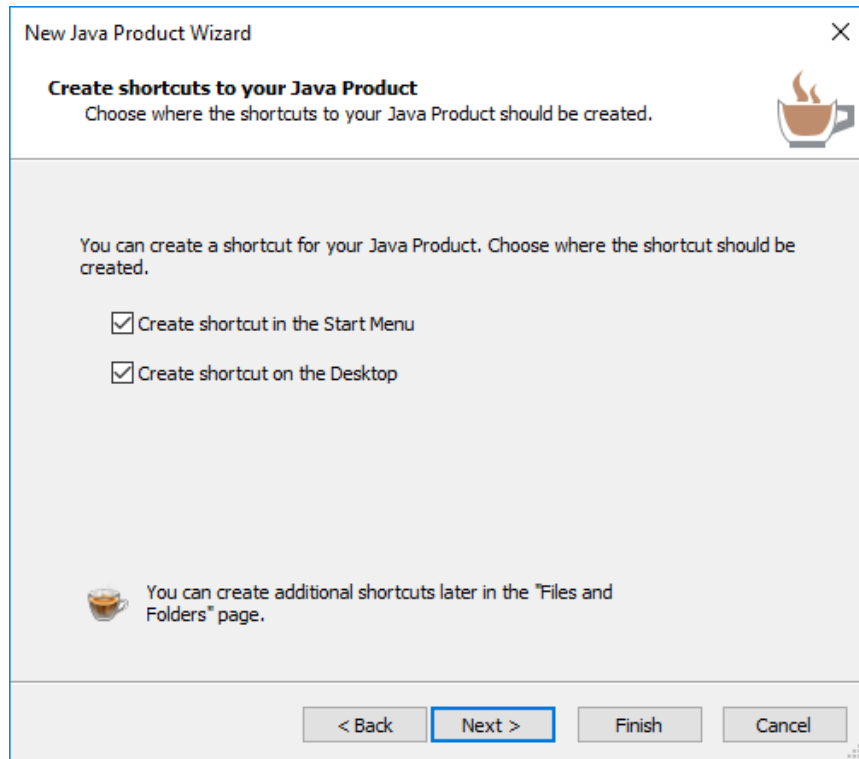
Maximum: 1.8

Preferred: 1.8

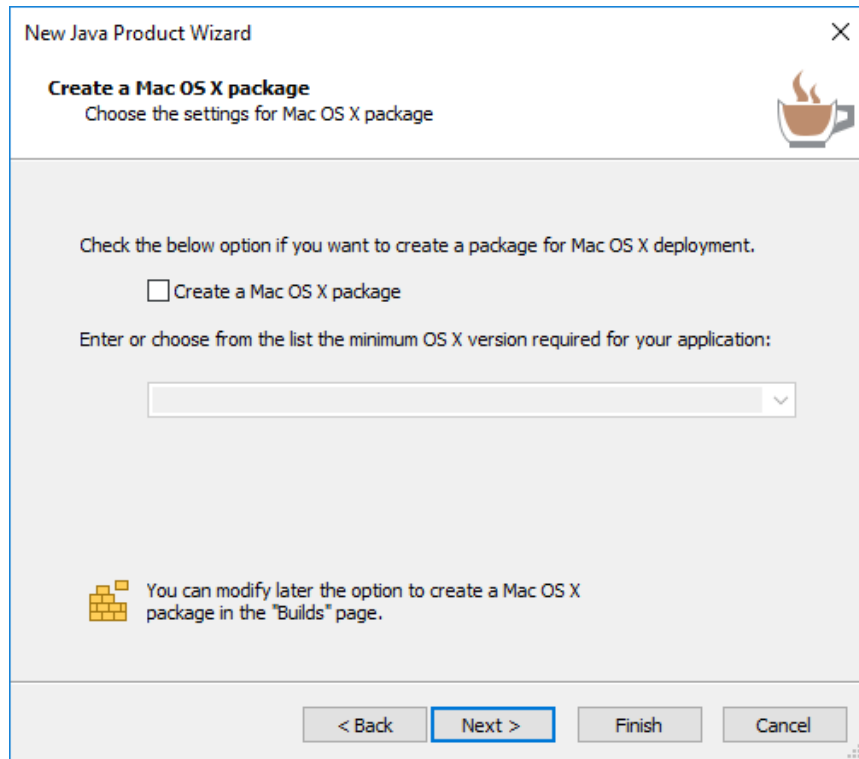
You can change these options later in the "Settings" tab of the "Java Products" page.

< Back Next > Finish Cancel

Centang pada kedua-duanya jika ingin membuat *shortcut* pada Start Menu dan Desktop. Silahkan tentukan sesuai keinginan. Kemudian tekan “Next



Hilangkan centang di “Create a Mac OS X package”, karena tidak membuat untuk *installer* MacOS



New Java Product Wizard

**Create a Mac OS X package**  
Choose the settings for Mac OS X package

Check the below option if you want to create a package for Mac OS X deployment.

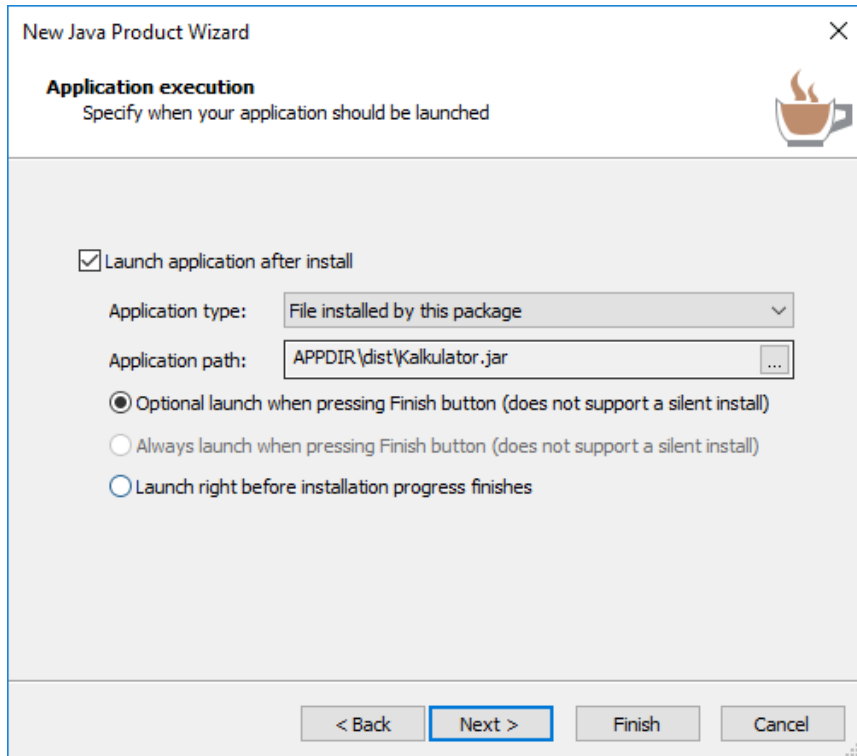
☐ Create a Mac OS X package

Enter or choose from the list the minimum OS X version required for your application:

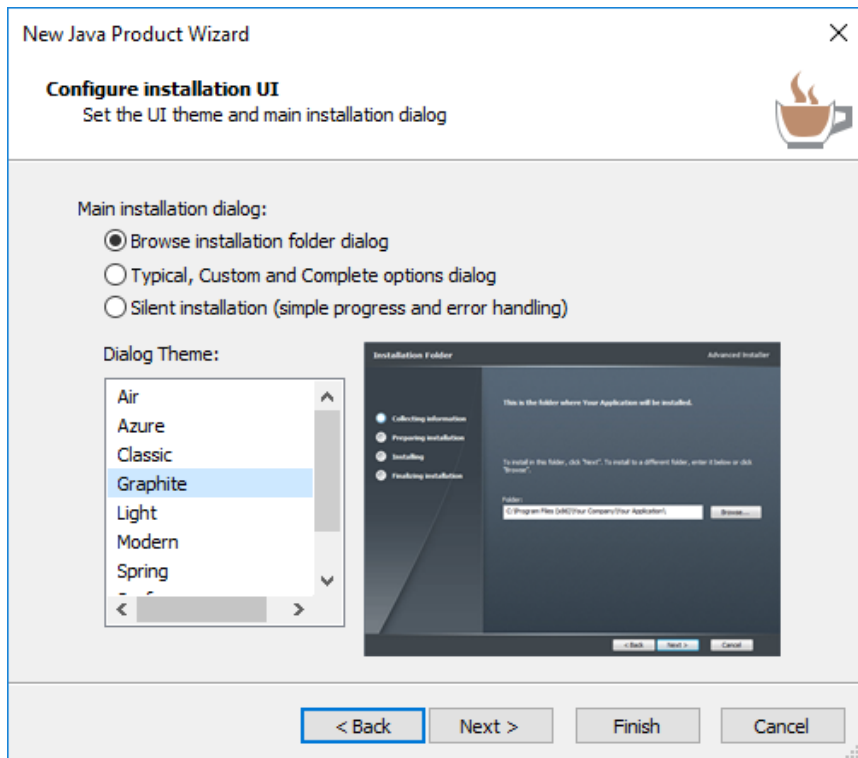
You can modify later the option to create a Mac OS X package in the "Builds" page.

< Back   **Next >**   Finish   Cancel

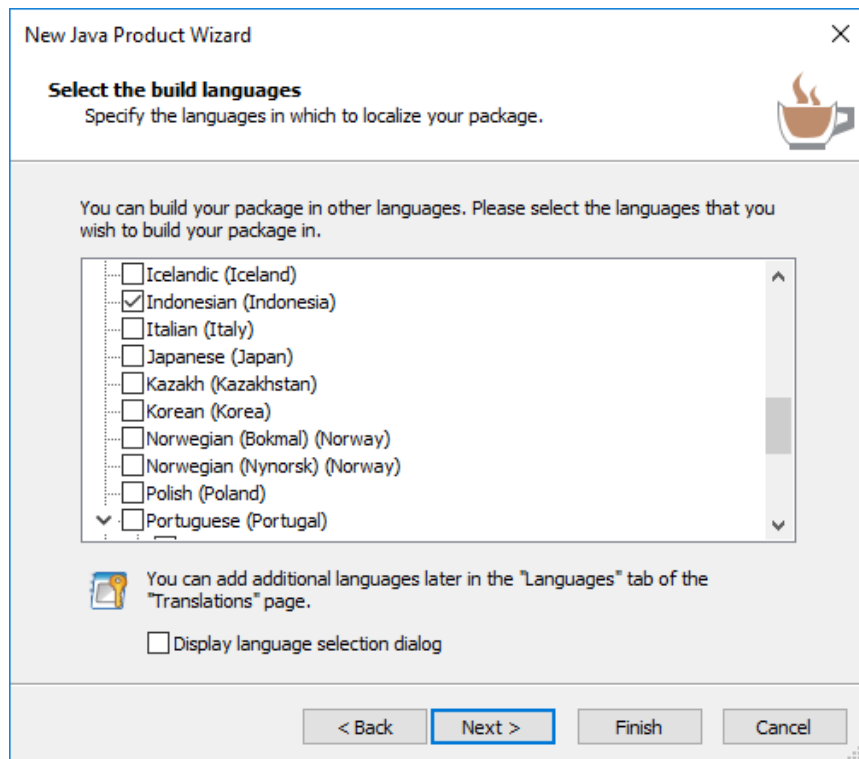
Centang “Launch application after install” untuk menentukan bahwa setelah proses instalasi selesai, bisa langsung menjalankan program. Tentukan *Application type*-nya: “File installed by this package”, dan penentuan *path*-nya adalah file .jar dari hasil *build project* yang ada di folder dist. Setelah itu tekan “Next



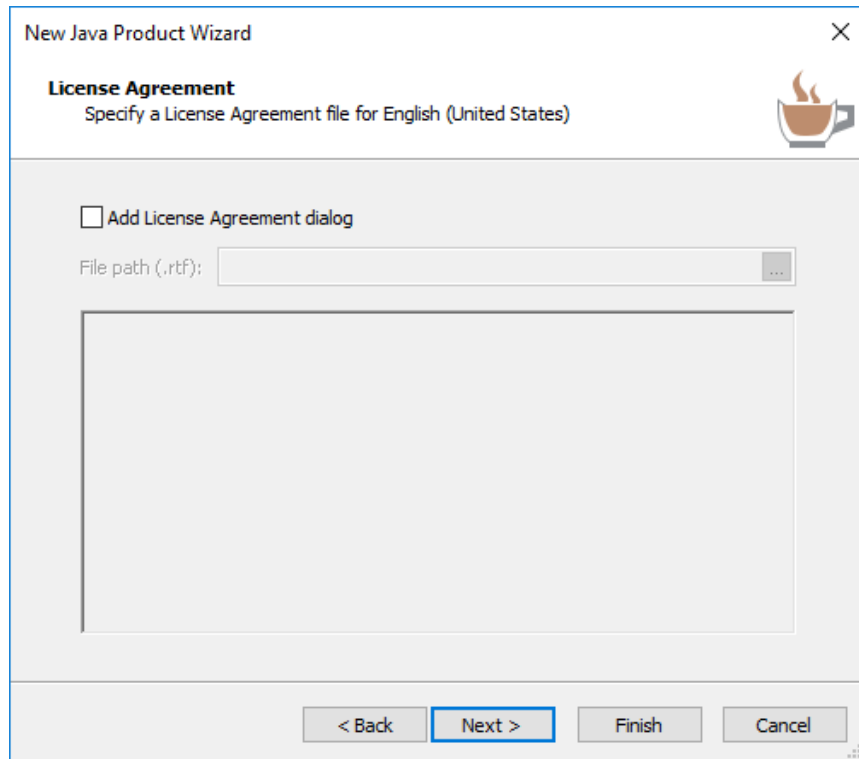
Pilih tampilan *installer* sesuai keinginan



Tentukan pilihan bahasa instalasi program, disini hanya memilih dua pilihan bahasa, yaitu English dan Indonesia. Kemudian centang “Display language selection dialog”. Kemudian tekan “Next



Jika ingin memberikan sebuah *license agreement*, silahkan tulis di Office Word kemudian disimpan dalam bentuk .rtf, dan bisa ditambahkan disini. Tekan “Next”



Hilangkan centang dari “Build the project now”, karena perlu ada konfigurasi lain yang perlu diatur. Tekan “Finish”





Lakukan pengaturan pada menu Products Details. Isi *field* “Product Name”, “Product Version”, “Company Name”, “Comments”, centang pada “Register product with Windows Installer”, kemudian tambahkan ikon pada “Control Panel Icon” agar saat aplikasi di *install*, muncul ikon dibagian *uninstall program*

Kemudian pilih menu Install Parameters. Dan pastikan pada *field* “Application Folder” terisi “[ProgramFilesFolder][Manufacturer][ProductName]” sehingga saat di *install*, folder hasil instalasi akan ditempatkan di “C:\Program Files\Nama Perusahaan\Nama Produknya

Lewati menu “Digital Signature”, “Updater”, dan “Upgrades”, biarkan pengaturan secara *default* pada menu-menu tersebut. Kemudian pilih “Licensing” jika menginginkan terdapat permintaan *serial number* saat instalasi program. Centang pada “Use Serial Validation”

Pilih menu “Java Products”. Silahkan dipilih Main Class dari proyek anda dengan *type* Graphical User Interface. Embedded JAR: silahkan pilih file .jar dari hasil *build project*. Tentukan file ikon untuk ikon hasil dari instalasi program.

The image shows two tabs of a configuration window. The top tab, 'Classpath', contains a list with one entry: 'APPDIR\dist\Kalkulator.jar'. To the right of the list are 'Up', 'Down', and 'Remove' buttons. Below the list are 'Add:' buttons for 'JAR(s)...', 'Folder...', 'Property...', 'Env Var...', and a file type dropdown set to '\*.jar ..'. The bottom tab, 'Application', has 'Main Class' set to 'kalkulator.Kalkulator' and 'Type' set to 'Graphical User Interface'. It includes checkboxes for 'Single instance', 'Startup failure check' (checked), 'Omit service name parameter', 'Hide settings', 'Set product folder as current', and 'Run as Administrator'. There is also a link for 'Execution level...'. The 'Platform' is set to '32-bit'. The 'Embedded JAR:' field is empty with a browse button. The 'Description:' field contains a template string: '[[CurrentJavaProductName]] [[ProductVersion]] © [[Manufacturer]], Inc, 2021'.

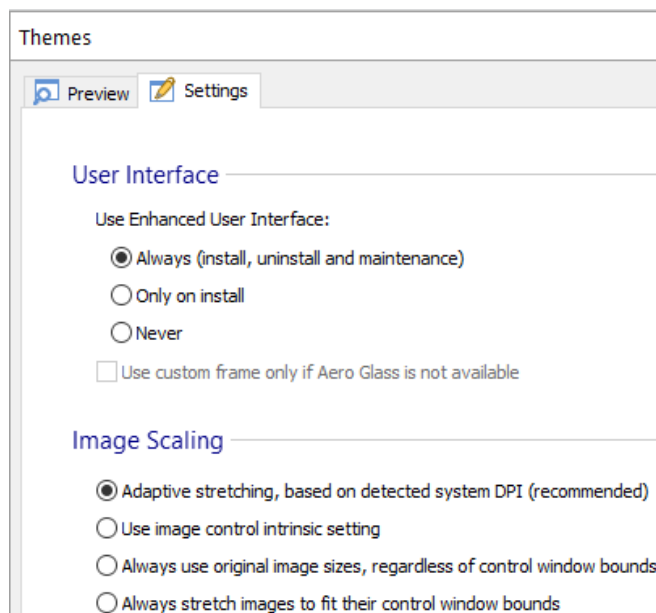
Masih pada konfigurasi di menu “Java Products”, pilih *tab* “Virtual Machine”. Di sini akan menambahkan *virtual machine* dari Java, yaitu JDK. Pada “Java Library Path”, tekan tombol “Folder” pada “Add”. Pilih folder “bin”. Kemudian tekan “OK”.

The image shows the 'Java Library Path' tab. It features a list with one entry: 'APPDIR\bin'. To the right are 'Up', 'Down', and 'Remove' buttons. Below the list are 'Add:' buttons for 'Folder...', 'Property...', and 'Env Var...'.

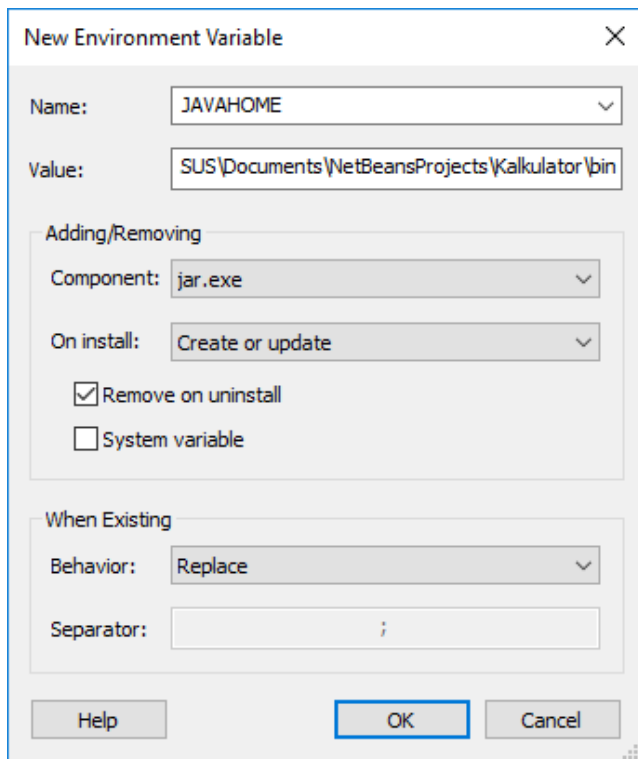
Masih pada konfigurasi di menu “Java Products”, pada *tab* “Mac OS X”, hilangkan centang dari “Include the Java Product in the Mac OS build” karena tidak membuat fungsi *installer* untuk *platform* Mac OS X.


Setelah itu pilih menu “Themes”, dan tentukan *template* GUI installer sesuai keinginan. Terdapat enam macam tema: Air, Azure, Classic, Graphic, Graphite, Modern, Spring. Misalkan memilih jenis Spring, kemudian tekan tombol “Set as current” untuk mengubah tema tersebut, kemudian muncul konfirmasi, maka tekan tombol “Change Theme”

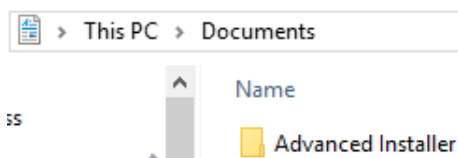
Kemudian pilih *tab* “Setting” dari *menu* “Themes” tersebut, dan ubah “User Interface” pada “Always (install, uninstall and maintenance)” untuk pilihan bahwa untuk melakukan *install*, *uninstall* dan *maintenance* program, melakukan pada GUI tersebut



Kemudian pilih menu “Environment” untuk menambahkan *path environment* pada system Windows. Tujuannya agar *java machine* atau JDK terdeteksi oleh sistem Windows secara otomatis. Klik kanan pada area “Environment variables”, kemudian pilih “New Variable”



Konfigurasi selesai, silahkan anda tekan build yang berlogo  yang berada di atas. File setup.exe sebagai *installer* program berada di dalam proyek Advanced Installer. Dan program telah siap untuk di *install*.



Berikut program yang dihasilkan setelah dilakukan penginstalan

