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link of GitHub: https://github.com/hebahhanandeh/18110060-10201203-fall 2019





# D/615/1618 Programming

# 23/Jan/20

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## Introduction:

Initially I was selected as a programmer for the Ministry of Finance with the aim of automating paperwork they have, knowing that paperwork has many problems such as lost paperwork and the difficulty of entering and saving data for employees, here it came to me to solve these problems according to the requirements of the ministry and its needs.

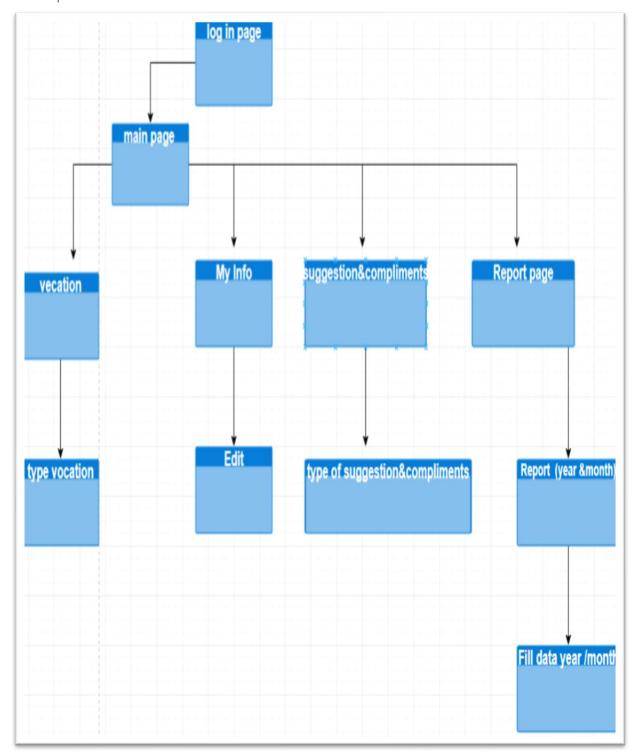
## Sitemap, mockups, wireframe& requirements:

- 1) The screen for entering the employee number and the password in order to enter it into the system is called (log in).
- 2) A main screen of the system contains the titles of four screens, such as reports, my information, complaints suggestions and the last holidays called (Main page).
- 3) Screen showing employee information in an apparent form such as name, job number, phone number, address and job title after entering a screen log in it is displayed and contains an option or title for an edit screen called (My Info)
- 4) The employee information editing screen allows the employee to change his phone number and address only, knowing that the job number does not change called (Edit My Info)
- 5) Take leave screen informing the employee to specify their type, name, reason and send them to a file that will be formed after filling in the employee information to request a leave called a vacation
- 6) A reports screen contains two types, the first is monthly, enables the employee to fill in data, display the monthly reports, and the second type annually has the same function.
- 7) The data filling screen monthly contains determination of the month, spending and earning and then save in another screen when press on view report (8 monthly report)
- 9) The data filling screen Yearly called data Fill data contains determination of the month, spending and earning and then save in another screen when press on view report (10 yearly report) 11) insert data called monthly /yearly reports





sitemap:





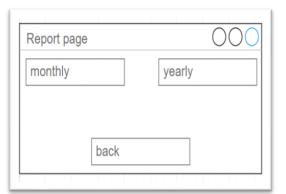


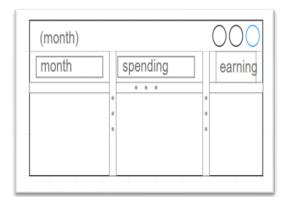
Mockups:

Job number	
Password	
log in page	

Ministry of finance	$\bigcirc\bigcirc\bigcirc$
my information	reports
vacations	complaints and suggestions

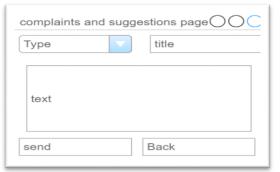












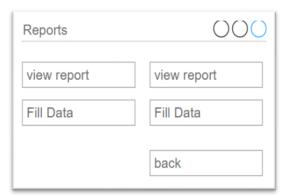


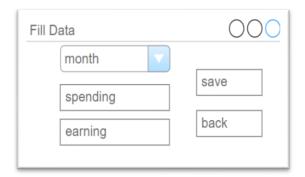


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vacations		000
type		
title		
text		
send	Back	





# wireframes:









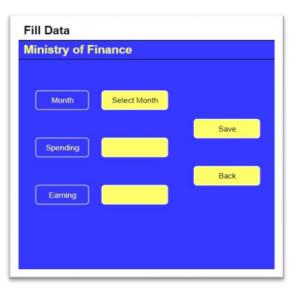










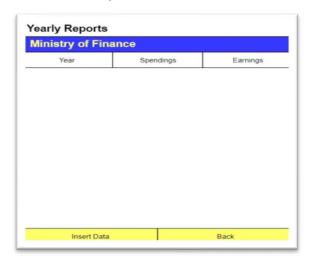


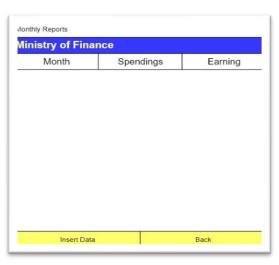




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# Algorithms:

In general, it is the definition of the problem and the requirements for solving it with determining the data type in the form of variables and a default table for the shape of the output, then design it and write the code and read a line by line from start to end or design a flowchart using engineering shapes to clarify it and then convert it to code after tracking the main goal of it to solve Complex problems. Rocking might be near JFC (Foundation Java Classes), graphical user interface (graphical user interface) and AWT (summary window toolkit) it's a powerful and versatile useful program for graphic building in Java that wants to use Swings. Swing Framework contains a large collection of parts that allow for a high level of customization and provide deserving functionality, and are used to form window-based applications. Lightweight Java Hammock Parts Module, Free Platform, Powerful Parts Supply Like Tables, Scroll Panels, Buttons, List, Person Color, etc. With Eclipse for Java (Swing) and Windows Builder, to embrace SWT designers and Swing designer halves, it's very easy to configure Java GUI applications while not paying much of your time typing code. Use the application's visual design and layout tools to form direct forms for complex windows; Java code will be generated by adding controls for dragging and dropping misuse, adding event handlers to special controls, modifying the various properties of controls that use a feature editor, and internationalizing and adding your application to a large extent. Window Builder was created as a plug-in for the varied Eclipse (RAD, RSA, MyEclipse, JBuilder, etc.). The plugin creates an abstract syntax tree (AST) for navigation in the ASCII text file and uses GEF to show and manage the visual presentation.





## The characteristics of the appropriate algorithm base are:

Accuracy - The steps are completely clear (specific).

- Uniqueness the results of each step are unambiguously defined and relying solely on inputs, and therefore the results of the previous steps.
- Collecting information entries and requirements of the Ministry of Finance
- Outputs screens that benefit Ministry of Finance employees based on their requirements Generality matches inputs to outputs
- Effective to be effective without problems

Clarity - Define each step clearly and unambiguously

#### The appropriate algorithm rule properties are:

- Accuracy The steps are completely clear (specific).
- Uniqueness the results of each step are unambiguously defined and relying solely on inputs, and therefore the results of the previous steps.
- Collecting information entries and requirements of the Ministry of Finance
- Outputs screens that benefit Ministry of Finance employees based on their requirements
- Generality matches inputs to outputs
- Effective to be effective without problems
- Clarity Define each step clearly and unambiguously

the Jordanian Ministry of Finance, which is entering data in paper form, and as programmer, I decided to automate their information system and make it electronic to reduce effort and avoid Losing information to ministry employees and increase accuracy through a system that displays an effective set of screens that You benefit from "Ministry requirements":

## Log in:



#### I used many class to make login page like:

## before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- JTextField:to enter the text box





- JPasswordField: to enter the password hidden like (\*\*\*\*) instead (1313)
- String: for (jobNo), (path to place storage files), ((job)&(pass).
- File: to read from new file and to write on new file
- array list & array result: to store split elements like [ 1 2 3 4]
- string: parsing password

String path = "C:\\MinistryOfFinanceFiles\\Login.txt"

## Launch the application:

- I used object oriented to talk between screen (action)
- Try &catch Java Exceptions (throw an error)
- For statement to read line by line called The Foreach statement repeats a group of embedded statements for each element in an array or an object collection.
   [1234,1313] so [0,1] [Job No, Password]
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(null) to center the JFrame
- frame.setResizable(false) to disable the maximize button
- addActionListener(new ActionListener()

## Create the frame:

from design window and source

- setTitle to put title
- setDefaultCloseOperation(JFrame.EXIT ON CLOS) to close
- setBackground,setBorder,setLayout setHorizontalAlignment(SwingConstants.CENTER) to setting frame like color and place in center
- setFont, Jlable to (password and Job No), JButton, setFont to button setting.
- Used again try & catch to Java Exceptions (throw an error)

read file and red new file foreach to read line by line and split array list by if [0] for job No and [1] for password, JOptionPane.show Message Dialog to make message if data is false.







#### Main page:

Main Page		$\times$
Ministry of Finance		
Market	Vacations	
My Info	Vacations	
Reports	Complaints & Suggestio	

#### I used many class to make Main page like:

## before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- Jbutton: create button.

## Launch the application:

- I used object oriented
- Try &catch Java Exceptions (throw an error)
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(**null**) to center the JFrame
- frame.setResizable(false) to disable the maximize button
- addActionListener(new ActionListener()

## Create the frame:

from design window and source

- icon from properties class path resource
- setTitle to put title
- setIconImage
  - (Toolkit.getDefaultToolkit().getImage(MainPage.class.getResource("/images/money.png"))): from file I saved in it many images .
- setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOS) to close
- setBounds
- setBackground,setBorder,setLayout
- setVerticalAlignment (SwingConstants.TOP)
- setHorizontalAlignment(SwingConstants.CENTER) to setting frame like color and place in center
- setFont, Jlable , JButton : report ,my info , vecation ,suggesstion and comlaint.
- , setFont to button setting.
- getScaledInstance: to get icon from image file
- setForeground
- Mouse pressed To return to the screen login page
- Action event to lock the existing screen and open the required

so, <mark>set</mark> to put and give but get to take.





#### My Info:

🎎 My Info		_		$\times$
Minis	try of Finance			
Name	A			
Job No.	1234			
Job Title	Developer			
Phone No	78900			
Address	Salt			
<u></u>				_
Ed	lic		Back	

## I used many class to make My Info page like:

## before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- JTextField: enter the text box Job No, name, Job title, Phone, Address
- String: (job no)
- String result list & File: to read from new file and to write on new file array list array result: to store split elements like [0,1,2,3,4] [A,1234, Developer, 78900, Salt]

String path = "C:\\MinistryOfFinanceFiles\\Login.txt"

## Launch the application:

- I used object oriented
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(null) to center the JFrame
- frame.setResizable(false) to disable the maximize button
- addActionListener(new ActionListener()

#### Create the frame:

- Try &catch Java Exceptions (throw an error)
- For statement to read file and red new file foreach to read line by line and split
  array list by if [0] for Name[1] for job No [2] for Job title [3] for Job no [4] for
  address. Like if(resultList[1].equals(jobNo)textFieldName.setText(resultList[0])
  - setTitle to put title
  - setIconImage(Toolkit.getDefaultToolkit().getImage(MainPage.class.getResource("/images/money.png"))): from file I saved in it many images.
  - setBond
  - setDefaultCloseOperation(JFrame.EXIT ON CLOS) to close
  - setBackground,setBorder,setLayout
  - Mouse pressed To return to the screen login page
  - Action event to lock the existing screen and open the required
  - setHorizontalAlignment(SwingConstants.CENTER) to setting frame like color and place in center





- setFont, Jlable to (password and Job No), JButton, setFont to button setting.
  - In this screen the data will be filled aotamaticly after enter login and you can edit Phone NO ,Addres by the flowing screen by press Edit button .



### Edit My Info:



### I used many class to make Edit My Info page like:

## before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- JTextField:to enter the text box
- String: for (Address), (path to place storage files), (phone)
- File: to read from new file and to write on new file
- array list & array result: to store split elements like [0, 1, 2, 3]

String path = "C:\\MinistryOfFinanceFiles\\Login.txt"

#### Launch the application:

- I used object oriented
- Try &catch Java Exceptions (throw an error)
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(null) to center the JFrame
- frame.setResizable(false) to disable the maximize button
- addActionListener(new ActionListener())

## Create the frame:

- Try &catch Java Exceptions (throw an error)
- For statement to read file and red new file foreach to read line by line and split

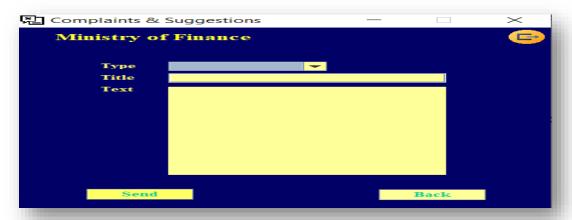






array list/result list by if [3] for PhoneNo, if [4] for Address, if [1] job no but it doesn't change

- setIconImage(Toolkit.getDefaultToolkit().getImage(MainPage.class.getResource("/images/money.png"))) : from file I saved in it many images .
- setBond
- setDefaultCloseOperation(JFrame.EXIT ON CLOS) to close
- setBackground,setBorder,setLayout
- Mouse pressed To return to the screen login page
- Action event to lock the existing screen and open the required
- setHorizontalAlignment(SwingConstants.CENTER) to setting frame like color and place in center
- setFont, Jlable to (password and Job No), JButton, setFont to button setting.
   Complaints&Suggestions:



## I used many class to make complains & suggestions page like:

## before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- JTextField:to enter the text box
- JComboBox: to select type of complains & suggestions
- Jlable
- JButton:send &back
- String: for type of complains& suggestions
- File: new file("C:\\MinistryOfFinanceFiles\\ComplaintsAndSuggestion.txt");
- File writer: to write it

## Launch the application:

- I used object oriented
- Try &catch Java Exceptions (throw an error)
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(null) to center the JFrame
- frame.setResizable(false) to disable the maximize button.

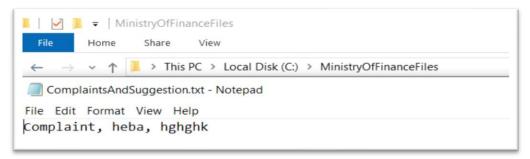




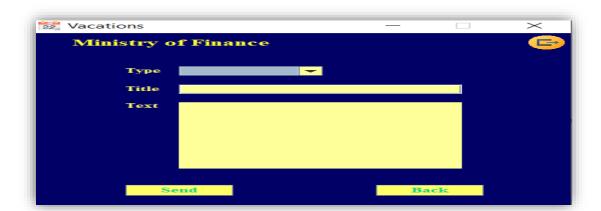
### Create the frame:

from design window and source

- Set Title: to put title
- setIconImage (Toolkit.getDefaultToolkit(). getImage(MainPage.class.getResource("/images/money.png"))): from file I saved in it many images.
- setBond
- setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOS) to close
- setBackground,setBorder,setLayout
- setFont, Jlable to (password and Job No), JButton, setFont to button setting
- Mouse pressed To return to the screen login page
- Action event to lock the existing screen and open the required.
- Try &catch Java Exceptions (throw an error)
- writer in file ("%s, %s, %s%n", type, title, text, "\n")) new line 8 spaces between them



#### Vacations:



#### I used many class to make vacations page like:

## before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- JTextField:to enter the text box
- JComboBox: to select type of complains & suggestions





- Jlable
- JButton:send &back
- String:fortypevacation ("SelectOne", "Leaving", "Sick Leave", "Annual Vacation")
- File: new file("C:\\MinistryOfFinanceFiles\\ComplaintsAndSuggestion.txt");
- File writer: to write it

## Launch the application:

- I used object oriented
- Try &catch Java Exceptions (throw an error)
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(null) to center the JFrame
- frame.setResizable(false) to disable the maximize button.

### Create the frame:

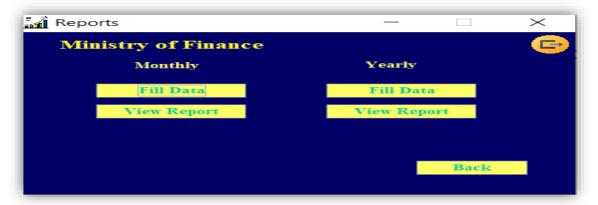
- Set Title: to put title
- setIconImage (Toolkit.getDefaultToolkit(). getImage(MainPage.class.getResource("/images/money.png"))): from file I saved in it many images.
- setBond
- setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOS) to close
- setBackground,setBorder,setLayout
- setFont, Jlable to (password and Job No), JButton, setFont to button setting.
- Mouse pressed To return to the screen login page
- Action event to lock the existing screen and open the required
- Try &catch Java Exceptions (throw an error)
- writer in file ("%s, %s, %s%n", type, title, text, "\n")) new line 8 spaces between them







#### Reports:



### I used many class to make Reports like:

## before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- Jbutton: create button.
- JLable
- Jbutton

## Launch the application:

- I used object oriented
- Try &catch Java Exceptions (throw an error)
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(**null**) to center the JFrame
- frame.setResizable(false) to disable the maximize button
- addActionListener(new ActionListener()

## Create the frame:

- icon from properties class path resource
- setTitle to put title
- setIconImage(Toolkit.getDefaultToolkit().getImage(MainPage.class.getResource("/images/money.png"))): from file I saved in it many images.
- setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOS) to close
- setBounds
- setBackground,setBorder,setLayout
- setHorizontalAlignment(SwingConstants.right) to setting frame like color and place in center
- setFont, Jlable , JButton : fill data ,view report , vecation ,back.
- , setFont to button setting.
- getScaledInstance: to get icon from image file
- setForeground
- Mouse pressed To return to the screen login page





 Action event to lock the existing screen and open the required so, set to put and give but get to take.

#### Fill Data:

Fill Data		_ [	×
Ministry	of Finance		
Month Spending Earning	Select Month ▼	Save Back	

## I used many class to make Fill Data page like:

#### before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- JTextField:to enter the text box
- JComboBox: to select a month
- Jlable
- JButton:save &back
- String: "Select Month", "January", "February", "March", "April", "May", "June", "July", "August", "September", "October", "November", "December".
- File: new file("C:\\MinistryOfFinanceFiles\\ComplaintsAndSuggestion.txt");
- File writer: to write it

## Launch the application:

- I used object oriented
- Try &catch Java Exceptions (throw an error)
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(**null**) to center the JFrame
- frame.setResizable(false) to disable the maximize button.

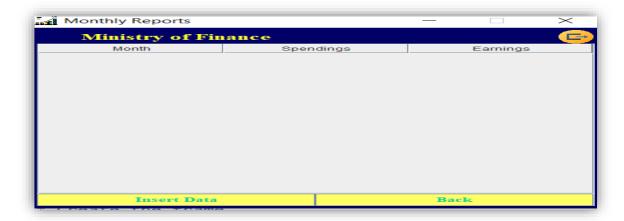
#### Create the frame:

- Set Title: to put title
- setIconImage (Toolkit.getDefaultToolkit().
- getImage(MainPage.class.getResource("/images/money.png"))) : from file I saved in it many images .
- setHorizontalAlignment(SwingConstants.RIGHT)
- setBond
- setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOS) to close

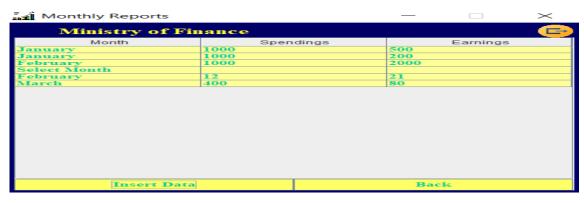




- setBackground,setBorder,setLayout
- setFont, Jlable , JButton, setFont to button setting.
- Mouse pressed To return to the screen login page
- Action event to lock the existing screen and open the required
- Try &catch Java Exceptions (throw an error)
- writer in file ("%s, %s, %s%n", type, title, text, "\n")) \n: new line. \t new tab 8spases
- When you insert in Earning and Spending click on save then click on view report then click on insert data to see report that saved or back to return to report page screen. Like it:



## **Monthly Report:**



## I used many class to make monthly reports page like:

## before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- Jlable
- JTable: to make tableJButton: insert data &back
- String: ("C:\\MinistryOfFinanceFiles\\ComplaintsAndSuggestion.txt");









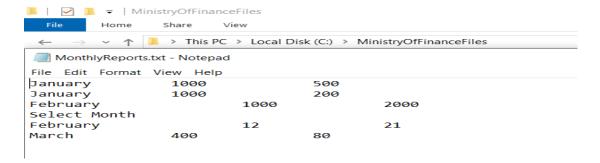
- File: new file in ("C:\\MinistryOfFinanceFiles\\ComplaintsAndSuggestion.txt");
- string "Month", "Spending", "Earnings"

## Launch the application:

- I used object oriented
- Try &catch Java Exceptions (throw an error)
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(null) to center the JFrame
- frame.setResizable(false) to disable the maximize button.

#### Create the frame:

- Set Title: to put title
- setIconImage (Toolkit.getDefaultToolkit().
- getImage(MainPage.class.getResource("/images/money.png"))): from file I saved in it many images.
- setHorizontalAlignment(SwingConstants.RIGHT)
- setBond
- setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOS) to close
- setBackground,setBorder,setLayout
- setFont, Jlable , JButton, setFont to button setting.
- Mouse pressed To return to the screen login page
- Action event to lock the existing screen and open the required
- Try &catch Java Exceptions (throw an error)
- File reader &split rows
- writer in file ("%s, %s, %s %n", type, title, text, "\n")) \n: new line. \t new tab 8spases
- setHorizontalAlignment(SwingConstants.RIGHT)







#### Fill Data:

Fill Data		×
Ministry of Finance		
Year	Save	
Spending	Back	1
Earning		

## I used many class to make Fill Data page like:

## before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- JTextField:to enter the text box
- Jlable
- JButton:save &back
- String: ("C:\\MinistryOfFinanceFiles\\ComplaintsAndSuggestion.txt");
- File: new file("C:\\MinistryOfFinanceFiles\\ComplaintsAndSuggestion.txt");

## Launch the application:

- I used object oriented
- Try &catch Java Exceptions (throw an error)
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(**null**) to center the JFrame
- frame.setResizable(false) to disable the maximize button.

## Create the frame:

- Set Title: to put title
- Set layout
- setIconImage (Toolkit.getDefaultToolkit().
- getImage(MainPage.class.getResource("/images/money.png"))) : from file I saved in it many images .
- setHorizontalAlignment(SwingConstants.RIGHT)
- setHorizontalAlignment(SwingConstants.center)
- setBond





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- setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOS) to close
- setBackground,setBorder,setLayout
- setFont, Jlable , JButton, setFont to button setting.
- Mouse pressed To return to the screen login page
- Action event to lock the existing screen and open the required
- Try &catch Java Exceptions (throw an error)
- writer in file ("%s, %s, %s%n", type, title, text, "\n")) \n: new line. \t new tab 8spases
- When you insert in year & Earning and Spending click on save then click on view report then click on insert data to see report that saved or back to return to report page

<mark>screen. Like it:</mark>

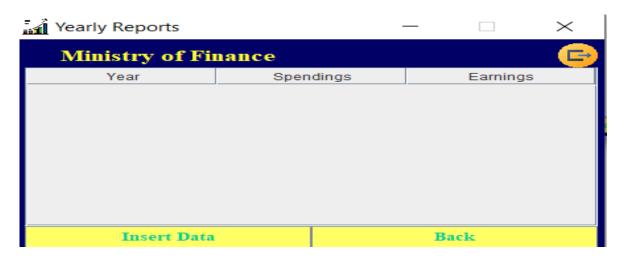








#### **Yearly Reports:**



## I used many class to make Yearly reports page like:

before any thing should use import to use any class

- JFrame: Used to add a window
- JPanel: Create a new JPanel with specified layout
- Jlable
- JTable: to make table
- JButton: insert data &back
- String: ("C:\\MinistryOfFinanceFiles\\ComplaintsAndSuggestion.txt");
- File: new file in ("C:\\MinistryOfFinanceFiles\\ComplaintsAndSuggestion.txt");
- string "Month", "Spending", "Earnings"

## Launch the application:

- I used object oriented
- Try &catch Java Exceptions (throw an error)
- frame.setVisible(true) to become visible
- frame.setLocationRelative to(null) to center the JFrame
- frame.setResizable(false) to disable the maximize button.

#### Create the frame:

- Set Title: to put title
- setIconImage (Toolkit.getDefaultToolkit().
- getImage(MainPage.class.getResource("/images/money.png"))): from file I saved in it many images.
- setHorizontalAlignment(SwingConstants.RIGHT)





- setBond
- setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOS) to close
- setBackground,setBorder,setLayout
- setFont, Jlable , JButton, setFont to button setting.
- Mouse pressed To return to the screen login page
- Action event to lock the existing screen and open the required
- Try &catch Java Exceptions (throw an error)
- File reader &split rows
- writer in file ("%s, %s, %s %n", type, title, text, "\n")) \n: new line. \t new tab 8spases
- setHorizontalAlignment(SwingConstants.RIGHT



I explained all screen from in term algorithm, job and Evaluate source code:

variables: like Path, JobNo, Name.Etc.

event: shown up.

Component: like JLable, JPanel, JTextField..etc..

**input**: algorithm written based on the requirements of the ministry and then the code that consists of a set of variables and their names, a guided object, import, requirements, etc. (as in the code).

output: (interface screens),

**control structures**: (like For statement to read file and red new file foreach to read line by line and spli array list by if [0] for Name[1] for job No [2] for Job title).

**scope**: (solving problems of the Ministry of Finance in terms of data) \*\* all code in appendix:

# Programming steps:

Program development steps includes, planning, Analysis, Design, development & Implementation, testing, maintenance.

1. Planning:

For developing a worm we've to spot the sure output that we tend to needed to urge through the program. and therefore, the given inputs should fret. at that time, we tend to should have confidence the right method should be done.

- 2. Analysis: This step is regarding analyzing the performance of the package at varied stages and creating notes on further necessities. Analysis is incredibly necessary to proceed any to succeeding step.
- 3. Design: Once the analysis is complete, the step of planning takes over, that is largely building the design of the project. This step helps take away attainable flaws by setting a typical and making an attempt to stay thereto.





- 4. Development & Implementation: the particular task of developing the package starts here with information recording occurring within the background. Once the package is developed, the stage of implementation comes in wherever the merchandise goes through a pilot study to visualize if it's functioning properly.
- 5. Testing: The testing stage assesses the package for errors and documents bugs if their area unit any.
- 6. Maintenance: Once the package passes through all the stages with none problems, it's to endure a maintenance method whereby it'll be maintained and upgraded from time to time to adapt to changes.

# Styles of programming:

A programming paradigm is also an elementary type of building the structure and components of a program. The styles and capabilities of programming languages printed by their paradigms. as an example, a linguistic communication might entirely be designed to follow one paradigm (i.e. Haskell), whereas others can support multiple paradigms.

A Paradigm usually thought of as a philosophical or theoretical framework. This framework is then used as a result of the idea of a replacement approach of viewing problems.

This topic investigates the 3 major programming paradigms:

- Imperative (or procedural)
- Object oriented
- Event-driven

Main forms of programming

#### 1. Procedural Programming-

Procedural language is a list of instructions telling a computer (a programming paradigm that uses a linear or top-down approach), Step-by-Step, what to do, in an order of how-to performance the first code to the

- Second and So forth which may contain loops. Procedural programming,
- languages include C, C++, Fortran, Pascal, these are very detailed and
- takes tons of your time to put in writing. I.
- It relies on the programmer to provide a Solution to a problem or to
- provide an answer. It rotates around keeping code as Short as possible





and contains a Sequence of Steps to be carried out. Procedural language is used in the Linux Kernel and Quake III Arena. This can be used to create Small projects because e it is simple and does not require commands to be entered. Procedural programming does not allow the user to Copy and paste the Code onto another program also procedural is difficult to understand and takes time to getting used to Procedural programming is to boot noted as imperative programming.

- In procedural programming, a program consists of data and modules/procedures that operate the knowledge. the two treated as separate entities.
- Example: algorithmic language, ALGOL, Java and BASIC Pascal and C.

#### 2. Object oriented

In the object-oriented programming (OOP) paradigm; but a program is built from objects. associate object is associate instance of a class, that's associate encapsulation of data (called fields) and so the procedures (called methods) that manipulate them. In most, but not all, cases, the fields can entirely be accessed or modified through the methods. associate object so is type of a miniature program or a self-contained part, that produces the OOP approach a great deal of modularized so easier to stay up and extend.

Example: Java, C++, Python, PHP, Ruby, Perl

#### 3. Event-driven Programming

Event driven programming is a paradigm which is determined by events or user actions E.G clicking on a mouse. It will solely be used employing a graphical user interface which is one of its main features. It can interact with any hardware that is attached to a computer and is not a complex program to use. A program can easily be developed and all of the

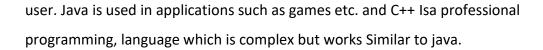






properties used in the program are all independent So they can Save

altogether Saving the programmer time and effort Saving them Separately. Event driven programming uses the following coding types Visual Basic, java, java Script and C++. Java Script can be used to provide interactivity for web pages. Visual basic provides a graphical user interface for the





# Characteristics of the foremost forms of programming:

#### 1. Procedural oriented

- Puts a great deal of importance on things to be done
- Employs top-down approach in program planning
- within the cases of giant program, delivery modification is hard and time overwhelming.
- acceptable and effective techniques out of stock to secure data of a operate from others.

## 2. Characteristics of Object-oriented programming

- the concept of an information class makes it possible to stipulate subclasses of data objects that share some or all of the foremost class characteristics. noted as inheritance, this property of OOP forces a great deal of thorough data analysis, reduces development time, and ensures a great deal of correct writing.
- Since a class defines entirely the knowledge it's to be troubled with, once associate instance of that class (an object) is run, the code will not be ready to accidentally access various program data. This characteristic {of data information of information} of information} activity provides larger system security and avoids causeless data corruption.
- The definition of a class is reusable not entirely by the program that





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it's initially created but put together by various object-oriented programs (and, for this reason, usually a great deal of merely distributed to be employed in networks).

 the concept {of data information of information} of information} classes permits associate engineer to create any new data kind that is not already printed among the language itself.



## 3. Characteristics of Event-driven programming

• Service head • Time drive • Event handler • Trigger operate • Flexibility • Event loops

Event Driven Programming Paradigm	Procedural Programming Paradigm	Object Oriented Programming Paradigm
Provides graphical user interface to create the programs.	Provides character user interface to write the commands.	Provides command writing in modules.
Actions are defined on events. These events could be occurred by mouse clicking and moving or keyboard strokes.	Commands are written in linear fashion and executed also in linear fashion.	Objects and functions are prepared for interaction to perform specific tasks.
Focuses on selecting user interface.	Focuses on sequential execution of steps.	Focuses on objects or data and facilitate to secure it from unauthorized access.
Most common languages which follow this paradigm are Visual Basic and C#.	Most common languages which follow this paradigm are Basic, Fortran and COBOL.	Most common languages which follow this paradigm are Smalltalk, C++ and JAVA.





## Common options of integrated development environments

An IDE usually contains a code editor, a compiler or interpreter, and a computer program, accessed through one graphical program (GUI). The user writes and edits ASCII text file within the code editor. The compiler interprets the ASCII text file into a legible language that's practicable for a laptop. and also the computer program tests the package to unravel any problems or bugs.

An IDE may contain options like programmable editors, object and information modeling, unit testing, a ASCII text file library and build automation tools.

IDE's toolbar appearance very like a word processor's toolbar. The toolbar facilitates color-based organization, source-code data formatting, error nosology and news, and intelligent code completion. Through AN IDE's interface, a developer or team of developers will compile and execute code incrementally and manage changes to ASCII text file during a uniform manner. day area unit usually designed to integrate with third-party version management libraries, like GitHub and Apache's Subversion.

IDE will support model-driven development (MDD). A developer operating with IDE starts with a model, that the IDE interprets into appropriate code. The IDE then corrects and tests the form-driven code, with a high level of automation. Once the build is productive and properly tested, it are often deployed for more testing through the IDE or different tools outside of the IDE.

# Java Debugging with Eclipse

Debugging is the process of finding the causes and fixing identified bugs in program.

These bugs are found either by testing or by users.

Debugging cannot help develop to secure applications but is essential to improving the robustness of software program.

Because debugging is a reactive process, it's not a good way to improving security.

Debugging permits you to run a program interactively while watching the supply code and the variables all through the execution.

A breakpoint inside the source code specifies in which the execution of this system should forestall all through debugging. As soon as the program is stopped, you can look at variables, alternate their content, and so forth.

To stop the execution, if a discipline is read or modified, you may specify watchpoints.

Eclipse permits you to begin a Java program with the basic Debug mode.



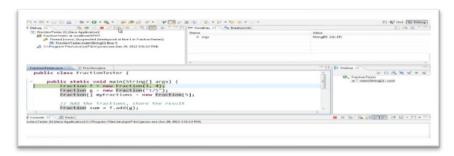


Eclipse provides a right perspective, which provides you a pre-configured set of views. Eclipse lets in you to govern the execution float through debug commands.

## . putting Breakpoints

To define a breakpoint on your supply code, right-click on inside the left margin in the Java editor and select Toggle Breakpoint. Instead, you may double-click on this role.

I made track debug by used name of clear variables as instead comments the aim of this is to understand the code for me and for each programmer or user after me and easy to track errors and correct them, which saves time, effort and cost.



## starting the Debugger

To debug your software, select a Java file with the primary technique. Right-click on it and pick Debug as Java application.

When you have no longer defined any breakpoints, program as usually, to debug the program, you need to outline breakpoints. Eclipse asks you in case you want to replace to the Debug angle as soon as a forestall point is reached. Solution yes within the corresponding dialog. Afterward, Eclipse opens this attitude.

#### Controlling this system execution

Eclipse actually provides buttons in the section of toolbar for controlling the execution of this system you are debugging. Typically, it's miles easier to use the corresponding keys to control this execution.

You can use permit use shortcut keys to step via your coding. The meaning of these keys is defined in the following desk.

## Uses of IDE:

- **IDE can increase our productivity vastly.** trifling in mundane tasks like managing dependencies, dead written syntax, managing pismire files, compiler parameters, setting testable atmosphere, etc. are reduced.
  - Code highlight, syntax validation, automotive vehicle code data formatting and automotive vehicle competition:

In Associate in Nursing IDE we will notice the matter abundant sooner, in all probability even whereas writing our code.

• collection and managing lib dependencies: making compilation scripts and putting





in atmosphere for advanced applications may be a frightening task and authorization it for the IDE can save our days of labor.

- **Debugging**: corporal punishment the applying step by step whereas having the ability to observe variables current worth, stack trace, examine memory standing, and alternative options in an exceedingly single screen is that the most significant tool for any developer.
- **Refactoring and performance hints**: most IDE support quick code refactoring and templates out of the box, code stop working (for example, inaccessible code or unused variables) and performance hints.
- **Code examine and documentation**: most IDE enable to preview code documentations or inspecting the code whereas programming, which may be very useful once operating with external libs.
- **Final result preview**: most IDE additionally build it simple to put in writing UI giving nice previews while not having to begin our application.

# Using IDE for development of applications contrasted and not

Without IDE, developers pay time deciding what tools to use for numerous tasks, configuring the tools and learning the way to use them. several or perhaps all of the required dev-test tools area unit enclosed in one integrated development surroundings

IDE also are designed with all their tools beneath one program. IDE will standardize the event method by organizing the required options for package development within the UI.

In our application development there are several commands and instructions. When we got caught to an error we debugged it because we were using Eclips. If not we had to run the program by line-by-line execution.

Code suggestion had been very useful for building this application. So, we didn't have to refer the books or websites while forgetting any coding. If we didn't we would be working for developing this application for plenty of time.

For this application we needed to build up an interface .Therefore we used platform specific tools in for designing an interface. Otherwise we should have downloaded and study another designing software such as Photoshop and then have to be worked on the project.

We used Eclibs as our editor also. That shows keywords differentially. At time if we have used a text editor there would be no difference among keywords and texts.

# importance of a coding standard

## Debugging in application

Debugging, in computer programing and engineering, may be a multistep method that involves distinguishing a drag, uninflected the supply of the matter, so either correcting the





matter or determinative the way to figure around it. the ultimate step of debugging is to check the correction or workaround and check that it works.

## Advantages of debugging

- •Debuggers will facilitate to try to circumstantial examination or alteration of variables, code, or the other facet of the runtime atmosphere, whereas manual debugging needs ME to prevent, edit, and re-execute the appliance (possibly requiring recompilation).
- Debuggers will attach to a running method or use a crash dump, whereas with manual debugging, "steps to reproduce" a defect area unit necessary.
- Debuggers will show complicated knowledge structures, multi-threaded environments, or full runtime stacks simply and during an additional clear manner.
- Debuggers supply many ways to scale back the time and repetitive work to try to virtually any debugging tasks.
- Visual debuggers and console debuggers area unit each helpful, and have several options in common.
- A visual program integrated into Associate in Nursing IDE additionally provides you convenient access to good redaction and every one the opposite options of the IDE, during a single integrated development atmosphere.

## Standard code

1. will increase Efficiency:

Establishing cryptography standards allows the team to find issues early or stop them entirely. This enhances the potency throughout the code method.

2. Minimize the chance of Project Failure:

Many a time IT comes fail because of code development issues. cryptography standards cut back the chance of failures.

3. Reduces quality

Higher the quality of a code the additional vulnerable it's to errors. cryptography standards facilitate develop code programs with reduced quality thereby minimizing errors.

4. Maintenance becomes simple

If an ASCII text file is consistent it is often simply maintained. this is often be} as a result of anyone can step in at any stage maintaining it or incorporate any modifications.

5. Correction of bugs

A consistent ASCII text file makes it simple to find and proper bugs within the code.

6. A comprehensive read

A consistent ASCII text file facilitates a clearer read of however the code fits at intervals the larger application or the corporate as an entire.

7. price saving

A consistent code ends up in a transparent read that successively leads to the potential for additional code utilize. This drastically reduces the price and development effort





#### **Empty space**

Indented all the criteria for writing said at some level. In some languages, indentation is used by the compiler to specify the range of functions. In free-form languages, such as Java, there is no actual result on the code grouping itself, and it simply won't build the additional code readable to humans, while giving a tag to the domain while not directly affecting the program

#### Comment code

The comment symbol is part of self-processing in most writing standards. Comments must clearly demonstrate the operation of the code, it is usually clear once writing larger programs that you lose what the confirmed functions do, and it is easier to review a well-written comment that roams through lines of code while trying to retrieve what the code that we actually wrote works.

#### Variable declarations:

The names of the variables will be known and clear to the next programmer or any programmer

This is another area that is always included in the writing criteria. Square variable statements are usually noticed once you program but in larger programs it will be a distinction between understanding the code and not. Variable ads must be long and indicate that the variable they store is running. Within most programming languages, the variable will have any name, except for two keywords measured by the same square, there is no more than one command per line. If measuring square orders is in severe disarray, we tend to not be able to simply correct or not notice The functions of the program, the length of the line must not exceed eighty or one hundred characters, if the driving path will become one hundred and eighty or more one hundred, we are able to perceive writing more, naming conventions must be named categories, files, variables, namespaces and everything in the code.

## Test Plan

Made 15 Interface	<b>/</b>
Read from file	<b>/</b>
Write on file	<b>/</b>
Connect them	
together	
Move and link	<b>\</b>
A location in the	
middle of the screen	•
Site map, Mockups-	
Wireframe	•







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