

TASKS FOR AI DIPLOMA IN ODC



Task 1:

What are the disadvantages of OOP?!

- Size is larger than other programs.
 - It required a lot of effort to create.
 - It is slower than other programs.
 - It is not suitable for some sorts of problems.
 - It takes time to get used to it.
 - Design is tricky.
 - Difficulties in unit testing.
-

Task2:

What is the difference between multithreading and multicore?!

Multithreading	Multicore
Multithreading refers to a program that can take advantage of a multicore computer by running on more than one core at the same time.	Multicore refers to a computer or processor that has more than one logical CPU core, and that can physically execute multiple instructions at the same time.

TASK3:

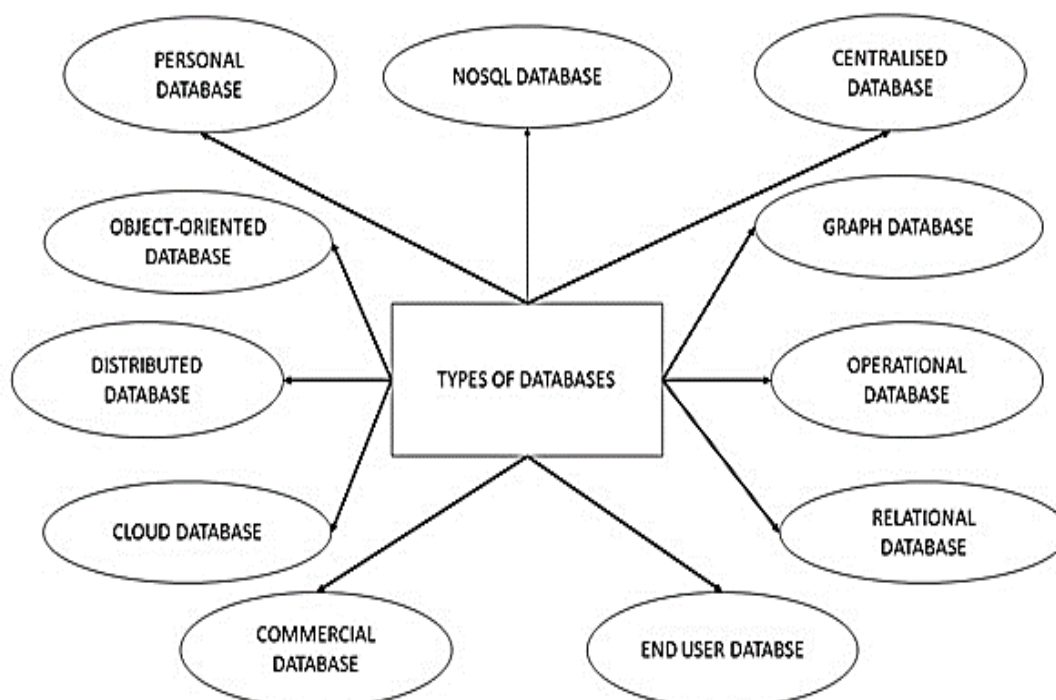
What is the tabulation?!

“Tabulation of data as read in the introduction refers to the method of processing data by organizing it into a table. With the help of tabulation, numeric information is arrayed logically and orderly into columns and rows, to help in their statistical data interpretation.”

TASK4:

The difference between the types of databases?!



“Types of databases”





Task5:

How to write a clean code?!



- Use descriptive names

<pre>2 3 const n = 'John' 4 const l = 'Doe'</pre>		<pre>2 3 const lastNamePhysician = 'Doe' 4 const firstNamePhysician = 'John'</pre>	
---	---	--	---

- Use empty lines to create a readable code



<pre>2 3 const name = 'John' 4 const lastName = 'Doe' 5 function getExchangeRate(amount, costCurrency){ 6 const total = amount * costCurrency 7 return(total) 8 } 9 function getWelcomeText (name, lastName){ 10 const fullName= name + ' ' + lastName 11 const welcomeText= 'Dear ' + fullName + ',' 12 return (welcomeText) 13 } 14 15 16</pre>		<pre>2 3 const name = 'John' 4 const lastName = 'Doe' 5 6 function getExchangeRate(amount, costCurrency){ 7 const total = amount * costCurrency 8 return(total) 9 } 10 11 function getWelcomeText (name, lastName){ 12 const fullName= name + ' ' + lastName 13 const welcomeText= 'Dear ' + fullName + ',' 14 15 return (welcomeText) 16 } 17 18</pre>	
--	---	--	---

- Do not send more than three parameters into a function

<pre>function createAppointment(patientName, physicianName, date, time, location) { // ... }</pre>	
<pre>function createAppointment (appointment) { // ... }</pre>	



- Remember the functions must do only one thing

```
function createAppointment(appointment) {  
  const date = appointment.date  
  const patientList = getPatientList()  
  const currentPatient = patientList.find(patient => {  
    patient.id = appointment.patient.id  
  })  
  const currentPhysician = physicianList.find(physician => {  
    physician.id = appointment.physician.id  
  })  
  const currentLocation = locationList.find(location => {  
    location.id = appointment.location.id  
  })  
  sendToCreateAppointment(currentPatient, currentPhysician, currentLocation)  
}  
  
function getPatientInformation(patientId) {  
  const patient = patientList.find(patient => {  
    patient.id = patientId  
  })  
  return (patient)  
}
```



- Functions must be small
- Reduce the number of characters in a line
- Avoid using comments
- Create a descriptive message when you create a commit

```
manzanitapro@Claudias-MacBook-Pro ~ % git commit -m "refactoring"  
  
manzanitapro@Claudias-MacBook-Pro ~ % git commit -m "Get patient information from CRM"
```



- Use Unit Test and practice Test Driven Development
- Learn Design Patterns

Task6:

What is a cron jobs?!

Cron is a time-based job scheduler in Unix or Unix-like computer operating systems.

Task7:

How to create an API in Python?!

There are different ways to create an API in Python, the most used being FastAPI and Flask. So, I will explain how both works, so that you can use the way to create APIs in Python that you like the most. Let's start with FastAPI.

Task8:

What are the C++ frameworks to use in python?!

The Boost Python Library is a framework for interfacing Python and C++

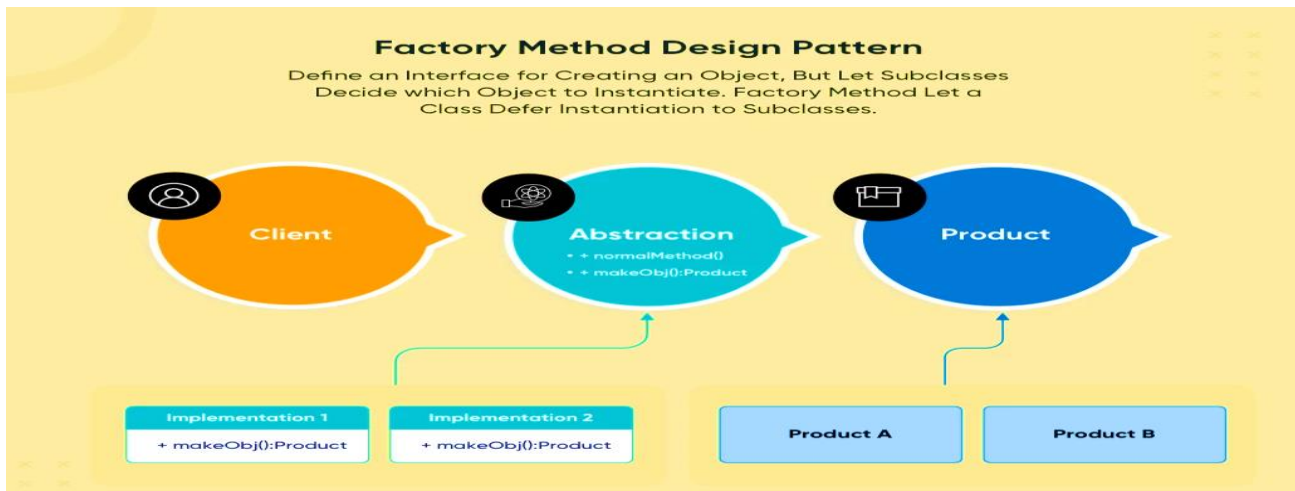
Task9:

What are a most popular types of design pattern?!

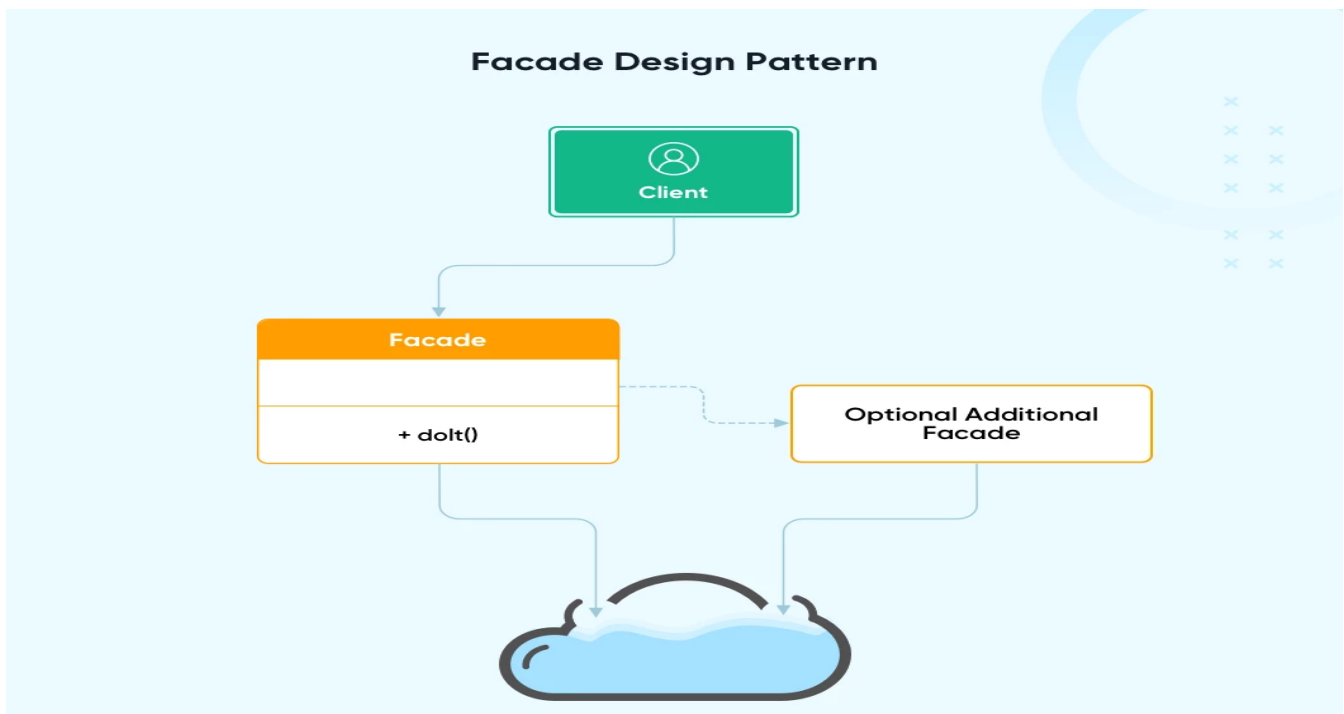
- Singleton Design Pattern



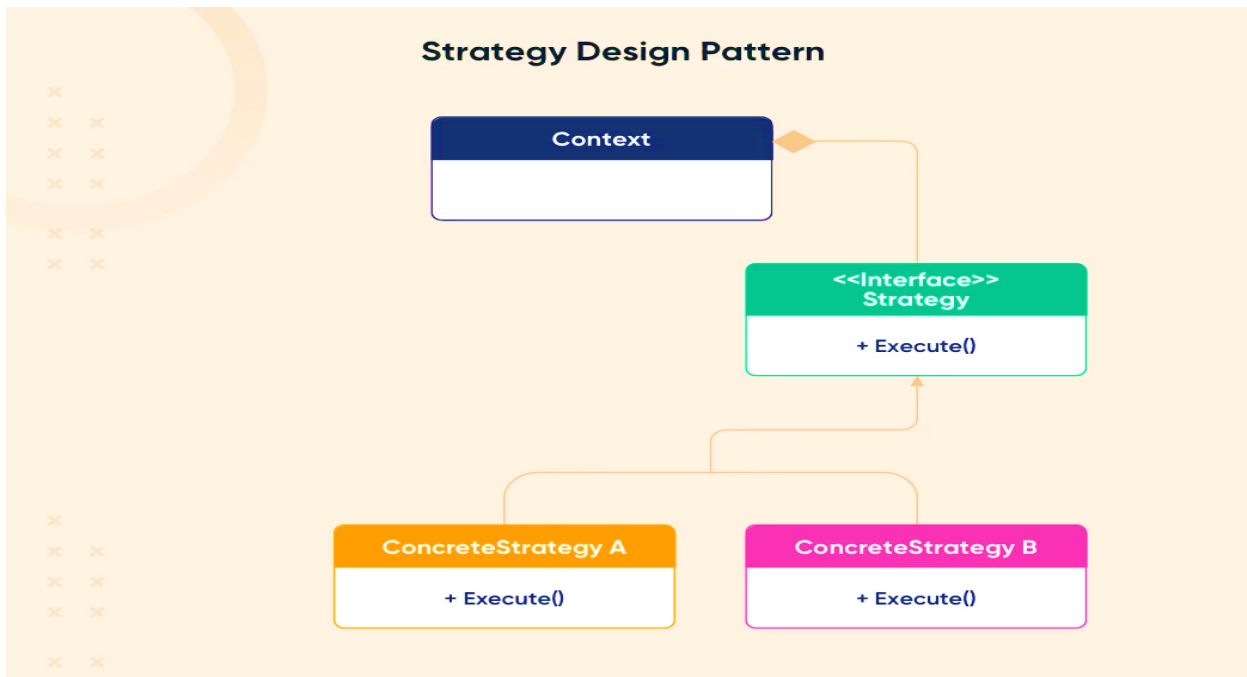
- Factory Method Design Pattern



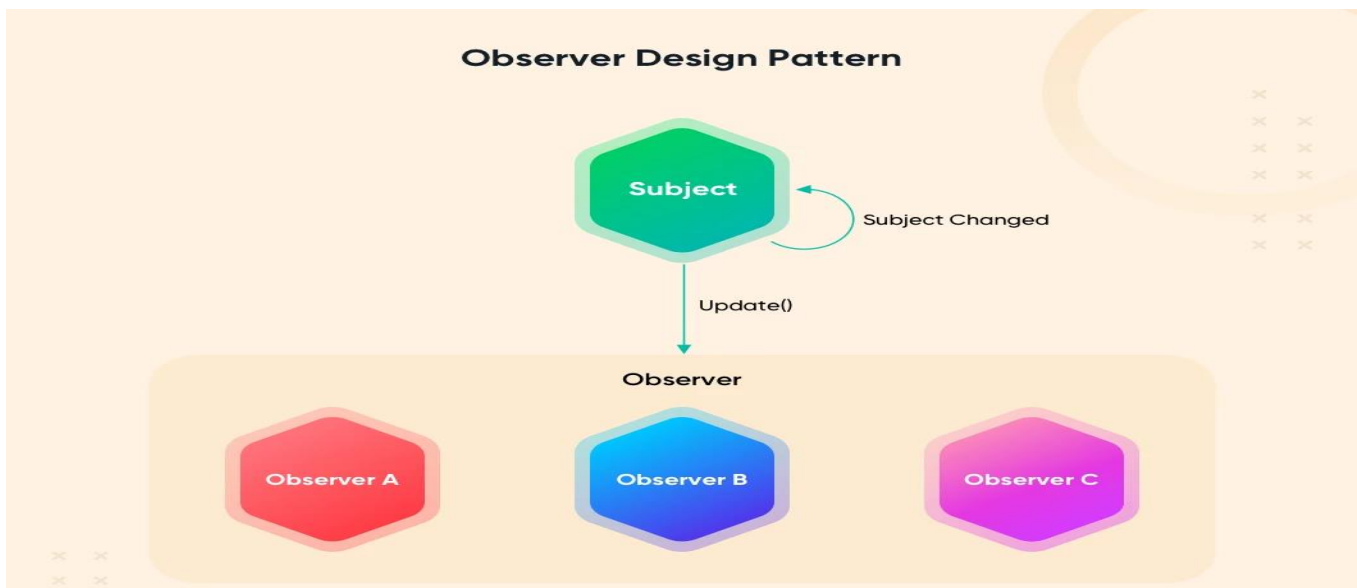
- Facade Design Pattern



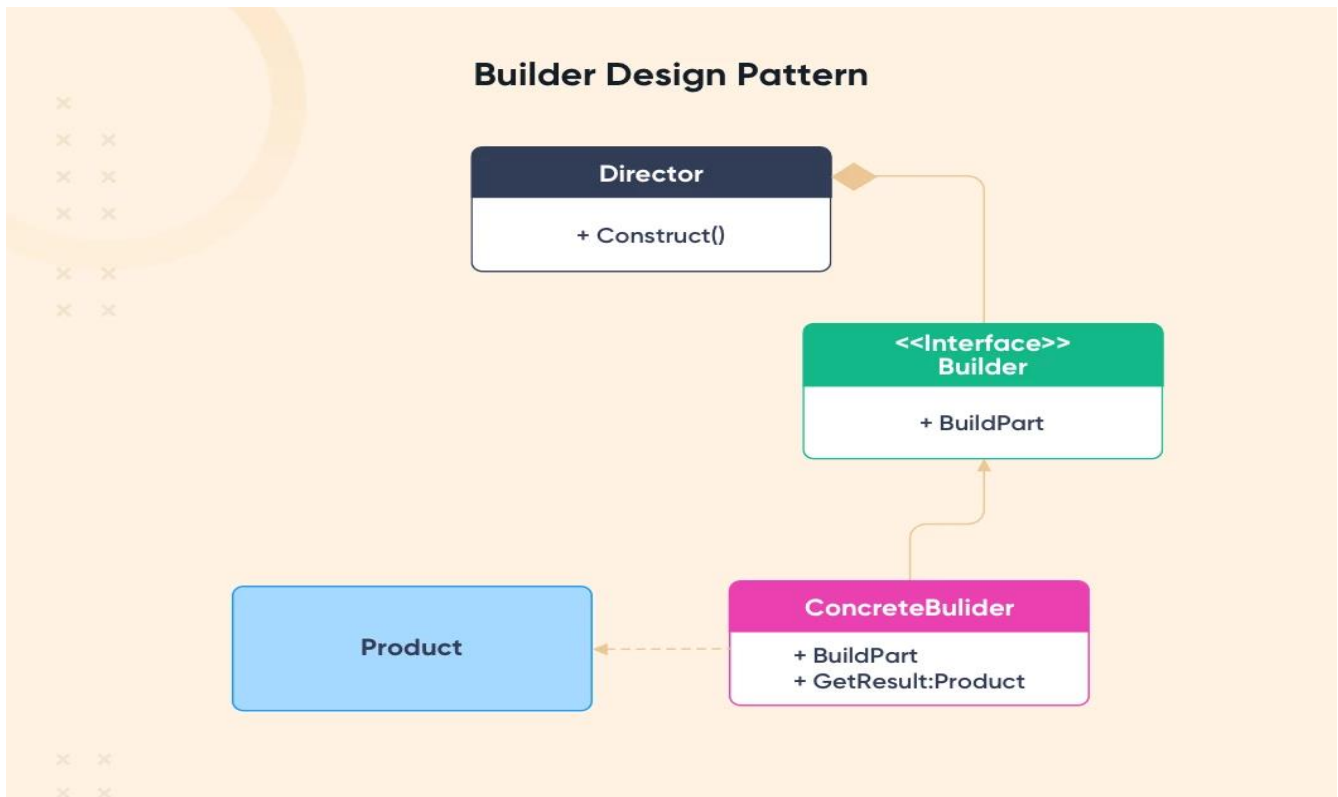
- Strategy Design Pattern



- Observer Design Pattern



- Builder Design Pattern



- Adapter Design Pattern

