|  |  |  |  |
| --- | --- | --- | --- |
| Basic Knowledge | Data Types |  | Methods, properties (get,set), delegates, Func, Action |
| Reference and value types |  |
| Variables |  |
| Constants |  |
| Functions |  |
| Bit wise operations | ok | And(&), or(|), xor , baza 2, shift right left |
| Programming language syntax | Conditional statements |  | &&, || , de Morgan !(a&b) == !a || !b |
| Loops |  |
| Events  ***(Events, events handlers and listeners) – if applicable***  ***Todo: create your own event, raise it, handle it*** | ? |
| OOP | Classes   * Members * Properties * Assessors * Override * Overload * Static | ? | Definitie  explicatie  utilitate  exemple |
| Inheritance |  |
| Encapsulation |  |
| Polymorphism |  |
| Interfaces |  |
| Database | Tables |  |  |
| PK, FK |  |
| Select/Insert/Update/Delete |  |
| **Stored procedures** | ? |
| Data aggregation |  |
| **Views** | ? |
| Indexes | ? |
| Data access advanced | ORM – Entity Framework |  |  |
| Algorithms and data structures | Sorting |  |  |
| Grouping |  |
| Problem solving - basic |  |
| Data structures – basic  *(Lists, Collections, Dictionary, etc)* |  |
| [Recursion](https://en.wikipedia.org/wiki/Recursion) |  |  |
| Error handling | Exceptions and error handling | ? |  |
| Logging | ? |
| Threads | **Background workers**  **Report progress back to the main thread (use progress bar)** | - |
| Asynchronous operations (async/await) | - |  |
| Design Patterns and architecture | **MVC**/**MVP**/**MVVM**  **Comparison between them (understand diagrams)** |  |
| Singleton |  |  |
| DRY |  |
| KISS |  |
| Single responsibility principle |  |
| Dependency Injection |  |
| **Web services (or Web Api)**  **-Create the service part (server side) with at least one method (int sum (int a , int b))**  **- Consume the service method (sum) in a client application**  *(SOAP/REST/JSON)* |  |  |
| SOA | UI client + services |  |  |
| User interface | Third party library  *(Telerik / DevExpress)* |  |  |
| UI and UX concepts (***what are the most common controls and their properties***) |  |
| -Layout: panel+dock Types(top/bottom/left/right/center) / groupbox /splitter / tab control |  |
| -Grid  -ListView |  |
| -Dropdown / Combobox |  |
| -Autocomplete |  |
| -Button |  |
| -Checkbox  -radiobutton |  |
| -Image  -TreeView  -time picker  -color picker  -file/directory dialog  -progress bar  -rich text box editor  -tooltip |  |