Bioinformatics with mobile devices

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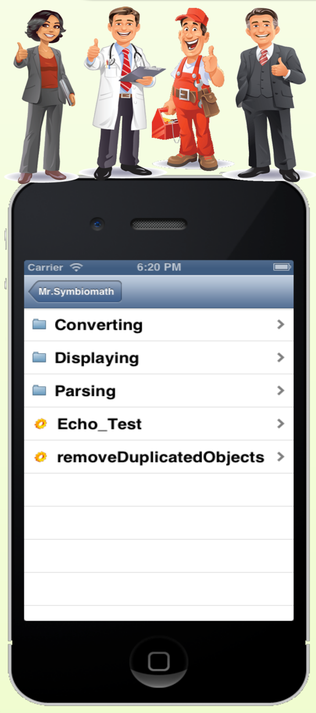
Mobile platforms *are continuously growing in popularity and importance in every aspect of everyday life. It is important that Bioinformatics and biomedical applications keep up with this trend. These platforms offer ubiquitous access, and give their users results when they really need them. However, mobile application development has its own unique challenges (i.e. limited screen size, storage, etc.). We have developed a lightweight platform independent mobile application that allows bioinformaticians to browse Web Services repositories and to invoke them.*



Motivation

Our aim is to provide a mobile application to access bionformatics web services. A service example is shown below in figure 1.

Usage of Mobile devices is significantly increasing amongst clinicians and researchers

Features

- Browsing the bioinformatics services catalogue
- Service execution upon user request
- Data retrieval
- Ubiquitous access

Some of these features can be seen in Figure 2 below.

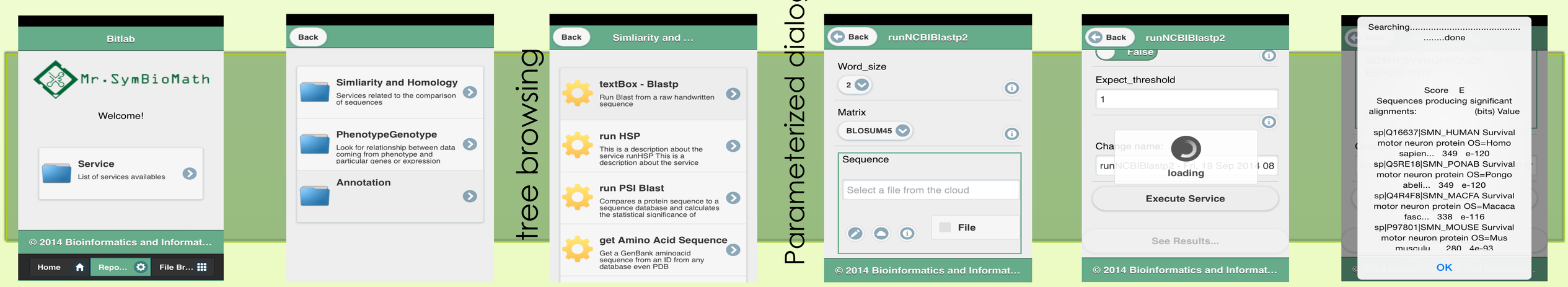


Figure 1: Service example

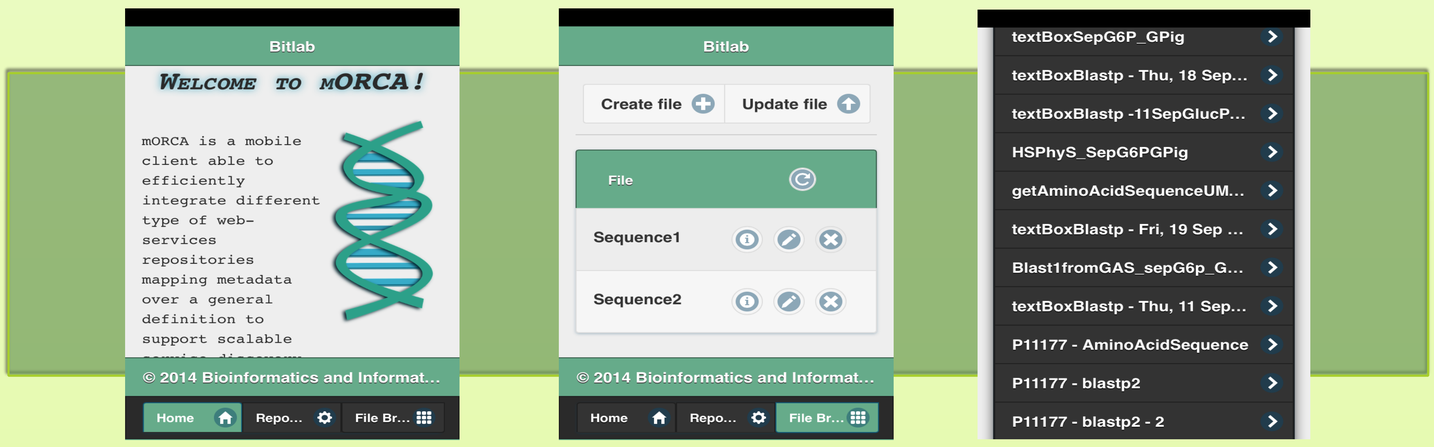


Figure 2: Features

Parameterized Dialogs

Once the service is found, the app automatically generates the interface to introduce the parameters, after which it can then be launched.
Results can be sent back to the mobile device (synchronous invocation) or the user can monitor the progress of execution (asynchronous invocation)

Conclusions

We present two exercises; the first one runs a BLAST service, and the second one is a pipeline which performs a homology search and phylogenetic study. The use of open web technologies allows us to have a platform independent application which can be accessed across a wide range of devices (e.g. Android, iOS), including desktop web browsers, through a responsive design.
In our opinion, this application represents a step forward in the ubiquitous access of bioinformatics services, thereby facilitating their access by researchers.

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Evolving intelligence

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