

Lab Exercise 6

1) Write a program that takes a filename from the user and prints the contents after removing all the whitespaces. For example,

```
>cat foo.txt
Hi hello!
My name is xyz.
I am from abc.
```

```
>./removespace
Enter filename: foo.txt
Hihello!Mynameisxyz.Iamfromabc.
```

2) Write an IO program that takes a list and a number n from the user and outputs n randomly selected elements from the list.

```
>rand_select [20,1,3,10,4,5,6] 3
[1,6,10]
```

```
>rand_select [20,1,3,10,4,5,6] 5
[3,3,5,10,20]
```

3) Define a function `tuple :: Monad m => m a -> m b -> m (a, b)` using explicit (`>>=`), do-notation and applicative operators. What does the function do for the Maybe monad?

4) Define a monadic generalisation of foldl:

`foldM :: Monad m => (a -> b -> m a) -> a -> [b] -> m a`

5) Write an interactive program that takes a binary number as input and outputs its decimal equivalent. Your program should handle errors using Maybe monad. For example,

```
>./binToDec
0101
Just 5
```

```
1011
Just 11
```

```
102
Nothing
```