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Ans. to Q. no. 1 (a)

(i) Given, team velocity is 100 story points

Velocity is the amount (avg.) of story point that can be covered in each sprint by the team.

(1-5) - 2 s.p/each
(6-10) - 3 s.p/each
(11-15) - 6 s.p./each
(16-20) - 14 s.p./each

For (16-20), we have (14×5) = 70 s.p.
For (11-15), we have (6×5) = 30 s.p.

Together we, have ~~100s~~ (70+30) = 100 s.p. that can be done in ~~sprint 1~~ the next sprint which is eaual to velocity.

(ii) (6, 11) must be together
(7, 16) " " "
(8, 17) " " "

We take (16-20) = 14×5 = 70 s.p.
We have to take (7,8) = 3×2 = 6 s.p.
We take (12-15) = 4×6 = 24 s.p.
So, total = (70+6+24) = 100 s.p.
So, we choose (7, 8, ~~12, 13, 14,~~ 12-20) for this condition.

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Ans. to Q no. 1(b)

(i)

~~Given, AB~~

I think AB should follow scrum.

Because there are multiple deliveries in every 2 weeks and some features aren't decided yet.

Scrum Events are given below:

(i) Sprint Planning
- Plans on what to select from backlog for sprint

(ii) Sprint Review

(iii) Sprint Retro
- Inspection of last sprint and improvement plans.

(iv) Daily scrum Meeting
- Daily meeting of 30 mins

Ans. to Q. no. 1(e)

The functional requiremants are:

(i) The app must support 1 million users.

(ii) The app must ~~be~~ provide service 99.98% time and if unavailable, notify user.

(iii) App failure should send messages ~~if unable to respond in 1 second.~~

~~Non-functional requirements are:~~

~~(i)~~ ~~(iv) App should respond within a second.~~

The non-functional requirements:

(i) Should respond within a second.

(ii) CPU usage less than 15%

(iii) Memory less than 20 MB.

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Ans. to Q. no. 4 (d)

For information retrieval system, we use Natural language as interaction style.

The main advantage that using natural language will make it accessible to the ~~cas~~ casual users who aren't expert with the system.

The main disadvantage is that users need to type more, to specify their requirements.

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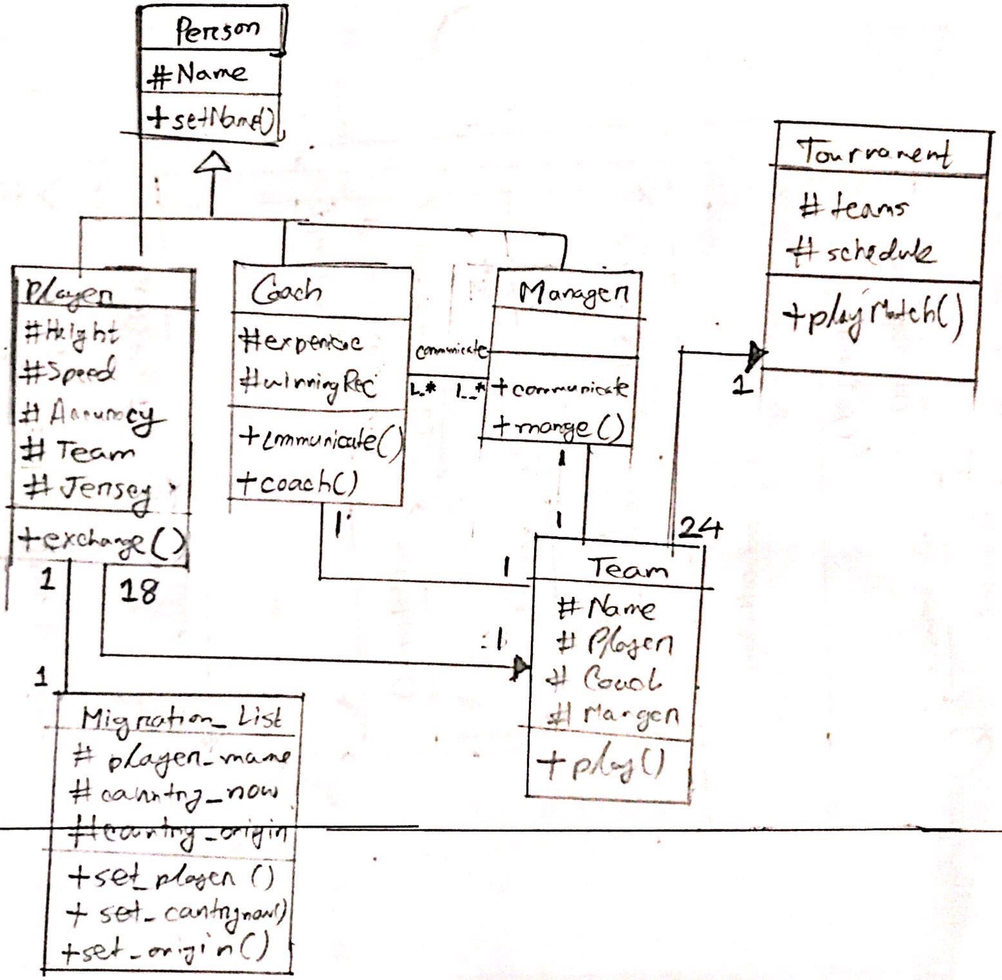
Ans. to Qn. 2(a)

Teams, players, migration, tournament, coach, manager.



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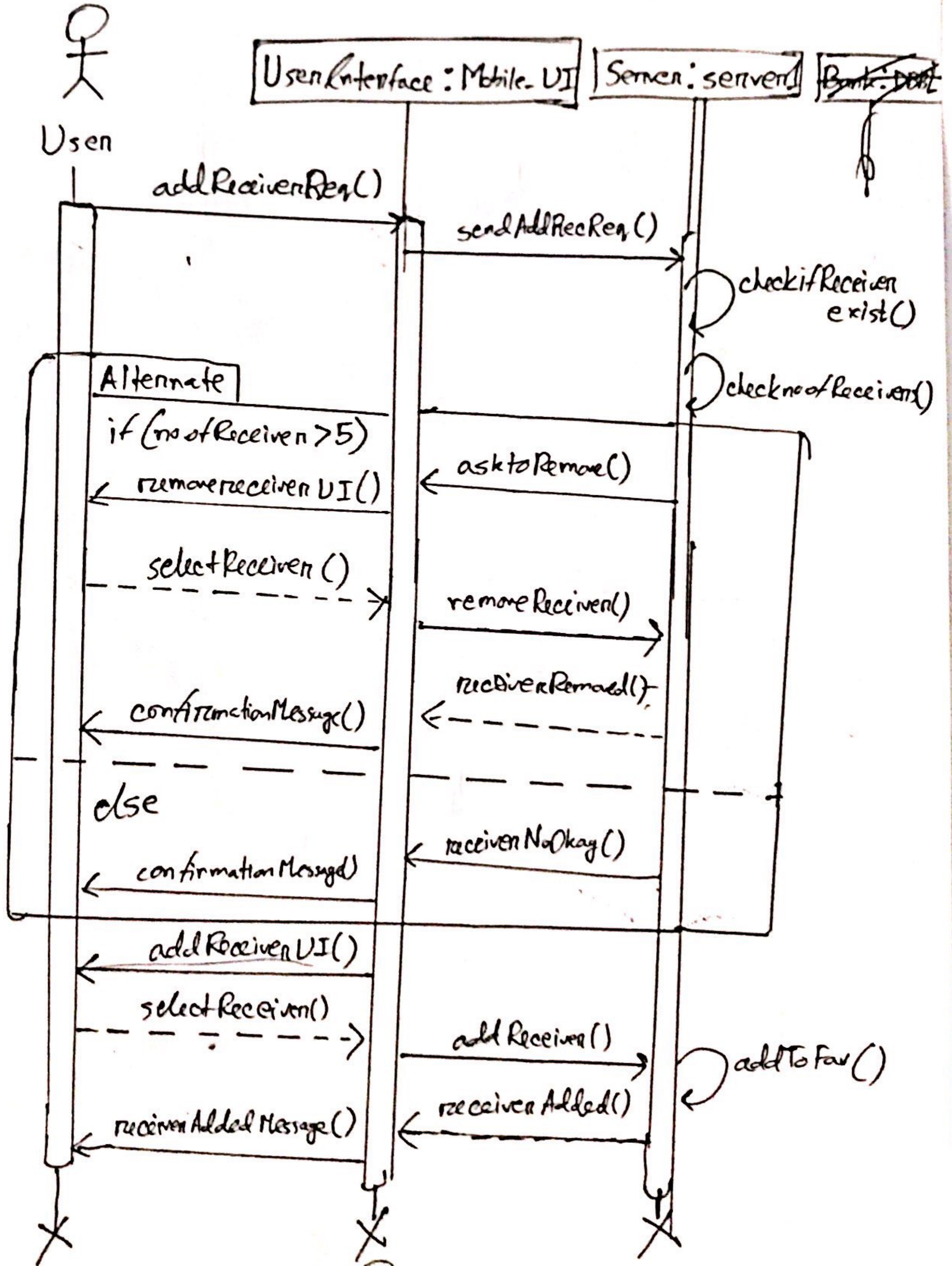
Ans. to Q no 2(b)

The required sequence diagram is given belaw

Add Receivers to Fav List



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Ans. to Q.no. 3 (a)

I think, the Open-Close principle needs to be followed to ~~ensure~~ satisfy the situation.

Here, the client wants to add new features which we predicted before and didn't want to hamper existing code. So, we are open for extension but closed for modification. If we follow OCP, then we can add new code without modifying existing code.

For example - client wants us to develop software to calculate area of circle, and rectangle.

The code can be (which ~~is~~ DOES NOT follow OCP)

```
public double area (Shape[] shapes)
(
    ~~for (int~~ double area =0;
    for (every shape)
    {
        if (shape == circle)
        {
            area+=(shape.~~len~~radius)*(shape.radius)*pi;
        }
        else if (shape == rectangle)
        {
            area+=(shape.length)*(shape.breadth);
        }
    } return area;
)
```

If we want to add a new shape, triangle, we need to modify, the area ( ) function.

Instead what if we have seperate ~~React~~ rectangle, and circle classes with theire own area() method. Then to find the area of triangle, we just need to add new class and will not modify this area funation to find total area.

Following OCP,

```
public double area (Shape [] shapes)
(
    double area=0;
    for (every shape)
    {
        area += shape.Area()      [calculates area
                                   of that shpe]
    }
    return area;
)
```

Now, a new shape can easily be added in the Shape object array as in.

```
Shape [2] = new Shape;
```

Thus, in this way more features can be added without modifying the code.

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Ans. to Q. no. 3(b)

Given, EI (simple) = 30
EO (average) = 20
EQ (average) = 35
ILF (complex) = 08
ELF (complex) = 05

Here, unadjusted function point UFP = (30 + 20 + 35 + 08 + 05)
= 98.

Again, For TDI, we have
1 significant, 1 moderate, 1 average and rest (11) identical.

So, TDI = 4 + 3 + 2 + 13 × 1
= 22

So, Value ajusted factor,
VAF = 22 × 0.01 + 0.065
= 0.22 + 0.065
= 0.285

∴ AFP = 98 × 0.285
= 27.93 (Ans)